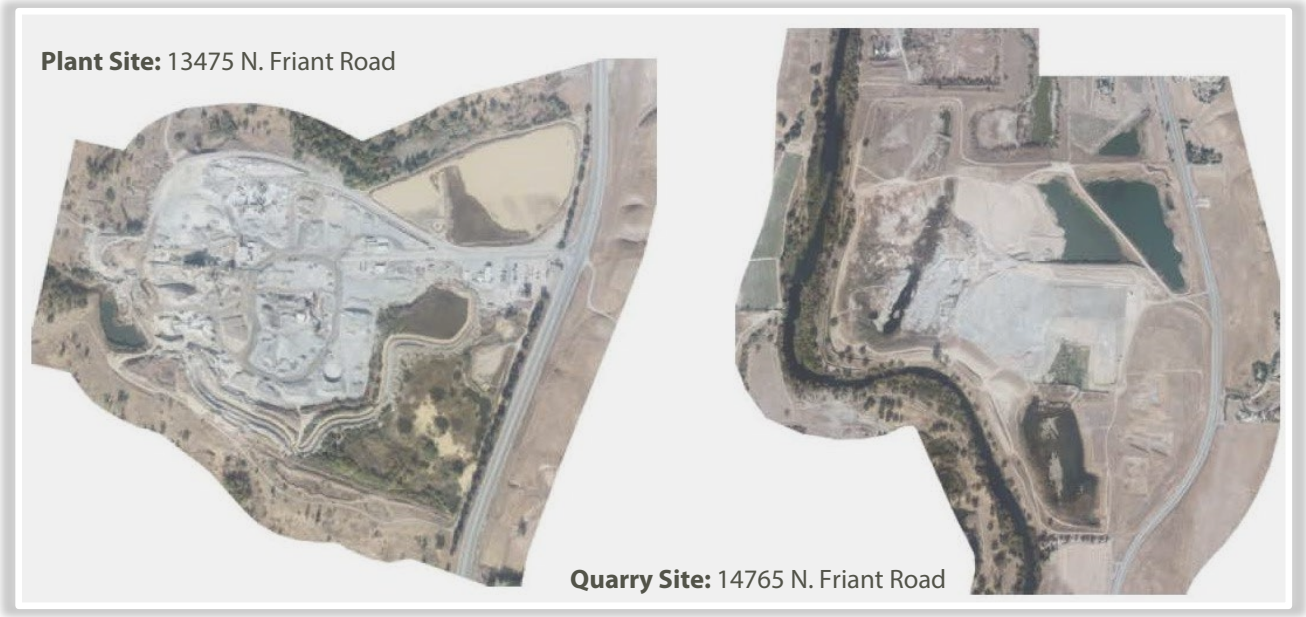
CEMEX ROCKFIELD QUARRY

ROCKFIELD MODIFICATION PROJECT (EIR 7763) AND UNCLASSIFIED CONDITIONAL USE PERMIT APPLICATIONS NOS. 3666 AND 3667

FINAL ENVIRONMENTAL IMPACT REPORT

State Clearinghouse No. 2020060123

VOLUME II: APPENDICES



SEPTEMBER | 2026

Lead Agency
County of Fresno, Community Development

BENCHMARK RESOURCES

CEMEX ROCKFIELD QUARRY

ROCKFIELD MODIFICATION PROJECT (EIR 7763) AND UNCLASSIFIED CONDITIONAL USE PERMIT APPLICATIONS NOS. 3666 AND 3667

FINAL ENVIRONMENTAL IMPACT REPORT

State Clearinghouse No. 2020060123

VOLUME II: APPENDICES

SEPTEMBER | 2026

Lead Agency
County of Fresno,
2220 Tulare Street, 6th Floor, Fresno, CA 93721

EIR Preparer
Benchmark Resources
2515 East Bidwell Street, Folsom, CA 95630

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APPENDIX A-3
NOP COMMENT LETTERS

Monfette, Christina

From: art alvarado <artnmags@sbcglobal.net>
Sent: Friday, June 26, 2020 7:24 PM
To: Monfette, Christina
Subject: Cemex proposal

We live in the area of Woodward Lake. We hear the traffic on Friant, we hear the heavy cement trucks and other heavy equipment rolling by on Friant. We are totally against Cemex's proposal to continue and now expand by using dynamite. It is ruining the scenery, air, and area with all the pollution and now increased noise pollution.

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 29, 2020 11:57 AM
To: art alvarado
Subject: RE: Cemex proposal (EIR 7763)

Good afternoon,

Thank you for providing comments on the subject application. Please include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments will be considered in the development of the scope of impacts to be considered by the Draft EIR. The Draft EIR will provide a discussion on the extent of potential impacts identified by the scoping process and may propose mitigation measures to reduce such impacts.

If you have any questions or if you would like to submit additional comments, please don't hesitate to reach out to me at the contact information below. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date. Please note that we are in receipt of your comments submitted to this email address and through our online comment system.

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. Suite A, Fresno, CA 93721 Main Office: (559) 600-4230 Direct: (559) 600-4245

-----Original Message-----
From: art alvarado <artnmags@sbcglobal.net>
Sent: Friday, June 26, 2020 7:24 PM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: Cemex proposal

We live in the area of Woodward Lake. We hear the traffic on Friant, we hear the heavy cement trucks and other heavy equipment rolling by on Friant. We are totally against Cemex's proposal to continue and now expand by using dynamite. It is ruining the scenery, air, and area with all the pollution and now increased noise pollution.

Submitter DB ID	16272
IP Address	96.71.230.22
Submission Recorded On	06/12/2020 1:41 PM
Time to Take the Survey	9 minutes, 59 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Art Avakian

2. Organization/Business

Home owener

3. What is your address?

15338 Mesa View

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

artavakian@yahoo.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I am concerned not just about the area and the impact that this project is posing to the neighborhoods like mine, but is will be unacceptable damage to th landscape and entire development in the Friant city. The other substantial issues that are concerning me as a resident of the immediate area of the proposed plan is heavy industrial negative impact to the area. The presence of this type of plant is going to have irreversible impact on bio-population of the entire stretch of Friant road neighboring other developments and water resources.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

I am protesting acceptance of such a disastrous development project.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Submitter DB ID	16273
IP Address	96.71.230.22
Submission Recorded On	06/12/2020 1:51 PM
Time to Take the Survey	7 minutes, 49 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Marina

2. Organization/Business

Not answered

3. What is your address?

15338 Mesa View

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

artavakian@yahoo.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

All of the above is concerning me. I have very sensitive lungs and can not take the dust that is going to be big part of the project. The noise is another factor that is going to be absolute NO to this project. Otherwise Cemex has to arrange to relocate my family, purchase my house and arrange all the moving expenses to similar Luxury setting as my property is. I am against the expansion and development of the site for the future mining. Voting NO.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Email: cmonfettc@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Tuesday, June 16, 2020 10:17 AM
To: artavakian@yahoo.com
Subject: Confirmation of Receipt of Comments (EIR 7763)

Good morning,

I am sending you this email to confirm receipt of the comments you submitted regarding the Cemex Rockfield Modification Project through our online comment system. Your comments were received prior to the deadline and therefore will be considered as part of the scoping review for this project. This part of the process helps to determine where the Environmental Impact Report should focus in order to address potentially significant environmental impacts.

Your email address has been added to the list to receive digital notice regarding this application.

If you have any questions about this project, please feel free to reach out to me with the contact information below.

Thank you,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	16422
IP Address	96.71.230.22
Submission Recorded On	06/17/2020 4:22 PM
Time to Take the Survey	14 minutes, 45 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Artashes Avakian

2. Organization/Business

Not answered

3. What is your address?

15338 Mesa View

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

artavakian@yahoo.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I am responding back to you regarding the project that has been put on the table for the discussion. I am not sure if I have to explain to anyone about this horrible idea to even plan to relocate or consider that for the such a pristine preserved natural site as we are blessed in Friant. I have short answer to that discussion NO. We are NOT going to allow that disaster to happen here. Where are the environmentalists, where are the people from air pollution department. I am convinced that everyone who is going to learn about this project will see the negative impact hat it will have on Air, water will be contaminated and poisoned, depleted. What is going to happen then?
NO to the project.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Air and water quality. The water sources will be depleted due to aggressive and invasive methods of excavation. It will be unacceptable geological damage and wound created in the middle of newly developing city. NO to the project.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 29, 2020 9:46 AM
To: artavakian@yahoo.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project. We are in receipt of two comment submissions from you.

Please let me know if you have any questions. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	17485
IP Address	209.30.244.187
Submission Recorded On	06/20/2020 10:24 AM
Time to Take the Survey	4 minutes, 21 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Anthony Bronco

2. Organization/Business

Not answered

3. What is your address?

438 E Salmon River Dr

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

anthonybronco@att.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

EIR 7763

Increased emissions of pollutants and greenhouse gases

Impacts to protected plant and animal species and their habitats

Impacts to soil conditions and slope stability

Impacts to hydrology and water quality related to the proposed deeper mining, including blasting

Increased traffic between project sites

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 22, 2020 8:42 AM
To: anthonybronco@att.net
Subject: EIR 7763 - Confirmation of Receipt of Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	17802
IP Address	2600:387:6:80f::4c
Submission Recorded On	06/27/2020 5:27 PM
Time to Take the Survey	6 minutes, 18 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Amanda Nugent Divine

2. Organization/Business

Monte Verde Neighborhood

3. What is your address?

3445 E Via Montiano Avenue

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

amandanugentdivine@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

It is completely unacceptable that this project will be conducting blasts and creating water risks for nearby Residential communities. We object to proximity and ask you relocate your project.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

The best mitigation is not to do it

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 29, 2020 11:25 AM
To: amandanugentdivine@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18102
IP Address	2600:1700:cf60:c7f0::38db:1a18:298d:8f40
Submission Recorded On	07/05/2020 11:15 PM
Time to Take the Survey	2 minutes, 45 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Amber Donat

2. Organization/Business

Not answered

3. What is your address?

219 N Calaveras 93701

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

Not answered

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I am very concerned about the long term effects of this project. Please do not do this here.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

A new location or just not doing this project all together.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ea.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Camacho, Juana
Sent: Monday, June 29, 2020 8:46 AM
To: Craft, Lisa
Cc: Monfette, Christina
Subject: RE: Opposition to CEMEX

Thank you.

Juana Camacho| Program Technician
Department of Public Works and Planning | Administration
2220 Tulare St. 8th Floor Fresno, CA 93721
Main Office: (559) 600-4078 Direct: (559) 600-4300
Your input matters! Customer Service Survey

From: Craft, Lisa <lcraft@fresnocountyca.gov>
Sent: Monday, June 29, 2020 8:18 AM
To: White, Steven <stwhite@fresnocountyca.gov>; Jimenez, Bernard <BJimenez@fresnocountyca.gov>; Benjamin, Marc <mbenjamin@fresnocountyca.gov>; Bourbon, Kelliana <kbourbon@fresnocountyca.gov>; Day, Vickie <vday@fresnocountyca.gov>; Jeffers, Robert <rjeffers@fresnocountyca.gov>; Jones, Lindsay <lejones@fresnocountyca.gov>; Martinez, Ari (Harim) <hamartinez@fresnocountyca.gov>; Rapada, Steve <srapada@fresnocountyca.gov>; Rush, Bret <brush@fresnocountyca.gov>; Tangipa, David <dtangipa@fresnocountyca.gov>; Zaragoza, Jessika <jzaragoza@fresnocountyca.gov>
Cc: Camacho, Juana <jcamacho@fresnocountyca.gov>
Subject: FW: Opposition to CEMEX

Good Morning,
We received the following in our ClerkBOS email.

Thank you,
Lisa

Lisa Craft | **Deputy Clerk I**
Board of Supervisors
2281 Tulare St., Room 301, Fresno, CA 93721
Direct Line: (559) 600-1603
Main Office: (559) 600-3529, Option 4
lcraft@fresnocountyca.gov
The County of Fresno is an Equal Opportunity Employer

From: DJ and Jill Agellon <djandjill@gmail.com>
Sent: Friday, June 26, 2020 9:01 PM
To: Clerk/BOS <ClerkBOS@fresnocountyca.gov>
Subject: Opposition to CEMEX

Board of Supervisors, please do not allow Cemex to extend their contract and mining in this area. We currently live in Tuscan Bluffs off Friant Road and strongly oppose the Cemex project extension. Please do not allow air, noise, and water pollution to affect our community. The San Joaquin River Parkway should be restored. Further, Friant Road is already very dangerous and we can't imagine what adding more truck traffic to it would cause.

Thank you for your time and consideration,

The Agellon Family
(Concerned neighbors)

Monfette, Christina

From: DJ and Jill Agellon <djandjill@gmail.com>
Sent: Friday, June 26, 2020 9:04 PM
To: Monfette, Christina
Subject: CEMEX project opposition

County Planners, please do not allow Cemex to extend their contract and mining in this area. We currently live in Tuscan Bluffs off Friant Road and strongly oppose the Cemex project extension. Please do not allow air, noise, and water pollution to affect our community. The San Joaquin River Parkway should be restored. Further, Friant Road is already very dangerous and we can't imagine what adding more truck traffic to it would cause.

Thank you for your time and consideration,

The Agellon Family
(Concerned neighbors)

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 29, 2020 12:02 PM
To: DJ and Jill Agellon
Subject: RE: CEMEX project opposition (EIR 7763)

Good afternoon,

Thank you for providing comments on the subject application. Please include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments will be considered in the development of the scope of impacts to be considered by the Draft EIR. The Draft EIR will provide a discussion on the extent of potential impacts identified by the scoping process and may propose mitigation measures to reduce such impacts.

If you have any questions or if you would like to submit additional comments, please don't hesitate to reach out to me at the contact information below. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

From: DJ and Jill Agellon <djandjill@gmail.com>
Sent: Friday, June 26, 2020 9:04 PM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: CEMEX project opposition

County Planners, please do not allow Cemex to extend their contract and mining in this area. We currently live in Tuscan Bluffs off Friant Road and strongly oppose the Cemex project extension. Please do not allow air, noise, and water pollution to affect our community. The San Joaquin River Parkway should be restored. Further, Friant Road is already very dangerous and we can't imagine what adding more truck traffic to it would cause.

Thank you for your time and consideration,

The Agellon Family
(Concerned neighbors)

Monfette, Christina

From: DJ and Jill Agellon <djandjill@gmail.com>
Sent: Friday, June 26, 2020 9:04 PM
To: Monfette, Christina
Subject: CEMEX project opposition

County Planners, please do not allow Cemex to extend their contract and mining in this area. We currently live in Tuscan Bluffs off Friant Road and strongly oppose the Cemex project extension. Please do not allow air, noise, and water pollution to affect our community. The San Joaquin River Parkway should be restored. Further, Friant Road is already very dangerous and we can't imagine what adding more truck traffic to it would cause.

Thank you for your time and consideration,

The Agellon Family
(Concerned neighbors)

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 29, 2020 12:11 PM
To: djandjill@gmail.com
Subject: EIR 7763 Confirmation of Receipt of Comments

Good afternoon,

Thank you for providing comments on the subject application. Please include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex which were sent to the Clerk to the Board of Supervisors. Your comments will be considered in the development of the scope of impacts to be considered by the Draft EIR. The Draft EIR will provide a discussion on the extent of potential impacts identified by the scoping process and may propose mitigation measures to reduce such impacts.

If you have any questions or if you would like to submit additional comments, please don't hesitate to reach out to me at the contact information below. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18151
IP Address	2601:205:381:4170:382a:b65f:d22a:834c
Submission Recorded On	07/06/2020 1:29 PM
Time to Take the Survey	18 minutes, 58 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Adriana Gonzalez

2. Organization/Business

Concerned citizen

3. What is your address?

6338 N Cleo Ave Fresno CA 93722

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

adriana104862@yahoo.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

My concern first and foremost is the Environmental, ecological damage, and pollution to both people, plants, and animals. STOP! - NOW!

The Notice of Preparation notes anticipated environmental impacts include:

Increased emissions of pollutants and greenhouse gases

Impacts to protected plant and animal species and their habitats

Impacts to soil conditions and slope stability

Impacts to hydrology and water quality related to the proposed deeper mining, including blasting

Increased traffic between project sites

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

No blasting.

No more contamination of our water and land.

Stop polluting.

Respect land, water, and species.

The environmental damage is evident.

EIR 7763.

Stop expanded mining Now!

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Tuesday, July 7, 2020 8:29 AM
To: 'adriana104862@yahoo.com'
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| **Planner**
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	17977
IP Address	2602:304:cec2:6610:59f9:ca45:73a1:2608
Submission Recorded On	07/02/2020 1:48 PM
Time to Take the Survey	7 minutes, 20 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Anthony H. Horan

2. Organization/Business

Assoc. Clin. Prof. Urol. UCSF (ret. VA Fresno)

3. What is your address?

3781 West Spruce

4. Would you like to he added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

anthonyhhoran@yahoo.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The San Joaquin River has been mined enough. We do not need granite fragments to lodge in the gills of our nascent salmon run. We do not need more down stream obstruction during floods. Abandon the whole project. AHH

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Give up the whole project.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 9:22 AM
To: 'anthonyhhoran@yahoo.com'
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Monfette, Christina

From: Motta, Chris
Sent: Thursday, June 25, 2020 2:52 PM
To: Monfette, Christina
Cc: Randall , David A.
Subject: FW: Cemex / San Joaquin River

Public comment for Cemex project file.

Chris W. Motta, MURP| Principal Planner

Department of Public Works and Planning | Development Services and Capital Projects Division

2220 Tulare St. 6th Floor Fresno, CA 93721

Main Office: (559) 600-4497 Direct: (559) 600-4227 Your input matters! Customer Service Survey

-----Original Message-----
From: Jimenez, Bernard <BJimenez@fresnocountyca.gov>
Sent: Thursday, June 25, 2020 2:25 PM
To: Kettler, William <WKettler@fresnocountyca.gov>; Motta, Chris <CMotta@fresnocountyca.gov>
Subject: FW: Cemex / San Joaquin River

Bernard Jimenez| Assistant Director

Public Works and Planning | Administration

2220 Tulare St. 6th Floor Fresno, CA 93721

Direct: (559) 600-4234 / Main Office: (559) 600-4078 Your input matters! Customer Service Survey

-----Original Message-----
From: Craft, Lisa <lcraft@fresnocountyca.gov>
Sent: Thursday, June 25, 2020 2:23 PM
To: White, Steven <stwhite@fresnocountyca.gov>; Jimenez, Bernard <BJimenez@fresnocountyca.gov>; Benjamin, Marc <mbenjamin@fresnocountyca.gov>; Bourbon, Kelliana <kbourbon@fresnocountyca.gov>; Day, Vickie <vday@fresnocountyca.gov>; Jeffers, Robert <rjeffers@fresnocountyca.gov>; Jones, Lindsay <lejones@fresnocountyca.gov>; Martinez, Ari (Harim) <hamartinez@fresnocountyca.gov>; Rapada, Steve <srapada@fresnocountyca.gov>; Rush, Bret <brush@fresnocountyca.gov>; Tangipa, David <dtangipa@fresnocountyca.gov>; Zaragoza, Jessika <jzaragoza@fresnocountyca.gov>
Cc: Camacho, Juana <jcamacho@fresnocountyca.gov>
Subject: FW: Cemex / San Joaquin River

Good Afternoon,

Received the following in our ClerkBOS email.

Thank you,
Lisa

Lisa Craft | Deputy Clerk I

Board of Supervisors

-----Original Message-----
From: Aaron Hill <aaronhill18801@gmail.com>
Sent: Thursday, June 25, 2020 1:24 PM
To: Clerk/BOS <ClerkBOS@fresnocountyca.gov>
Subject: Cemex / San Joaquin River

Good afternoon,

I am emailing to strongly oppose the approval of the Cemex plan to mine the San Joaquin River. I am a resident that lives downwind of the site and all of the ultra fine particulate matter that will be sent into the air as well as the noise and potential water pollution will be very harmful to myself and our community. I respectfully request that the Fresno County board of supervisors deny the Cemex request.

Best regards,

Aaron Hill

Sent from my iPhone

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 29, 2020 11:53 AM
To: aaronhill18801@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Comments

Good morning,

Thank you for providing comments on the subject application to the Board of Supervisors. This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments will be considered in the development of the scope of impacts to be considered by the Draft EIR and a copy has been provided to the Clerk to the Board. The Draft EIR will provide a discussion on the extent of potential impacts identified by the scoping process and may propose mitigation measures to reduce such impacts.

If you have any questions or if you would like to submit additional comments, please don't hesitate to reach out to me at the contact information below. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18169
IP Address	2600:1700:7f70:25a0:5444:2b34:22f4:ce66
Submission Recorded On	07/06/2020 3:28 PM
Time to Take the Survey	13 minutes, 29 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Annie McCuen

2. Organization/Business

Retired

3. What is your address?

329 East Avante

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

ruth_mccuen@att.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I have many concerns regarding this project, primarily those that impact the environment and the length of time that Cemex is requesting.
This project will negatively impact the River, the habitat bordering the river and the community adjacent to the quarry. Mitigation may reduce some of the impacts but not nearly enough.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

The only measure that can be taken to alleviate the negative impacts of a project like this is to fully deny this project.
The impacts are too many and too serious,
this project should never been considered feasible , it does far too much environmental damage.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Monfette, Christina

From: Monfette, Christina
Sent: Tuesday, July 7, 2020 8:39 AM
To: 'ruth_mccuen@att.net'
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| **Planner**
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18054
IP Address	2607:fb90:cc20:11b6:bd04:f5ca:727d:c121
Submission Recorded On	07/03/2020 4:44 PM
Time to Take the Survey	2 minutes, 12 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Ayesha

2. Organization/Business

Not answered

3. What is your address?

Not answered

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

Not answered

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Please do not do this. I don't want to further compromise the state of our environment.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Submitter DB ID	18012
IP Address	153.48.247.250
Submission Recorded On	07/03/2020 6:26 AM
Time to Take the Survey	3 minutes, 30 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Bronco Anthony

2. Organization/Business

Not answered

3. What is your address?

Chowchilla, CA

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

anthony.bronco2@cdcr.ca.gov

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

EIR 7763 restore the river

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

EIR 7763 restore the river

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 10:41 AM
To: 'anthony.bronco2@cdcr.ca.gov'
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18147
IP Address	2600:1700:dffo:babo:dc70:61cb:c1bf:cc73
Submission Recorded On	07/06/2020 1:01 PM
Time to Take the Survey	20 minutes, 21 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Bruce A. Roberts

2. Organization/Business

Retired Agronomist

3. What is your address?

5634 West River Bottom Ave

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

baroberts@csufresno.edu

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

My objection to the CEMX Rockfield Expansion Project (EIR 7763) are based on the following concerns:

1. Project negates decades of downstream river restoration for native fish habit and seasonal migrations.

2. Under estimations for impacts of secondary emissions/traffic caused from excavation and transport traffic emissions.

I am also concerned about the effects of such a deep excavation on surface river flow and ground water levels and quality during the life of this project.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Monfette, Christina

From: Monfette, Christina
Sent: Tuesday, July 7, 2020 8:28 AM
To: baroberts@csufresno.edu
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

RECEIVED
COUNTY OF FRESNO
JUL 06 2020
DEPARTMENT OF PUBLIC WORKS
AND PLANNING
DEVELOPMENT SERVICES DIVISION
EIR 7763

July 4, 2020

Ms. Christina Monfette
County of Fresno
Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Submitted by email to: cmonfette@fresnocountyca.gov

RE: CEMEX Rockfield Expansion Project
EIR 7763, CUP 3666 and 3667

Dear Ms Monfette:

I am writing to share my concerns regarding the CEMEX Rockfield Expansion Project. I am a county resident who lives near the San Joaquin River. I have been in the area for over 20 years and one of the crown jewels is the river, it's associated parks, trails, water sports, and fishing. Expanding the Cemex operation will certainly have a negative impact on the residents of Fresno County.

I already spend nearly every day driving past the Cemex operation on Friant road. It is nothing but an eyesore that creates heavy equipment traffic, dusty conditions, and damage to existing roads. The surface scarring detracts from the river beauty that remains. Fresno already has some of the worst air in the country and is routinely pointed out on local news sources. Adding further trucking operations and blasting will have a negative impact on the air quality and health of our residents.

Spending time on the river, either by canoe, kayak, or walking its banks is truly one of the last peaceful retreats many county and city residents have. Please do not let short term private financial gains leave a lasting impact for current and future generations to deal with.

Sincerely,

Brian Austin
18767 Via Mira Bella
Friant, CA 93626

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 3:42 PM
To: Brian Austin
Subject: RE: CEMEX Rockfield Expansion Project (EIR 7763)

Good afternoon,

Thank you for providing comments on the subject application. Please include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments will be considered in the development of the scope of impacts to be considered by the Draft EIR.

If you have any questions, please don't hesitate to reach out to me at the contact information below.

Thank you again,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Please note that our offices are currently closed to the public. If you would like to drop off files or make an in-person submission, you must call ahead and make arrangements with staff. Per the Governor's Order, masks will be required. We apologize for any inconvenience this may cause and thank you for your help to reduce the spread of Covid-19.

From: Brian Austin <austin-brian@att.net>
Sent: Sunday, July 5, 2020 4:38 PM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: CEMEX Rockfield Expansion Project

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

July 4, 2020

Ms. Christina Monfette
County of Fresno
Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Submitted by email to: cmonfette@fresnocountyca.gov

RE:
CEMEX Rockfield Expansion Project
EIR 7763, CUP 3666 and 3667

Dear Ms Monfette:

Submitter DB ID	17591
IP Address	71.195.178.88
Submission Recorded On	06/23/2020 1:05 PM
Time to Take the Survey	27 minutes, 41 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Becky Chambers

2. Organization/Business

Homeowner

3. What is your address?

2596 West Sample Fresno CA 93711

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

beckychambers@hotmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Of course we need jobs in Fresno county but not at the expense of air and water quality. I also don't believe we should encourage projects and developments that do further damage to the salmon habitat. The Friant area Is an important one for outdoor recreation in our valley. Let's not take away from the few places that are generally accessible for fishing and recreation in the Central Valley. Finally I regard the depletion of clean water and subsequent lowering of the water table as a huge concern to our community and the most serious issue that should be addressed. Please stop this project!

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 29, 2020 9:34 AM
To: beckychambers@hotmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18059
IP Address	2605:e000:7e07:3100:2cb3:ad3f:9b0f:2fd9
Submission Recorded On	07/03/2020 7:31 PM
Time to Take the Survey	13 minutes, 9 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brian Esquivel

2. Organization/Business

Concerned Civillian

3. What is your address?

No Answer

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

Not answered

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Why is this happening near the San Joaquin River? Now that you read that, I hope you have a great answer. Mining would have a negative consequence no matter if it is small or large scale. My primary concern is the contamination of the water. As there is various ground water channels that are interconnected and I'm sure feed into the river.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

I don't believe in mitigation. Please don't make it come into fruition.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Submitter DB ID	18170
IP Address	2600:1702:1c20:6840:e14b:8cba:dd82:e5be
Submission Recorded On	07/06/2020 3:29 PM
Time to Take the Survey	43 minutes, 4 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brad Greenbury

2. Organization/Business

Not answered

3. What is your address?

2621 E Omaha

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

gradbury@comcast.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I am vehemently opposed to the Cemex EIR No. 7763 for the following reasons. The mining that has taken place over the past 100 years or so has done significant damage to eco-system of the San Joaquin River. This practice should stop sooner not later. The proposed mining will make the Lost Lake Camp Ground, one of the few available campgrounds along the river below Friant Dam, less enjoyable. Given the limited natural recreation opportunities in the Fresno metro area the County should be making a greater effort to expand on what little there is rather than locking a significant amount of land away for 30 years. The plan under the EIR is going in the wrong direction and future generations will pay for this should the plan be approved.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

The proposed 30 year life of the plan is far too long. The mitigation measures outlined at the end of the projects life span are so vague as to make them unenforceable. Cemex has detailed what it wants to get from the site but has not detailed what it will do with the site when it is no longer profitable. How much money will Cemex dedicate to this site once they are done with it, no one knows. No bonds have been proposed to ensure that the mitigation measures will carried out to the satisfaction of the community.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Monfette, Christina

From: Monfette, Christina
Sent: Tuesday, July 7, 2020 8:41 AM
To: gradbury@comcast.net
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18055
IP Address	23.122.241.16
Submission Recorded On	07/03/2020 4:50 PM
Time to Take the Survey	1 minutes, 10 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brandon Hill

2. Organization/Business

Not answered

3. What is your address?

1875 n pistachio

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

Not answered

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Not answered

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Submitter DB ID	17660
IP Address	2600:1700:7710:4130:7472:5bd0:b988:2a3
Submission Recorded On	06/24/2020 2:02 PM
Time to Take the Survey	21 minutes, 51 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Bob Hills

2. Organization/Business

retired interested in conservation

3. What is your address?

11340 N. Blue Sage Ave Fresno, Ca 93730

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

r.hills@sbcglobal.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I am interested in specifically how Cemex ascertained that this area would need 6 million tons of construction aggregate over the next 50 years and what specific distributing area that Cemex is referring to.

I think a traffic study would need to be done, considering that they are tripling the loads coming out of the plant within 10 years. Within 30 years there will be 3 trucks coming or going every minute.

With Fresno having some of the worst air quality in the nation, when will Fresno step up and say no more. Our children and elderly are already subject to every respiratory ailment imaginable. This effects life expectancy, as well as quality of life.

It doesn't seem reasonable to draw 240 acre feet of ground water out of the San Joaquin River for the next 100 years. There are several developments going into the area as well as housing going in all around the area. They need to ascertain if the wells in the area, as well as water pressure can withstand that kind of pressure.

Cemex claims to be a good steward of the river. Were they good stewards of the Sacramento River in 2018 when they discharged polluted storm water int the river. Were they good neighbors when 4 adjacent wells went dry at the Stillwell mine in Lemon Cove. Were they good neighbors in 2016 when they were sued by Alabama, Kentucky , Tennessee and Texas for emitting Sulfur Dioxide and nitrogen emissions into the atmosphere. Were they good neighbors in Colorado in 2004-2006 for violating for dust and temperature violations.

Since 2000 they have been fined 47 million dollars for penalties for various issues involving environmental (49 issues), safety and health issues(403),wage and hour issues(2),labor relations(5) and 1 discrimination issue.

Cemex needs to be specific on how much noise is going to be generated, how far blast vibrations are allowed, and air quality emissions.

I am not only concerned about the dynamiting, but also the use of gas fracturing next to the river.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Since Cemex has had issues outside of the parameters of their Environmental impact of their operations, if their proposal is allowed, their needs to be constant monitoring of all environmental issues at the plant.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Friday, June 26, 2020 4:38 PM
To: Robert Hills
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good afternoon,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18082
IP Address	73.235.160.161
Submission Recorded On	07/05/2020 6:21 AM
Time to Take the Survey	5 minutes, 55 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brian Loven

2. Organization/Business

Fly Fishers for Conservation

3. What is your address?

2490 Stroud Ave, Kingsburg CA 93631

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

bdloven@live.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

After all the money spent on salmon restoration, how could possibly be a good thing for ongoing restoration efforts??

Too many unknown factors dynamiting a 600 foot whole in bedrock near a river.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

None known....

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 11:43 AM
To: 'bdloven@live.com'
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18047
IP Address	76.114.21.172
Submission Recorded On	07/03/2020 3:26 PM
Time to Take the Survey	2 minutes, 57 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brenda Markham

2. Organization/Business

Not answered

3. What is your address?

665 E Teal Circle

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

markhambrenda2@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Cemex's application for a new conditional use permit to continue mining operations near the San Joaquin River for 100 years is appalling. The San Joaquin River has suffered enough already. I thought we were in the process of restoring the river, including bringing back the salmon. The blasting of a 600-foot-deep pit into hard rock near the San Joaquin is hardly a way of protecting the river.

Detrimental effects would be numerous- common sense tells us that there will be trouble for the nearby wildlife (let alone the local residents having to pu up with noise, traffic and pollution).

It seems to me that our politicians and bureaucrats have their priorities mixed up; we need protection NOT destruction of the San Joaquin River. What about the San Joaquin River Parkway-is not this supposed to be part of the general plan? The Parkway is designed to be a natural and recreational area- in harmony with the environment. Blasting a 600-foot deep hole would certainly NOT be compatible with the Parkway. Please, no more damage to the San Joaquin.

7.

Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 10:52 AM
To: markhambrenda2@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| **Planner**
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	17493
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 4:35 PM
Time to Take the Survey	44 minutes, 31 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brian McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave Friant, CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

union.brian@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The Cemex Mining Project proposes to drill and blast approximately 600 feet down into the bedrock adjacent to the San Joaquin River. Noise pollution from said drilling and blasting will disrupt the wildlife habitat in the river basin and cause migration of birds and land animals from the area.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Drilling and blasting should not be permitted in this important wildlife habitat.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Submitter DB ID	17494
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 4:44 PM
Time to Take the Survey	6 minutes, 58 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brian McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave Friant, CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

union.brian@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The Cemex Mining Project proposes to drill and blast approximately 600 feet down into the bedrock adjacent to the San Joaquin River. Unintended consequences from the drilling and blasting vibrations could do damage to the structural integrity of nearby Friant Dam, which could require expensive repairs to the dam or, worse, cause the dam to fail and flood the river basin.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Drilling and blasting should not be permitted by the County due to the unimaginable damage this could cause to an aging Friant Dam.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Submitter DB ID	17495
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 4:53 PM
Time to Take the Survey	8 minutes, 25 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brian McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave Friant, CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

union.brian@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The Cemex Mining Project proposes to drill and blast approximately 600 feet down into the bedrock adjacent to the San Joaquin River. Unintended consequences from the drilling and blasting will likely include damage to nearby aquifers, which are relied on by residents in the surrounding area. Wells could run dry if the drilling and blasting does harm to aquifer, include wells that the County itself is responsible for managing.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Drilling and blasting should not be permitted by the County due to the harm this could do to nearby aquifers and wells.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Submitter DB ID	17496
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 4:59 PM
Time to Take the Survey	5 minutes, 44 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Not answered

2. Organization/Business

Not answered

3. What is your address?

Not answered

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Not answered

5. Please provide your email address.

Not answered

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The Cemex Mining Project proposes to drill and blast approximately 600 feet down into the bedrock adjacent to the San Joaquin River. Unintended consequences from the drilling and blasting methods will include harm to the water quality in nearby aquifers and wells relied upon by neighboring residents for drinking water.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Drilling and blasting should not be permitted by the County due to the impact on drinking water this will likely have to residents in the area.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Submitter DB ID	17497
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 5:10 PM
Time to Take the Survey	10 minutes, 47 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brian McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave Friant, CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

union.brian@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The Cemex Mining Project proposes to drill and blast approximately 600 feet down into the bedrock adjacent to the San Joaquin River. Extreme noise pollution from the drilling and blasting will make nearby homes uninhabitable. Since the initial gravel project began in the river basin decades ago, the County has approved several residential projects in the area. Some are in the works. All will become uninhabitable during Cemex operating hours. This will make it impossible to work from home, as my wife does, or simply to wake up to anything but the blasts, scraping and drilling of the mine. We really have no precedence for this level of noise pollution in the County and the project proposes to do this in a residential area normally known for peace and quiet.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Drilling and blasting should not be permitted by the County due to the extreme noise pollution this will cause throughout the river basin, rendering residential properties, which have been approved by the County for this area, uninhabitable and not fit for those who work from home, during Cemex operating hours.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Submitter DB ID	17499
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 5:22 PM
Time to Take the Survey	9 minutes, 46 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brian McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave Friant, CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

union.brian@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The Cemex Mining Project proposes to drill and blast approximately 600 feet down into the bedrock adjacent to the San Joaquin River, as well as relocate gravel production and transportation to the same area. Extreme noise pollution from the drilling, blasting and heavy trucking activity will cause great harm to the property values of homes in the surrounding area. This noise pollution would force me to sell my home for the sanity of my family, while at the same time causing the property value to sink dramatically. Other neighbors would be in the same predicament. Who would want to own a home across the street from a 600-foot deep mine that blasts and drills hard rock and then turns it into gravel for large trucks to freight away?

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Drilling and blasting should not be permitted by the County due to the extreme noise pollution this will cause throughout the river basin, rendering residential properties, which have been approved by the County for this area, uninhabitable and greatly devalued.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Submitter DB ID	17500
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 5:38 PM
Time to Take the Survey	15 minutes, 34 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brian McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave Friant, CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

union.brian@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The Cemex Mining Project proposes to relocate gravel production and distribution/transportation to the same area as the proposed mine, which will cause a dramatic increase in heavy trucking activity further north on Friant Road. The increased heavy trucking activity will require expensive widening c Friant Road, and the bridge just north of the current Cemex plant, and require regular upkeep of the road. What will this cost over the proposed 100-yeai term of this project? Will Cemex pay the full cost of the road widening and repairs for the next 100 years at the outset? I wouldn't trust anything less than that or Fresno County taxpayers will be stuck with the bill.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Require Cemex to pay into an impound account or irrevocable trust the cost of all projected road improvements and repairs for the remainder of the proposed plan extension. This must be a precondition to moving gravel distribution to the northern property to prevent taxpayers from having to pay these hefty road repair and improvement costs.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Submitter DB ID	17501
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 5:45 PM
Time to Take the Survey	5 minutes, 17 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining P roject. All comments received become a part of the public record.

1. What is your name?

Brian McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave Friant, CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

union.brian@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The Cemex Mining Project proposes to relocate gravel production and distribution/transportation to the same area as the proposed mine, which will cause a dramatic increase in heavy trucking activity further north on Friant Road. The increased heavy trucking activity will cause a dramatic increase in air pollution that will have a harmful impact on residents in the area.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

There can be no mitigation of the air pollution this increase in heavy trucking in the area would cause.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Submitter DB ID	17503
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 5:52 PM
Time to Take the Survey	4 minutes, 6 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brian McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave Friant, CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

union.brian@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The Cemex Mining Project proposes to relocate gravel production and distribution/transportation to the same area as the proposed mine, which will cause a dramatic increase in heavy trucking activity further north on Friant Road. The increased heavy trucking activity will cause a dramatic increase in air pollution, which will have a harmful impact on wildlife in the area.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

There can be no mitigation of the air pollution this increase in heavy trucking in the area would cause.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Submitter DB ID	17504
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 5:54 PM
Time to Take the Survey	1 minutes, 14 secs.

Page 1

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1. What is your name?

Brian McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave Friant CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

union.brian@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The Cemex Mining Project proposes to relocate gravel production and distribution/transportation to the same area as the proposed mine, which will cause a dramatic increase in heavy trucking activity further north on Friant Road. The increased heavy trucking activity will cause a dramatic increase in air pollution, which will have a harmful impact on trees and plants in the area.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

There can be no mitigation of the air pollution this increase in heavy trucking in the area would cause.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Submitter DB ID	17505
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 6:02 PM
Time to Take the Survey	7 minutes, 40 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brian McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave Friant CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

union.brian@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
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Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The Cemex Mining Project proposes to drill and blast approximately 600 feet down into the bedrock adjacent to the San Joaquin River, as well as relocat gravel production and transportation to the same area. This will cause dust, perhaps mingled with elements from the explosives, to be air born and find it way into the San Joaquin River, harming its ecology and the fish that line in the river.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

There can be no mitigation of the dust pollution this drilling and blasting, as well as increased trucking activity, would cause.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Submitter DB ID	17507
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 6:15 PM
Time to Take the Survey	12 minutes, 15 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brian McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave Friant CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

union.brian@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The Cemex Mining Project proposes to drill and blast approximately 600 feet down into the bedrock adjacent to the San Joaquin River, as well as relocat gravel production and transportation to the same area. This will cause enormous amounts of dust, perhaps mingled with elements from the explosives, tc be air born and coat the homes, pools and lawns played on by the children in the surrounding residential areas. It will make going outside unsafe for people with trouble breathing in bad air conditions, such as my son who has asthma.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

There can be no mitigation of the dust pollution this drilling and blasting, as well as increase in trucking activity, would cause.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Submitter DB ID	17509
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 6:31 PM
Time to Take the Survey	5 minutes, 30 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brian McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave Friant CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

union.brian@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The Cemex Mining Project proposes to drill and blast approximately 600 feet down into the bedrock adjacent to the San Joaquin River. There is a high risk of pollutants used in the drilling and blasting methods finding its way through damaged bedrock and aquifers to the San Joaquin River itself, where i would cause grave damage to the ecology of one of our greatest resources in the valley.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Drilling and blasting should not be permitted in such close proximity to the San Joaquin River.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Submitter DB ID	17510
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 6:40 PM
Time to Take the Survey	7 minutes, 54 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Not answered

2. Organization/Business

Not answered

3. What is your address?

Not answered

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Not answered

5. Please provide your email address.

Not answered

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
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Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The Cemex Mining Project proposes to blast approximately 600 feet down into the bedrock in a region known for its earthquakes. Blasting of this magnitude should not be practiced in an area that is already at risk for earthquakes. Fracking, a different but similar process, has been known to cause earthquake activity in regions previously not know for earthquakes, such as the midwest. Why would we want to introduce the risk of increased earthquake activity here in the Central Valley?

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Blasting of this magnitude should not be permitted in a region surrounded by fault lines.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Submitter DB ID	17511
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 7:02 PM
Time to Take the Survey	12 minutes, 50 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brian McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave Friant, CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

union.brian@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
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Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I am concerned that this project, if approved by the County, would be a tremendous missed opportunity for the County to assert river preservation and al of the related recreational activities as priorities for our community. Our representatives should not vote to squander the most beautiful natural resource we have, the San Joaquin River corridor. We do not need to approve a mining project in such a delicate and beautiful area. We can instead tell Cemex tha they can finish out the term of their current gravel excavation project and then return the land to its natural beauty as repayment to our community for the riches it has already extracted or sell the land now to the River Parkway Trust. It is time for Fresno County to seize this moment and imagine how the River Parkway can transform our region for all of its residents and wildlife.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Work with Cemex to sell the land to the San Joaquin River Parkway Trust.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 22, 2020 8:44 AM
To: union.brian@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project. We received 14 comment card submissions from your email address.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18038
IP Address	2602:304:cec2:cc40:ace2:512a:51a6:8023
Submission Recorded On	07/03/2020 2:03 PM
Time to Take the Survey	17 minutes, 58 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Brooke Nelson

2. Organization/Business

Not answered

3. What is your address?

2717 W. Lake Van Ness Circle

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

nelsonmedia@yahoo.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
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Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The San Joaquin River is already heavily degraded, dammed and industrialized, and was deemed "America's Most Endangered River" in 2014. I urge you to deny this project because of its environmental impact on the river and the air and noise pollution impact from heavy vehicle traffic on Friant Road and the Fresno/Clovis area. It should be common sense that a 600-foot-deep open pit mine next to the river is a bad idea. Fresno County's efforts should be directed towards rehabilitating the river and improving public access as Fresno ranks near the bottom in public park rankings and near the top in childhood asthma. The San Joaquin River provides habitat for native plants and animals and potential for nature-focused recreation. Friant Road is already congested and the site of frequent accidents. Polluters such as Cemex target communities like Fresno because their residents are heavily minority and politically disengaged. Please take the environmental racism factor into account when deciding to deny this project.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Deny the proposal. No mitigation would be acceptable. Furthermore, Cemex is seeking a 100-year contract to plunder our river. Please deny this nonsensical project and help Fresno remedy its reputation as a laughingstock when it comes to rubber-stamping polluting, extractive projects. Thank you

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 10:49 AM
To: nelsonmedia@yahoo.com
Subject: EIR 7763 -- Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18004
IP Address	2600:1700:7710:3ae0:6975:f552:ee6a:840c
Submission Recorded On	07/02/2020 8:13 PM
Time to Take the Survey	17 minutes, 31 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Bob Papazian

2. Organization/Business

3rd generation Fresno citizen

3. What is your address?

565 E Everglade Ave, Fresno 93720

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

bobpapazian@att.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I sent the following comments to my County Supervisor, Steve Brandau earlier this week. Thanks to the San Joaquin River Parkway folks for sharing this site for comments.

Hello Mr Brandau,

I'm a 3rd generation Fresnan. I'm also a long time board member of Fly Fishers for Conservation. And yes, I'm still a little miffed that vehicle access to River West via the road through the neighborhood isn't open, however, I'm also a lifetime republican & it didn't keep me from voting for you without reservation. I'm hoping you will help put the brakes on this Cemex project. I'm still scratching my head on how a 100 year deep pit mine will benefit Fresnan's, not to mention the vision of a continuous greenbelt along the San Joaquin River from Friant to 99. And Foreign owned too? Steve, I don't believe everything I read or hear in our local news. Quite the opposite. I just don't see why the hurry or where the Cemex project fits. Please let the public voice be completely heard. We shouldn't have to feel any time pressure to approve something that is going to be here for 100 years. Thank you for listening, Bob Papazian

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

No mitigation can make up for a 100 year project of this type. I'm going to be very disappointed if the County doesn't shut this project down immediately I'm also curious what, if any, elected officials are in favor of this project. I will not be voting for anyone in my district that is in favor of it, under any circumstances....mitigation or not.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 10:38 AM
To: bobpapazian@att.net
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Monfette, Christina

From: Bobbi Sierra <sierrabj@gmail.com>
Sent: Friday, July 10, 2020 9:27 AM
To: Monfette, Christina
Subject: Eir 7763

Hello,

I am not in favor of Cemex blasting a hole in the San Joaquin River nor the traffic it will create. I vote "no" or whatever I need to do to oppose it.
Thank you,
Bobbi Sierra

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 13, 2020 9:31 AM
To: 'Bobbi Sierra'
Subject: RE: Eir 7763

Good morning,

Thank you for providing comments on the subject application. This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments were not received during the Scoping Period, which ended at 5:00 on July 6, 2020; however, they will be made a part of the final project record

If you have any questions, please don't hesitate to reach out to me at the contact information below.

Thank you again,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Please note that our offices are currently closed to the public. If you would like to drop off files or make an in-person submission, you must call ahead and make arrangements with staff. Per the Governor's Order, masks will be required. We apologize for any inconvenience this may cause and thank you for your help to reduce the spread of Covid-19.

From: Bobbi Sierra <sierrabj@gmail.com>
Sent: Friday, July 10, 2020 9:27 AM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: Eir 7763

Hello,

I am not in favor of Cemex blasting a hole in the San Joaquin River nor the traffic it will create. I vote "no" or whatever I need to do to oppose it.
Thank you,
Bobbi Sierra

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 3:46 PM
To: 'Beverly Teel'
Subject: RE: Cemex (EIR 7763)

Good afternoon,

Thank you for providing comments on the subject application. Please include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments will be considered in the development of the scope of impacts to be considered by the Draft EIR.

If you have any questions, please don't hesitate to reach out to me at the contact information below.

Thank you again,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. Suite A, Fresno, CA 93721 Main Office: (559) 600-4230 Direct: (559) 600-4245

-----Original Message-----
From: Beverly Teel <bevteel9@yahoo.com>
Sent: Sunday, July 5, 2020 7:55 PM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: Cemex

Please do not allow Cemex to occupy the San Joaquin River for another 100 years. Give it back to the people and wild life.
Beverly Teel
18989 Via Bellagio
Friant, CA
Sent from my iPhone

Submitter DB ID	18087
IP Address	73.192.179.53
Submission Recorded On	07/05/2020 2:38 PM
Time to Take the Survey	25 minutes, 54 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Bach-Tuyet Brown

2. Organization/Business

private citizen of Fresno

3. What is your address?

9074 N Brookview Ave.

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

Not answered

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I want CEMEX to stop the excavation of hard rock to 600 feet deep at the Quarry site located adjacent to Ledger Island and Lost Lake Park. Priority should be given the Fresno country to make it possible for me, my family and other concerned Fresnians to enjoy the area as a public park.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

None. It should be parkland.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Submitter DB ID	18144
IP Address	2601:205:100:93c0:2d8d:678a:720b:5d04
Submission Recorded On	07/06/2020 12:52 PM
Time to Take the Survey	33 minutes, 51 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Carol de Vries

2. Organization/Business

Not answered

3. What is your address?

P. O. Box 16177, Fresno

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

cdvsingin@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The San Joaquin River is a wonderful natural resource for families and boaters to recreate. It is also the habitat for much wildlife. How will this project impact hydrology and water quality with the deeper mining and blasting? What impact will all that noise have on the wildlife and people trying to recreate. What impact will it have on the slope stability and the soil? Why destroy this wonderful resource we have in our backyard for people to enjoy with commercial project? Is money more important than people and preserving our natural resources for the future?

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Move the project some other place.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Monfette, Christina

From: Monfette, Christina
Sent: Tuesday, July 7, 2020 8:24 AM
To: cdvsingin@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Monfette, Christina

From: Carol Edde <cedde123@aol.com>
Sent: Tuesday, June 16, 2020 4:45 PM
To: Monfette, Christina
Subject: Proposed CEMEX/Rockfield Quarry Modification Project

Dear Chrissy,

We are homeowners in the River View Ranch Development on the east side of Friant Road between the Plant Site and the Quarry Site.

Needless to say, we are very concerned about the CEMEX proposed project. And please let us be clear, this is not a continuation of the existing project, it is a totally new 100 year project that will in effect leave us with a huge 600 foot hole!

The mining operations between the two sites have been continuous for the past106 years (1913-2019). Enough is enough!

Our concerns are many and warranted.

* The Friant Dam is getting quite old and is already in need of repairs. Mining operations of this extent could undermine the Friant Dam.

* Fracturing of the earth to a depth of 600 feet is absurd! There is no way to predict the damage this could cause to the earth, to our water wells and to the stability of our property.

* We have a specific concern for the probable air pollution, especially the particulate matters and the prevailing north westerly winds towards our residence, on our health and the health of our grandchildren, several who suffer from asthma.

* We have specific concerns about the odors emitted, especially the asphalt plant. An asphalt plant will have, not only offensive odors but will have particulate matters that will easily be carried to our community, by the prevailing winds. Not to mention annoying bright lights.

* The plant and quarry sites will run over 12 hours per day, with constant trucks and trailers running up and down Friant Road. This is a notoriously busy road as it is, we cannot imagine that much more traffic. Its also a very fast and dangerous roadway. Please note we have two Indian Casinos that are quite close and generate lots of traffic.

We are appalled that this CEMEX Project is even being proposed. It is time to put an end to this type of project in our neighborhood.

Respectfully,

Larry and Carol Edde
15226 Bluff View Ave.

Monfette, Christina

From: Monfette, Christina
Sent: Wednesday, June 17, 2020 8:24 AM
To: Carol Edde
Subject: RE: Proposed CEMEX/Rockfield Quarry Modification Project

Good morning,

Thank you for providing comments on the subject application. Please include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments will be considered in the development of the scope of impacts to be considered by the Draft EIR.

If you have any questions or if you would like to submit additional comments, please don't hesitate to reach out to me at the contact information below.

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Please note that our offices are currently closed to the public. If you would like to drop off files or make an in-person submission, you must call ahead and make arrangements with staff. We apologize for any inconvenience this may cause and thank you for your help to reduce the spread of Covid-19.

From: Carol Edde <cedde123@aol.com>
Sent: Tuesday, June 16, 2020 4:45 PM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: Proposed CEMEX/Rockfield Quarry Modification Project

Dear Chrissy,

We are homeowners in the River View Ranch Development on the east side of Friant Road between the Plant Site and the Quarry Site.

Needless to say, we are very concerned about the CEMEX proposed project. And please let us be clear, this is not a continuation of the existing project, it is a totally new 100 year project that will in effect leave us with a huge 600 foot hole!

The mining operations between the two sites have been continuous for the past106 years (1913-2019). Enough is enough!

Our concerns are many and warranted.

P.O. Box 436
Madera, Ca. 93639
July 4, 2020

Fresno County Department of Public Works & Planning
Development Services & Capital Projects Division
2220 Tulare Street, 6th Floor
Fresno, Ca. 93724

Attn: Christina Monfette

Cemex Rockfield Quarry Modification Project Comments

I am strongly against the proposed Cemex Rockfield Quarry Modification Project. This 100 year pit is not in the best interest of the health & safety of Fresno County residents and their regional neighbors. It will cause serious and significant, direct and indirect, immediate and long-term adverse impacts to our environment, its denizens, and our quality of life.

A 600 ft. deep mine (footprint unknown, but realistically 500 acres) located 200 ft. from the San Joaquin River and within its floodplain is a sure recipe for an environmental disaster. This mine would create a large cone of depression whereby surface and subterranean waters would constantly flow into, lowering the surrounding water table, and possibly changing both the surface and subterranean course of the river. This would have a significant and negative impact on the environment, neighboring and nearby properties, as well as downstream users. The thousands of acre feet of water collected in this immense pit will be contaminated by the mining process, and will require continual removal and storage in detention ponds. Stormwater historically finding its way into the San Joaquin will be intercepted affecting the riparian habitat and vernal pools. If this project were approved, how would the amount of thousands of acre feet of water being used and wasted be calculated and paid for? How will it be contracted from a river already over allocated? How will pollutants in the detention ponds be prevented from polluting local groundwater, the river, and harming wildlife? How does this comply with the Groundwater Sustainability Act? How will a 600 ft. deep pit ever be realistically reclaimed?

Loud blasting and constant noise from the mining operation and continuous truck traffic would significantly and adversely impact the area and its environment. It will ruin the outdoor experience for those visiting Lost Lake Park, and those who enjoy fishing, swimming, hiking, kayaking, canoeing, bird-watching, etc. along the river and its riparian environment. It will be an annoyance for residents. And, because the river is framed by hillsides, the noise and vibrations will be amplified by the canyon effect. This noise pollution will cause significant and adverse harm to wildlife, birds, and fish including some listed as endangered and threatened species.

Light pollution from the mining operation will significantly and adversely affect both nocturnal and diurnal species, and destroy the natural ambiance for both visitors and neighbors. It will ruin the visual panorama by 360 degrees.

Dust and PM10 & PM2.5 particulates from both mining and truck traffic will add significant and adverse tonnages of these pollutants into an air district and region already beset with serious non-attainment issues. Particulate pollution is a pre-cursor for ozone formation creating unhealthful air for those without respiratory problems, and severe consequences for those with existing respiratory conditions such as asthma, heart disease, emphysema, and stroke history. Dust and particulates are also injurious to wildlife and plant life, agricultural operations, and will contribute to the amount of total dissolved solids in the river causing water quality issues.

Both truck traffic and mining machinery will generate significant and adverse tonnages of greenhouse gases, including CO, CO2, NOx, SOx, and ozone-forming volatile organic compounds (VOCs) into our air further elevating criteria air pollution emissions. Aside from health and environmental consequences, and the economic impacts thereof, can the San Joaquin Valley Air Pollution Control District really afford multi-million dollar fines for air quality violations of the Ca. and National Ambient Air Quality Standards?

An increase in heavily-loaded trucks and bobtails on our local roadways will imperil motorists and bike riders. It will destroy our tax-payer supported road infrastructure, and increase our county road maintenance costs. The under-construction Austin Quarry on the corner of Highway 145 & SR41 in Madera County is only 9 miles away, it will be adding 846 truck trips daily. The pending closure of the Vulcan Plant on Friant Road in 2017 provided a convenient excuse for the Madera County Board of Supervisors to approve by 3/2 vote the Austin Quarry Project, despite overwhelming regional and community-wide opposition and a litany of errors, false and misleading information, and voodoo math in their Draft & Final EIRs, which Benchmark Resources assuaged and tinted for approval. Fresno County assured an attendee at the 6/24/20 Zoom meeting that Benchmark Resources was going to be employed to certify the EIR's accuracy. This is not reassuring.

Cemex is an international corporation headquartered in Mexico, greatly easing its U.S. tax liability. In June 2020 Cemex's business profile had a BB Rating due to a large need for debt repayment; payment is due in 2022. Its cash flow was weak prior to the Covid-19 Pandemic due to its reliance on "hedging" (gambling) to offset currency risk in cost and revenue.

Demand for cement and rock has fallen in Mexico, Central America, and the United States. Market analysts predict a large contraction in commercial and residential construction activity, and a considerable reduction in state and federal highway construction due to overwhelmed budgets and substantial decrease of gasoline tax revenue. It is amazing, given our current dilemma which will take years to find economic relief and recovery, that Cemex would propose such a huge undertaking when our region and our world is experiencing the accelerating throes of climate change coupled with the collateral realities of Covid-19: high unemployment, business closures, bankruptcies, school closures, historic downturns in the stock market; evictions; food insecurity, definite declines in new housing permits (Fresno County down 51%), and an uncertain future. Is Cemex using this project to gain capital investment in order to pay off or leverage existing debt?

Cemex claims part of its mission is "to build value for its stakeholders by becoming the world's most efficient and profitable cement company." Apparently in chasing that dream, it has failed many times and in many places to demonstrate good stewardship and responsibility for maintaining environmental quality. The USEPA and a number of air pollution control districts have filed numerous complaints against Cemex. One such complaint involved a seven year release of cancer-causing hexavalent chromium gas adjacent to the Pacific Elementary School in Monterey, Ca. Another violation in 2016 resulted in the issuance of a Cease & Desist Order filed by the Ca. Coastal Commission to halt Cemex's mining operation that was destroying beach and sensitive habitat in Marina, Ca.

This project's timing is especially suspect given citizens are struggling to survive the Covid-19 plague, and public meetings cannot be physically held. Instead public participation in this process is being relegated to the internet and limited by the participant's type of device, data plan, and ease of connectivity or lack of internet connection. Participants are also being isolated from important human interaction in a public setting, handouts, powerpoint and other visual presentations. And many citizens' only internet access source is their phone. When I tried on June 24th to access the Zoom meeting via the Fresno County page, I was unable to get past the Covid-19 page, even though the Cemex Rockfield Expansion was listed. After 15 unsuccessful minutes, I googled it and was able to locate the meeting after opening a couple of related sites. Other interested people were unable to do so. Any future meetings, presentations, hearings, etc. using the internet need to comply with the Brown Act. As citizens cannot visit their public libraries, and cannot download EIRs, or view them in the library, they should be mailed free-of-charge copies of the EIR in either book or CD form (whichever is requested) so the process is open and transparent. The meetings should also be archived and available on youtube on the following day. Participants' internet addresses and/or phone numbers should be logged by Fresno County's Planning Dep't. to keep them informed of upcoming meetings, hearings, resource availability, etc. There should also be county-sponsored internet tutorials to assist inexperienced or non-tech savvy internet users on how to access the aforementioned. Again, the timing is suspect.

This project is an affront to all individuals, organizations, government agencies, and our representatives who spent years invested in realizing the San Joaquin River Restoration Settlement Act. It is also an egregious and self-centered act of corporate enrichment at the expense of those who have worked diligently for years to create an incredible 22 mile parkway along the San Joaquin for all to enjoy now and in the future.

There are already enough quarries in our area to more than satisfy future aggregate demand in the Fresno P-C Region. Cemex should donate or entrust this land to the San Joaquin River Parkway and Conservation Trust and/or Fresno County for the purpose of completing the San Joaquin River Parkway.
They would benefit in many ways!

Catherine Fowler

Catherine Fowler
cfowlerstarrchoice@yahoo.com
(559) 674-9990

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 2:56 PM
To: cfowlerstarrchoice@yahoo.com
Subject: RE: Comments on Cemex Rockfield Quarry Modification (EIR 7763)

Good afternoon,

Thank you for providing these comments on the subject application. I also appreciate your call this morning regarding these comments - Now that I have had a chance to see how they were submitted, I would like to request that you send in a hard copy of the comments so that I can scan a clean version into the project record. While the pictures are legible, some areas are a little blurry and a scanned version would vastly improve their quality.

However, since these comments were received prior to today's deadline they are submitted during the public comment period and will be considered in preparation of the scope. Sending a hard copy of these comments would not affect their status as 'submitted within the deadline'.

Please give me a call if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

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From: Catherine Fowler <cfowlerstarrchoice@yahoo.com>
Sent: Sunday, July 5, 2020 3:26 PM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: Comments on Cemex Rockfield Quarry Modification

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Attached are my comments on the Cemex project.

P.O. Box 436
Madera, Ca. 93639
July 4, 2020

Fresno County Department of Public Works & Planning
Development Services & Capital Projects Division
2220 Tulare Street, 6th Floor
Fresno, Ca. 93724

RECEIVED
JUL 10 2020
FRESNO COUNTY
DEPT. OF
PUBLIC WORKS & PLANNING

Attn: Christina Monfette

Cemex Rockfield Quarry Modification Project Comments

I am strongly against the proposed Cemex Rockfield Quarry Modification Project. This 100 year pit is not in the best interest of the health & safety of Fresno County residents and their regional neighbors. It will cause serious and significant, direct and indirect, immediate and long-term adverse impacts to our environment, its denizens, and our quality of life.

A 600 ft. deep mine (footprint unknown, but realistically 500 acres) located 200 ft. from the San Joaquin River and within its floodplain is a sure recipe for an environmental disaster. This mine would create a large cone of depression whereby surface and subterranean waters would constantly flow into, lowering the surrounding water table, and possibly changing both the surface and subterranean course of the river. This would have a significant and negative impact on the environment, neighboring and nearby properties, as well as downstream users. The thousands of acre feet of water collected in this immense pit will be contaminated by the mining process, and will require continual removal and storage in detention ponds. Stormwater historically finding its way into the San Joaquin will be intercepted affecting the riparian habitat and vernal pools. If this project were approved, how would the amount of thousands of acre feet of water being used and wasted be calculated and paid for? How will it be contracted from a river already over allocated? How will pollutants in the detention ponds be prevented from polluting local groundwater, the river, and harming wildlife? How does this comply with the Groundwater Sustainability Act? How will a 600 ft. deep pit ever be realistically reclaimed?

Loud blasting and constant noise from the mining operation and continuous truck traffic would significantly and adversely impact the area and its environment. It will ruin the outdoor experience for those visiting Lost Lake Park, and those who enjoy fishing, swimming, hiking, kayaking, canoeing, bird-watching, etc. along the river and its riparian environment. It will be an annoyance for residents. And, because the river is framed by hillsides, the noise and vibrations will be amplified by the canyon effect. This noise pollution will cause significant and adverse harm to wildlife, birds, and fish including some listed as endangered and threatened species.

Light pollution from the mining operation will significantly and adversely affect both nocturnal and diurnal species, and destroy the natural ambiance for both visitors and neighbors. It will ruin the visual panorama by 360 degrees.

Dust and PM10 & PM2.5 particulates from both mining and truck traffic will add significant and adverse tonnages of these pollutants into an air district and region already beset with serious non-attainment issues. Particulate pollution is a pre-cursor for ozone formation creating unhealthful air for those without respiratory problems, and severe consequences for those with existing respiratory conditions such as asthma, heart disease, emphysema, and stroke history. Dust and particulates are also injurious to wildlife and plant life, agricultural operations, and will contribute to the amount of total dissolved solids in the river causing water quality issues.

Both truck traffic and mining machinery will generate significant and adverse tonnages of greenhouse gases, including CO, CO2, NOx, SOx, and ozone-forming volatile organic compounds (VOCs) into our air further elevating criteria air pollution emissions. Aside from health and environmental consequences, and the economic impacts thereof, can the San Joaquin Valley Air Pollution Control District really afford multi-million dollar fines for air quality violations of the Ca. and National Ambient Air Quality Standards?

An increase in heavily-loaded trucks and bobtails on our local roadways will imperil motorists and bike riders. It will destroy our tax-payer supported road infrastructure, and increase our county road maintenance costs. The under-construction Austin Quarry on the corner of Highway 145 & SR41 in Madera County is only 9 miles away; it will be adding 846 truck trips daily. The pending closure of the Vulcan Plant on Friant Road in 2017 provided a convenient excuse for the Madera County Board of Supervisors to approve by 3/2 vote the Austin Quarry Project, despite overwhelming regional and community-wide opposition and a litany of errors, false and misleading information, and voodoo math in their Draft & Final EIRs, which Benchmark Resources assuaged and tinted for approval. Fresno County assured an attendee at the 6/24/20 Zoom meeting that Benchmark Resources was going to be employed to certify the EIR's accuracy. This is not reassuring.

Cemex is an international corporation headquartered in Mexico, greatly easing its U.S. tax liability. In June 2020 Cemex's business profile had a BB Rating due to a large need for debt repayment; payment is due in 2022. Its cash flow was weak prior to the Covid-19 Pandemic due to its reliance on "hedging" (gambling) to offset currency risk in cost and revenue.

Demand for cement and rock has fallen in Mexico, Central America, and the United States. Market analysts predict a large contraction in commercial and residential construction activity, and a considerable reduction in state and federal highway construction due to overwhelmed budgets and substantial decrease of gasoline tax revenue. It is amazing, given our current dilemma which will take years to find economic relief and recovery, that Cemex would propose such a huge undertaking when our region and our world is experiencing the accelerating throes of climate change coupled with the collateral realities of Covid-19: high unemployment; business closures; bankruptcies; school closures; historic downturns in the stock market; evictions; food insecurity; definite declines in new housing permits (Fresno County down 51%); and an uncertain future. Is Cemex using this project to gain capital investment in order to pay off or leverage existing debt?

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JUL 21 2020
FRESNO COUNTY
DEPT. OF
PUBLIC WORKS & PLANNING

Cemex claims part of its mission is "to build value for its stakeholders by becoming the world's most efficient and profitable cement company." Apparently in chasing that dream, it has failed many times and in many places to demonstrate good stewardship and responsibility for maintaining environmental quality. The USEPA and a number of air pollution control districts have filed numerous complaints against Cemex. One such complaint involved a seven year release of cancer-causing hexavalent chromium gas adjacent to the Pacific Elementary School in Monterey, Ca. Another violation in 2016 resulted in the issuance of a Cease & Desist Order filed by the Ca. Coastal Commission to halt Cemex's mining operation that was destroying beach and sensitive habitat in Marina, Ca.

This project's timing is especially suspect given citizens are struggling to survive the Covid-19 plague, and public meetings cannot be physically held. Instead public participation in this process is being relegated to the internet and limited by the participant's type of device, data plan, and ease of connectivity or lack of internet connection. Participants are also being isolated from important human interaction in a public setting, handouts, powerpoint and other visual presentations. And many citizens' only internet access source is their phone. When I tried on June 24th to access the Zoom meeting via the Fresno County page, I was unable to get past the Covid-19 page, even though the Cemex Rockfield Expansion was listed. After 15 unsuccessful minutes, I googled it and was able to locate the meeting after opening a couple of related sites. Other interested people were unable to do so. Any future meetings, presentations, hearings, etc. using the internet need to comply with the Brown Act. As citizens cannot visit their public libraries, and cannot download EIRs, or view them in the library, they should be mailed free-of-charge copies of the EIR in either book or CD form (whichever is requested) so the process is open and transparent. The meetings should also be archived and available on youtube on the following day. Participants' internet addresses and/or phone numbers should be logged by Fresno County's Planning Dep't. to keep them informed of upcoming meetings, hearings, resource availability, etc. There should also be county-sponsored internet tutorials to assist inexperienced or non-tech savvy internet users on how to access the aforementioned. Again, the timing is suspect.

This project is an affront to all individuals, organizations, government agencies, and our representatives who spent years invested in realizing the San Joaquin River Restoration Settlement Act. It is also an egregious and self-centered act of corporate enrichment at the expense of those who have worked diligently for years to create an incredible 22 mile parkway along the San Joaquin for all to enjoy now and in the future.

There are already enough quarries in our area to more than satisfy future aggregate demand in the Fresno P-C Region. Cemex should donate or entrust this land to the San Joaquin River Parkway and Conservation Trust and/or Fresno County for the purpose of completing the San Joaquin River Parkway.
They would benefit in many ways!

Catherine Fowler

Catherine Fowler
cfowlerstarrchoice@yahoo.com

From: Monfette, Christina
To: "cfowlerstarrchoice@yahoo.com"
Subject: RE: Comments on Cemex Rockfield Quarry Modification (EIR 7763)
Date: Wednesday, July 15, 2020 2:41:00 PM
Attachments: image001.png
CFowler_7.4.2020.pdf

Good morning,

I wanted to confirm to you that we received the hard copy submission of your comments earlier this week. As we discussed because a digital copy was made within the scoping period, the comments are considered to be timely submitted. A copy of the comments are attached for your convenience.

Let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

From: Monfette, Christina
Sent: Monday, July 6, 2020 2:56 PM
To: cfowlerstarrchoice@yahoo.com
Subject: RE: Comments on Cemex Rockfield Quarry Modification (EIR 7763)

Good afternoon,

Thank you for providing these comments on the subject application. I also appreciate your call this morning regarding these comments - Now that I have had a chance to see how they were submitted, I would like to request that you send in a hard copy of the comments so that I can scan a clean version into the project record. While the pictures are legible, some areas are a little blurry and a scanned version would vastly improve their quality.

However, since these comments were received prior to today's deadline they are submitted during the public comment period and will be considered in preparation of the scope. Sending a hard copy of these comments would not affect their status as 'submitted within the deadline'.

Please give me a call if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Please note that our offices are currently closed to the public. If you would like to drop off files or make an in-person submission, you must call ahead and make arrangements with staff. Per the Governor's Order, masks will be required. We apologize for any inconvenience this may cause and thank you for your help to reduce the spread of Covid-19.

From: Catherine Fowler <cfowlerstarrchoice@yahoo.com>
Sent: Sunday, July 5, 2020 3:26 PM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: Comments on Cemex Rockfield Quarry Modification

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Attached are my comments on the Cemex project.

Submitter DB ID	17794
IP Address	2601:206:4280:2e20:45aa:4247:39a6:6ec
Submission Recorded On	06/27/2020 11:58 AM
Time to Take the Survey	14 minutes, 47 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

M Cristina Gonzales

2. Organization/Business

Native American traditional practitioner

3. What is your address?

4027 w delta ave, Visalia ca 93291

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

Californianativegirl@yahoo.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Although I do not reside in Fresno County, I depend on the San Joaquin River for traditional Native American plant gathering. I have seen the destructio Cemex and Volcan have done, it's changed our water ways, it's inhabitants, and the entire ecosystem in that area. Enough destruction! What's the point o re introducing salmon and doing all this other work to the river if it's going to continuously be destroyed!? Please do not renew or grant any further destruction to the river. Let it heal.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Mitigation? I understand some of the previously destroyed area is supposed to go back to nature soon already. What I don't understand is why parts of th river keep getting ruined while another part can heal. Leave the river alone already. There's already a dam. That's damage enough. If destruction continues along the river it will be hundreds of years before it will be left alone. Your asking how to mitigate damage to a river that has not had a chance t be a river since the gold rush.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfettc

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 29, 2020 11:20 AM
To: Californianativegirl@yahoo.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	16387
IP Address	2601:200:8100:2490:899d:4720:5cc2:f37
Submission Recorded On	06/16/2020 9:27 PM
Time to Take the Survey	5 minutes, 59 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Chris Julian

2. Organization/Business

River View Ranch HOA

3. What is your address?

15135 Bluff View Ave Friant CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

dr.chris.julian@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Thanks for hearing my concerns about the Cemex plant being moved and expanded to affect me and my neighbors. This link is for more information about the location being moved from it's current location to across from our development:https://www.co.fresno.ca.us/departments/public-works-and-planning/divisions-of-public-works-and-planning/development-services-and-capital-projects/planning-and-land-use/environmental-impact-reports/cemex-rockfield-expansion . My wife and I moved to our current house twenty years ago to enjoy our beautiful view to the west and the peace and quiet of country life. I was reassured that the area of the Friant corridor was reserved from any development along the river. There has been great concern about the environmental issues along Friant road including the tiger salamander and the kit fox that limited Cal Trans expansion of the vital Friant road expansion in the past. The scope of the Cemex plan is huge and will likely have significant impact on the river and its wildlife, me and my family, our house value, and our neighborhood. The project cannot be allowed to proceed with a 600 foot hole planned, around the clock noise and pollution, and other potential consequences. The Cemex expansion seems completely inconsistent with the plan outlined by Fresno County over history. I appreciate any help in preventing this project from happening. What is the noise level projected at my house in decibels? What is the light pollution level at my house projected at night? What is the effect on my view which is only to the west and is beautiful of the back side of Sumner Hill at sunset?
Thank you,
Christopher Julian

7.

Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

The project cannot proceed in the scope and size of it's current plan. It will completely disrupt the fragile river ecosystem and have direct severe impact o my neighborhood with noise, light, and pollution.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Wednesday, June 17, 2020 9:28 AM
To: dr.chris.julian@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

You indicated that you did not want to be added to our list to receive digital notices relating to this application; however because your property is within one mile of the project, you will continue to receive notices in the mail.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
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Submitter DB ID	17512
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 7:11 PM
Time to Take the Survey	2 minutes, 37 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Catherine Curry McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave. Friant, CA

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

catherine@ccurry.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The level of disturbing loud noise is a major concern. Due to a break in and nearly being killed, I am extremely sensitive to sudden loud noise. My door was kicked in and the perpetrator nearly shot my head off. I moved to the foothills to find peace and quiet so I could further heal from the PTSD the breal in caused. The extreme noise pollution, in particular the sudden blasts, this project will produce will certainly be detrimental to my daily life. I work from home, so the hours of this proposed operation will coincide with my workday.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Perhaps you could just blow out my eardrums so I can't hear anything.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Submitter DB ID	17513
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 7:13 PM
Time to Take the Survey	1 minutes, 27 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Catherine Curry McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Not answered

5. Please provide your email address.

catherine@ccurry.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Spend some time observing the wildlife in our foothills. If you think this project won't impact them, try shooting a gun into the air near their homes. Thei behavior is a natural survivor response. I wouldn't expect much different from the people in proximity to this project. It's irrational to think any good can come from this location. I am certain there are plenty of rocks to blow up somewhere else.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Replicate surrounding neighborhood, rebuild homes with our Owls, our Red Tail Hawks, King Snakes, Lizards, Road Runners, Black Phoebe's, Coyotes and all, and place us all 50 miles away from this insane project. Don't forget to build the River, our wildlife needs it!

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Submitter DB ID	17515
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 7:14 PM
Time to Take the Survey	1 minutes, 14 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Catherine Curry McNally

2. Organization/Business

C Curry Design

3. What is your address?

15310 BLUFF VIEW AVE

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Not answered

5. Please provide your email address.

catherine@ccurry.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The project will negatively impact all the progress I have made as an independent businesswoman and concerns me greatly in terms of caring for my son and continuing my business. Ask the Fresno County EDC, City of Fresno, City of Kingsburg, Fresno State, to name a few..., if they are willing to pay much higher rates for design work. If this project is approved, I will not be able to move due to the property values being driven down, and in order to continue business I would have to be willing to lease office space. This project will likely put me out of business for good.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

May as well implement eminent domain, buy us out of our homes for their current worth, because the conditions this project would expect us to live under, are unlivable. I would lose my trust in this County and would choose to quickly never support this county again in my work, in my spending, in my child's education.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Submitter DB ID	17516
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 7:16 PM
Time to Take the Survey	0 minutes, 59 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Catherine Curry McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Not answered

5. Please provide your email address.

catherine@ccurry.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Our nurses, doctors, firefighters, front line workers, who work late nights, will sadly be coming home to turbulent noises impacting the quality of their sleep. I would assume nobody would want a tired surgeon to perform surgery on a loved one. A stretch?; no, I really don't think so.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Mitigate it by finding those you've displaced, a peaceful home with all the appeals that drew them here in the first place. Peace and quiet.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Submitter DB ID	17517
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 7:17 PM
Time to Take the Survey	0 minutes, 47 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Catherine Curry McNally

2. Organization/Business

Not answered

3. What is your address?

15310 Bluff View Ave

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Not answered

5. Please provide your email address.

catherine@ccurry.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The San Joaquin River is such a treasure, who is Cemex to destroy this? We cannot run the risk of destroying the one natural beauty that runs through ou county. We've seen proposals for parks to be built around the river. These very projects have been touted by the County Supervisors as a sincere objective for our city. And Now, they're equally being manipulated to allow discourse of explosions in dangerous proximity to our one natural gems.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Sell the land to the San Joaquin River Parkway trust. It belongs to those who will protect it, not to those who deplete it and destroy it.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Submitter DB ID	17518
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 7:18 PM
Time to Take the Survey	0 minutes, 39 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Catherine Curry McNally

2. Organization/Business

Not answered

3. What is your address?

15310 BLUFF VIEW AVE

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Not answered

5. Please provide your email address.

catherine@ccurry.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Our well, which is across the street, already has problems with production and pressure. Loud explosions in proximity, will not be a benefit our County managed well. The Hazardous materials used, and hazardous solvents produced from this project, will certainly impact the quality of the water and air.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

You could mitigate the impacts by utilizing land somewhere else that doesn't displace thousands of people and animals. Pretty simple solution. OR Build bubble around every home nearby. Fuel our bubbles with oxygen and rain flow. (This suggestion is only half as ridiculous as blowing up the San Joaquin River.)

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Submitter DB ID	17519
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 7:20 PM
Time to Take the Survey	1 minutes, 29 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Catherine Curry McNally

2. Organization/Business

Not answered

3. What is your address?

15310 BLUFF VIEW AVE

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Not answered

5. Please provide your email address.

catherine@ccurry.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I find it absolutely disheartening that Fresno has encouraged so much growth to go North, while abandoning the heart of our city. Meanwhile, now considering a project to make the foothills uninhabitable. Can the County of Fresno implement plans that will help us thrive?

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Please exercise caution. The term "if you build it, they will come" doesn't apply here.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Submitter DB ID	17520
IP Address	73.235.43.5
Submission Recorded On	06/20/2020 7:22 PM
Time to Take the Survey	1 minutes, 53 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Catherine Curry McNally

2. Organization/Business

Not answered

3. What is your address?

15310 BLUFF VIEW AVE

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Not answered

5. Please provide your email address.

catherine@ccurry.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I worry for the children who live nearby, and the impact this will make on their outdoor adventures. Even more dusty air and toxic pollutants, surrounding an already Asthmatic generation.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Fresno County has such an opportunity here. Reclaiming this property and nurturing it back to health, give us all a gift of your respect, and live up to the honorable role you were elected to perform.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 22, 2020 8:45 AM
To: catherine@ccurry.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project. We received 8 comments from your email address.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18095
IP Address	73.192.140.107
Submission Recorded On	07/05/2020 6:01 PM
Time to Take the Survey	8 minutes, 7 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Carolyn Murphy

2. Organization/Business

Homeowner

3. What is your address?

2658 E. Alluvial, #115, Fresno

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

billcarolynmrph24@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I can't believe Fresno County is even considering this project. The San Joaquin River is a treasure for all residents to enjoy. It is a peaceful place to hike and canoe. It has abundant wildlife. It mitigates air pollution. Salmon are returning. Industry has been allowed to pock mark this river bed for too long. Truck traffic has increased air pollution for too long.
Wildlife has been threatened for too long.

Please deny this application for the good of all the residents of Fresno County

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 12:02 PM
To: 'billcarolynmrph24@gmail.com'
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| **Planner**
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	17995
IP Address	2601:204:300:6160:5cd5:3130:d53d:c301
Submission Recorded On	07/02/2020 5:41 PM
Time to Take the Survey	1 minutes, 56 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Charles Olson

2. Organization/Business

None

3. What is your address?

2128 E Pinehurst

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

cwolson@sbcglobal.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I think this project would decimate the environment in the surrounding area.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 10:08 AM
To: cwolson@sbcglobal.net
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

From:	Carollyn Sakauye
To:	Monfette, Christina
Subject:	Rockfield Quarry Modification Project - EIR 7763
Date:	Sunday, June 14, 2020 11:18:07 PM

Dear Ms. Christina Monfette,

Thank you for your Environmental Impact Report EIR 7763. There were factors which I had not considered. Below are my thoughts:

My husband and I have residential property just to the west and within sight of the Quarry Site. The proposed quarry Modification Project could impact us in the following ways:

- <!--[endif]-->Drinking water quality. We receive our drinking water from the San Joaquin River, downstream of the Quarry site. For several years, we have received notices from the Madera County Public Works Department stating that our drinking water system violated drinking water standards. The byproducts in the water "may lead to an increased risk of getting cancer." Blasting and deeper mining may exacerbate the water contamination which even now does not meet present drinking water standards.

<!--[if !supportLists]-->• <!--[endif]-->Noise. We purchased the property to be close to the quiet of nature and away from traffic. We and the wildlife will be impacted by the blasts.

- <!--[endif]-->Air Quality. The air quality is already some of the worst in California. We need to improve it rather than add to it. Valley Children's Hospital is downwind of the Quarry sites. The children with developing lungs do not need to be further challenged.

- <!--[endif]-->Geology and Soils. Blasting and mining may make the surrounding slopes unstable. There are some very expensive houses on the nearby slopes. Will homeowner's insurance cover damage from blasting and man-made landslides?

- <!--[endif]-->Plant and Animal Species. The habitat of the wildlife will definitely be impacted by the blasting, more trucks and equipment.

I would ask that their proposal be rejected and that they submit another proposal that mitigates the many negative impacts to the environment.

Respectfully,

Carolyn Sakauye, M.D.
eyedanc@pacbell.net
776 E. Kelso Ave.
Fresno, CA 93720

From: Monfette, Christina
To: Carollyn Sakauye
Subject: RE: CEMEX (EIR 7763)
Date: Monday, June 22, 2020 4:28:00 PM
Attachments: image001.png

Good afternoon,

Thank you for providing comments on the subject application. Please include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments will be considered in the development of the scope of impacts to be considered by the Draft EIR. The Draft EIR will provide a discussion on the extent of potential impacts identified by the scoping process and may propose mitigation measures to reduce such impacts.

If you have any questions or if you would like to submit additional comments, please don't hesitate to reach out to me at the contact information below.

Chrissy Monfette | **Planner**
Department of Public Works and Planning | **Development Services and Capital Projects Division**
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Please note that our offices are currently closed to the public. If you would like to drop off files or make an in-person submission, you must call ahead and make arrangements with staff. Per the Governor's Order, masks will be required. We apologize for any inconvenience this may cause and thank you for your help to reduce the spread of Covid-19.

From: Carollyn Sakauye <eyedanc2@pacbell.net>
Sent: Monday, June 22, 2020 3:51 PM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: CEMEX

Dear Ms. Monfette,

I read the Fresno Bee Sunday paper and began thinking about the blasting and mining of the "hard rock" planned by CEMEX. I know nothing about the geology of the area, but there is a dam just upstream from where they will be blasting. Have there been any studies to determine what would happen if the bedrock was destroyed and any faults below or around Friant Dam disturbed?

An other major disturbance would be to the wildlife and water quality which even

now is not the best. It will be for 100 years which means it will never be the same, even though CEMEX says that they will restore the habitat in the mined sites.

I see nothing good to come of allowing CEMEX to "modify" the Rockfield Quarry and many reasons to not further disturb the area. I am strongly opposed to allowing expansion of the quarrying.

Sincerely,

Carolyn Sakauye, M.D.
eyedanc2@pacbell.net

Monfette, Christina

From: Christian Sorondo <christianhope@mail.fresnostate.edu>
Sent: Sunday, June 28, 2020 7:26 PM
To: Monfette, Christina
Subject: Please stop CEMEX

To whom it may concern,

My name is Christian Sorondo and I am a local Indigenous activist and student at Fresno State. I recently traveled to Sonoma to learn about the environmental devastation caused by mining. Blast mining poses the greatest threat to our ecosystem here in the valley. It has the potential to onset earthquakes, it accounts for massive amounts of lead/mercury poisoning in our local fish and crops, as well as creates an impossible ground level of sediment that many quarries since the Gold Rush have yet to recover from.

By allowing an already wealthy company like CEMEX to essentially disrupt and destroy our ecosystem to make a profit, Fresno residents will be subjected to grand scale dangers. The threats this project poses include contaminated fish/wildlife, air pollution, and polluted water. This "business transaction" would also disrupt the very lives of our culturally enriched indigenous communities. The Yokuts and Mono peoples of this land have witnessed first hand the dangers of mining and the endangerment of their traditional foodstuffs such as the salmon from the San Joaquin River.

If you pursue this endeavor you will be damaging not only our native communities who have already suffered enough but also allow Fresno residents to potentially drink poisioned water, eat contaminated local produce, and kill animals who are sustained by their undisrupted environments. Not to mention, potentially disrupting our supply of rain by crippling the riparian forest along the river.

I urgently ask that you stop this project.

I hope to see a time where the well-being of people, and all life for that matter, is chosen over profit. Thank you for your time.

Sincerely,
Christian Sorondo

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 29, 2020 12:03 PM
To: Christian Sorondo
Subject: RE: Please stop CEMEX (EIR 7763)

Good afternoon,

Thank you for providing comments on the subject application. Please include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments will be considered in the development of the scope of impacts to be considered by the Draft EIR. The Draft EIR will provide a discussion on the extent of potential impacts identified by the scoping process and may propose mitigation measures to reduce such impacts.

If you have any questions or if you would like to submit additional comments, please don't hesitate to reach out to me at the contact information below. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

From: Christian Sorondo <christianhope@mail.fresnostate.edu>
Sent: Sunday, June 28, 2020 7:26 PM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: Please stop CEMEX

To whom it may concern,

My name is Christian Sorondo and I am a local Indigenous activist and student at Fresno State. I recently traveled to Sonoma to learn about the environmental devastation caused by mining. Blast mining poses the greatest threat to our ecosystem here in the valley. It has the potential to onset earthquakes, it accounts for massive amounts of lead/mercury poisoning in our local fish and crops, as well as creates an impossible ground level of sediment that many quarries since the Gold Rush have yet to recover from.
By allowing an already wealthy company like CEMEX to essentially disrupt and destroy our ecosystem to make a profit, Fresno residents will be subjected to grand scale dangers. The threats this project poses include contaminated fish/wildlife, air pollution, and polluted water. This "business transaction" would also disrupt the very lives of our culturally enriched indigenous communities. The Yokuts and Mono peoples of this land have witnessed first hand the dangers of mining and the endangerment of their traditional foodstuffs such as the salmon from the San Joaquin River. If you pursue this endeavor you will be damaging not only our native communities who have already suffered enough but also allow Fresno residents to potentially drink poisioned water, eat contaminated local produce, and kill animals who are sustained by their undisrupted environments. Not to mention, potentially disrupting our supply of rain by crippling the riparian forest along the river.
I urgently ask that you stop this project.

I hope to see a time where the well-being of people, and all life for that matter, is chosen over profit. Thank you for your time.
Sincerely,
Christian Sorondo

Monfette, Christina

From: Jimenez, Bernard
Sent: Monday, July 6, 2020 8:23 AM
To: Monfette, Christina
Cc: Motta, Chris
Subject: FW: Stop CEMEX(EIR 7763)
Attachments: petition_signatures_jobs_23144106_20200705234251.pdf

Bernard Jimenez| Assistant Director
Public Works and Planning | Administration
2220 Tulare St. 6th Floor Fresno, CA 93721
Direct: (559) 600-4234 / Main Office: (559) 600-4078
Your input matters! Customer Service Survey

From: Clerk/BOS <ClerkBOS@fresnocountyca.gov>
Sent: Monday, July 6, 2020 8:14 AM
To: Jimenez, Bernard <BJimenez@fresnocountyca.gov>; Benjamin, Marc <mbenjamin@fresnocountyca.gov>; Bourbon, Kelliana <kbourbon@fresnocountyca.gov>; Day, Vickie <vday@fresnocountyca.gov>; Jeffers, Robert <rjeffers@fresnocountyca.gov>; Jones, Lindsay <lejones@fresnocountyca.gov>; Martinez, Ari (Harim) <hamartinez@fresnocountyca.gov>; Rapada, Steve <srapada@fresnocountyca.gov>; Rush, Bret <brush@fresnocountyca.gov>; Tangipa, David <dtangipa@fresnocountyca.gov>; Zaragoza, Jessika <jzaragoza@fresnocountyca.gov>
Subject: FW: Stop CEMEX(EIR 7763)

The below email was received at the Clerk/BOS email.

From: Christian Sorondo <christianhope@mail.fresnostate.edu>
Sent: Sunday, July 05, 2020 5:01 PM
To: Clerk/BOS <ClerkBOS@fresnocountyca.gov>
Subject: Stop CEMEX(EIR 7763)

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Dear Board of Supervisors,

I am a resident of Fresno and deeply concerned about the blast mining project proposed by the CEMEX company. I understand tomorrow is the last day to notify you of any grievances we have with the project. That being said, I have already contacted Mr. Pacheco as well as Ms. Christina Monfette of the Public Works and Planning Department regarding the issues posed by the project. I have also attached the signatures of those who agreed to sign a petition a peer and I started in opposition of the CEMEX permits. Within less than a week, we have gathered over 100 signatures. I hope this email finds you all well and that you stop this project before we experience the very real dangers of water/air pollution, obstruction of the water cycle that grants us rain, as well as the loss of habitat for fish and wildlife.

Best wishes,
Christian Sorondo
http://chng.it/KMZ2ygHq

change.org

Recipient: Fresno County Board of Supervisors

Letter: Greetings,

Stop CEMEX from blast mining San Joaquin River

Signatures

Name	Location	Date
Christian Sorondo	US	2020-06-29
David Horwitz	Fresno, CA	2020-06-29
Rebecca Horwitz	Fresno, CA	2020-06-29
Brianna Cervantes	Arroyo Grande, US	2020-06-29
Yasmine Romero	Madera, CA	2020-06-29
Joyce Fadenrecht	Fresno, CA	2020-06-29
Noel Aguilar	San Jose, CA	2020-06-29
Eric Lindae	Santa Rosa, CA	2020-06-30
Sarah G	Calimesa, CA	2020-06-30
Marvin Cornejo	Fresno, CA	2020-06-30
Hamdi Abdullahi	Chaska, US	2020-06-30
skylar galvas	North Hollywood, US	2020-06-30
Jacklyn Puente	Dallas, US	2020-06-30
Ayaila Sims	San Francisco, CA	2020-06-30
Melanie Torres	Fontana, CA	2020-06-30
Madison Hefford	San Antonio, US	2020-06-30
Donya Darvish	San Francisco, CA	2020-06-30
brinton prouty	Rancho Cucamonga, CA	2020-06-30
Caitlin Foley	San Francisco, CA	2020-06-30
michelle ruano	San Francisco, CA	2020-06-30

Name	Location	Date
Luna Cardenas	San Francisco, US	2020-06-30
carly johnson	Folsom, CA	2020-06-30
youre mom	US	2020-06-30
Gail Fadenrecht	Santa Rosa, CA	2020-06-30
kenyana robinson	Clovis, CA	2020-06-30
Annika Pettersson	Fresno, CA	2020-06-30
Irma Deaquino	Anaheim, CA	2020-06-30
Lauren Holtermann	Fresno, CA	2020-06-30
Jeff Williams	Claremont, US	2020-06-30
Katherine Gorman	Baltimore, US	2020-06-30
Jaclyn Daddio	East Brunswick, US	2020-06-30
Lilly Fuller	Redondo Beach, CA	2020-06-30
Elijah Gonzalez	Fresno, CA	2020-06-30
precious kamara	Lynn, US	2020-06-30
Victoria Jolly	Cumming, US	2020-06-30
Rose Bancroft	Centerville, US	2020-06-30
Ellis Blackstone	Westerville, US	2020-06-30
Stephanie Smith	Glendale, US	2020-06-30
keriann conroy	Gunnison, US	2020-06-30
Sylvia Reyes	Ellicott City, US	2020-06-30
Lily Ullman	Kennett Squarre, US	2020-06-30
Elayna Cunningham	Livonia, US	2020-06-30

Name	Location	Date
Addison Man	Baton Rouge, US	2020-06-30
peter le peter	Lewiston, US	2020-06-30
Bridget Corey	Glastonbury, US	2020-06-30
Alyssa Campagna	Collingswood, US	2020-06-30
Tristin Gillen	Waxahachie, US	2020-06-30
Em Stannard	Ottawa, Canada	2020-06-30
Ashanti Ferguson	Klamath Falls, OR	2020-06-30
Woodrow Ferguson	Fresno, CA	2020-06-30
Heriberto Trevino	San Antonio, TX	2020-06-30
farah noorzaye	Torrance, CA	2020-06-30
Lizbeth Diaz	Detroit, MI	2020-06-30
Steffanie Filgas	Fresno, CA	2020-06-30
A S	California	2020-06-30
maria martinez	Dallas, US	2020-07-01
Reina Oliver	Bowie, US	2020-07-01
Jas R	US	2020-07-01
Elizabeth McCarthy	Park Ridge, US	2020-07-01
Jacqueline perdomo	Santa Maria, US	2020-07-01
J R	Houston, US	2020-07-01
Julissa Hurtado	Santa Ana, US	2020-07-01
Jaxon Palmer	Los Lunas, US	2020-07-01
Olivia Hobbs	Marysville, US	2020-07-01

Name	Location	Date
Ed Sheets	Granite Falls, US	2020-07-01
kayra ramos	Hermitage, US	2020-07-01
Kris Guru	Hillsborough, US	2020-07-01
Lilah Bilbe	Austin, US	2020-07-01
Amanda Kerr	Hamden, US	2020-07-01
Abigail Cunanan	Fresno, CA	2020-07-01
melissa proudian	Fresno, CA	2020-07-01
Jonathan Pena-Mancinas	Fresno, CA	2020-07-01
Cheryl Kershaw	Morro Bay, CA	2020-07-01
Mary Savala	Fresno, CA	2020-07-01
Audrey Kirk	Fresno, CA	2020-07-02
cody lynn	lancaster, US	2020-07-02
Sherryl Washington	West Hempstead, US	2020-07-02
Ellie Pittman	Leawood, US	2020-07-02
Rio Vogler	Arroyo Grande, US	2020-07-02
Alliah Simpson	Charlotte, US	2020-07-02
Destiny Echeverria	Los Angeles, US	2020-07-02
Michelle Stern	Woodland Hills, US	2020-07-02
Monica McLean	Syracuse, US	2020-07-02
Alondra Ramirez	Jacksonville, US	2020-07-02
Zana Frownfelter	Fresno, CA	2020-07-02
Nahim Eusebio	Lebanon, US	2020-07-02

Name	Location	Date
Hudson Acreman	Birmingham, US	2020-07-02
Imani Hall	Riverton, US	2020-07-03
Reid Gromis	Fresno, CA	2020-07-03
Ariel Mena	Fresno, CA	2020-07-03
Daniel Noonan	Fresno, CA	2020-07-03
Laura Gromis	Fresno, CA	2020-07-03
Holly Sowles	Clovis, CA	2020-07-03
Joan Krejcar Sharma	Fresno, CA	2020-07-03
Kathleen Adams	Fresno, CA	2020-07-03
Tracy Teran	Reedley, CA	2020-07-03
Glenn Terpstra	Salida, CA	2020-07-03
Christian Sorondo	Fresno, US	2020-07-04
Kathy Boudinot-Johnson	Fresno, CA	2020-07-04
Richard Casto	Conway, US	2020-07-04
Jacqueline Richards	Fresno, CA	2020-07-04
Tina Martinez	Fresno, CA	2020-07-05
Evelyn Mikerin	Fresno, CA	2020-07-05
Warren Shaw	Fresno, CA	2020-07-05

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 3:57 PM
To: christianhope@mail.fresnostate.edu
Subject: EIR 7763 - Cemex Rockfield Modification Project: Confirmation of Receipt of Comments.

Good afternoon,

Thank you for providing comments on this application to the Board of Supervisors. This email is being provided as receipt of your submission of comments and the petition opposing this application. This email confirms that those comments and petition were received during the public scoping period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

Please let me know if you have any questions,

Thank you,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18119
IP Address	73.41.199.102
Submission Recorded On	07/06/2020 10:39 AM
Time to Take the Survey	5 minutes, 43 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Clare Statham

2. Organization/Business

Resident of Fresno

3. What is your address?

3977 N. Mariposa St., Fresno, 93726

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

stathamolin@sbcglobal.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Cemex's proposal to increase its mining activity should be rejected by the County of Fresno. The proposal is to increase production at the two-part facility from 1.4MT at present to 3.0MT within ten years. That is a more than 100% increase in production. The new level of production would require substantial increases in all the activities involved in mining. Truck traffic on Friant Road would increase to over a thousand trips per day. The haul trucks used for this operation are highly polluting, noisy, destructive to the road surface, dangerous for the many cyclists who use this road, and dangerous for motorists The two mile interplant haul that is a 30-year feature of this proposal creates a traffic flow that is dangerous for the residents and commuters for whom Friant Road is a main arterial road.

The air pollution generated by Cemex's 100% increase in mining will affect people living in the area as well as the thousands of citizens who use the Eator Trail and Lost Lake Park. In a region woefully lacking in parks and trails, the County should do its utmost to protect two of the best easily-accessible recreational destinations our citizens have.

The proposal calls for blasting and drilling to the depth of 600 feet. Millerton Lake at capacity is 319 feet deep. The process of making a hole nearly twice the depth of Millerton and the flow of water into that hole will have a negative impact on the San Joaquin River. It is after all immediately adjacent to the mining site. The San Joaquin River is recognized as one of the most abused rivers in the United States. Cemex's proposal is completely at odds with the work being done to rehabilitate the river and river corridor. It is at odds with the mission of the San Joaquin River Conservancy and with federal and stat laws protecting the San Joaquin River. Cemex's plan to reclaim this acreage in a 100 years is meaningless when weighed against the ecological and aesthetic damage it will inflict on the land for the next century.

To grant a Conditional Use Permit the County states in its NOP that it must find "that the proposed use will have no adverse effect on abutting property and surrounding neighborhood." Whether we are speaking of the people who live in the area, those who recreate in the area, the river itself, or the riparian plants and wildlife, it is clear this mining expansion would have many adverse effects. I urge the County to reject this proposal.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 12:24 PM
To: stathamolin@sbcglobal.net
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	16315
IP Address	173.10.235.157
Submission Recorded On	06/15/2020 7:48 AM
Time to Take the Survey	0 minutes, 35 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Colburn Thomason

2. Organization/Business

Thomason Development Company

3. What is your address?

7090 N. Marks Ave. Suite 102

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

colby@thomasondevelopment.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Not answered

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Tuesday, June 16, 2020 10:12 AM
To: colby@thomasondevelopment.com
Subject: Confirmation of Receipt of Request for Notice (EIR 7763)

Good morning,

I am sending you this email to confirm that your email address has been added to the list to receive digital notices relating to this application as requested by your submission of a comment card through our website.

Please note that the comment card was received with only the request for notice and did not appear to have any comments relating to the application. If you would like to submit comments, you may provide another comment card with questions 6 and 7 addressed, or you can send comments directly to me either through email or to the address below. Please include the reference EIR 7763 on any submitted comments.

Thank you,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Monfette, Christina

From: Cindy Volpa <cindyvolpa@gmail.com>
Sent: Sunday, June 28, 2020 6:37 PM
To: Monfette, Christina
Subject: EIR 7763

I'm writing to plead with Fresno County to reconsider renewing the contract with Cemex. The San Joaquin River is a treasure to California. It's the backbone of Fresno and is the home to a wealth of important wildlife. Every morning I walk to the Coke Hollowell River Center and see eagles, red tailed hawks, egrets, etc. It's surreal to see the Cemex trucks loaded up with their loads and the accompanying destruction of the river with the eagle right above them. Please protect the future of Fresno County, California and our world. Do your part, please, and "be the change". Do the right thing!

Cindy Volpa
559 360 1529

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 29, 2020 12:25 PM
To: Cindy Volpa
Subject: RE: EIR 7763

Good afternoon,

Thank you for providing comments on the subject application. Please continue to include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments will be considered in the development of the scope of impacts to be considered by the Draft EIR. The Draft EIR will provide a discussion on the extent of potential impacts identified by the scoping process and may propose mitigation measures to reduce such impacts.

If you have any questions or if you would like to submit additional comments, please don't hesitate to reach out to me at the contact information below. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Please note that our offices are currently closed to the public. If you would like to drop off files or make an in-person submission, you must call ahead and make arrangements with staff. Per the Governor's Order, masks will be required. We apologize for any inconvenience this may cause and thank you for your help to reduce the spread of Covid-19.

From: Cindy Volpa <cindyvolpa@gmail.com>
Sent: Sunday, June 28, 2020 6:37 PM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: EIR 7763

I'm writing to plead with Fresno County to reconsider renewing the contract with Cemex. The San Joaquin River is a treasure to California. It's the backbone of Fresno and is the home to a wealth of important wildlife. Every morning I walk to the Coke Hollowell River Center and see eagles, red tailed hawks, egrets, etc. It's surreal to see the Cemex trucks loaded up with their loads and the accompanying destruction of the river with the eagle right above them. Please protect the future of Fresno County, California and our world. Do your part, please, and "be the change". Do the right thing!

Cindy Volpa
559 360 1529

Submitter DB ID	17992
IP Address	2601:205:381:28b0:111f:bcd8:5567:81c2
Submission Recorded On	07/02/2020 5:22 PM
Time to Take the Survey	2 minutes, 44 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Doug Broten

2. Organization/Business

Not answered

3. What is your address?

2050 W, Tenaya

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

dcbroten@comcast.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I am opposed to this project

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

You can't mitigate this project

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 9:37 AM
To: dcbroten@comcast.net
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Monfette, Christina

From: DBUSKETT <dbuskett@att.net>
Sent: Sunday, July 5, 2020 5:00 PM
To: Monfette, Christina
Subject: CEMEX Rockfield Expansion Project EIR 7763, CUP 3666 and 3667

Ms. Christina Monfette County of Fresno Department of Public Works and Planning Development Services and Capital Projects Division 2220 Tulare Street, Sixth Floor Fresno, CA 93721 Submitted by email to: cmonfette@fresnocountyca.gov RE: CEMEX Rockfield Expansion Project EIR 7763, CUP 3666 and 3667 Dear Ms Monfette: I am writing to share my concerns regarding the CEMEX Rockfield Expansion Project. I am a county resident who lives near the San Joaquin River. I have been in the area for nearly 20 years and one of the crown jewels is the river, it's associated parks, trails, water sports, and fishing. Expanding the Cemex operation will certainly have a negative impact on the residents of Fresno County. I already spend nearly every day driving past the Cemex operation on Friant road. It is nothing but an eyesore that creates heavy equipment traffic, dusty conditions, and damage to existing roads. The surface scarring detracts from the river beauty that remains. Fresno already has some of the worst air in the country and is routinely pointed out on local news sources. Adding further trucking operations and blasting will have a negative impact on the air quality and health of our residents. Spending time on the river, either by canoe, kayak, or walking its banks is truly one of the last peaceful retreats many county and city residents have. Please do not let short term private financial gains leave a lasting impact for current and future generations to deal with. Sincerely, Denise Davis 18933 Via Mira Bella Friant, CA 93626
559-367-9512

Denise Davis
Sent from my iPad

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 3:45 PM
To: DBUSKETT
Subject: RE: CEMEX Rockfield Expansion Project EIR 7763, CUP 3666 and 3667

Good afternoon,

Thank you for providing comments on the subject application. Please continue to include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments will be considered in the development of the scope of impacts to be considered by the Draft EIR.

If you have any questions, please don't hesitate to reach out to me at the contact information below.

Thank you again,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Please note that our offices are currently closed to the public. If you would like to drop off files or make an in-person submission, you must call ahead and make arrangements with staff. Per the Governor's Order, masks will be required. We apologize for any inconvenience this may cause and thank you for your help to reduce the spread of Covid-19.

From: DBUSKETT <dbuskett@att.net>
Sent: Sunday, July 5, 2020 5:00 PM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: CEMEX Rockfield Expansion Project EIR 7763, CUP 3666 and 3667

Ms. Christina Monfette County of Fresno Department of Public Works and Planning Development Services and Capital Projects Division 2220 Tulare Street, Sixth Floor Fresno, CA 93721 Submitted by email to: cmonfette@fresnocountyca.gov RE: CEMEX Rockfield Expansion Project EIR 7763, CUP 3666 and 3667 Dear Ms Monfette: I am writing to share my concerns regarding the CEMEX Rockfield Expansion Project. I am a county resident who lives near the San Joaquin River. I have been in the area for nearly 20 years and one of the crown jewels is the river, it's associated parks, trails, water sports, and fishing. Expanding the Cemex operation will certainly have a negative impact on the residents of Fresno County. I already spend nearly every day driving past the Cemex operation on Friant road. It is nothing but an eyesore that creates heavy equipment traffic, dusty conditions, and damage to existing roads. The surface scarring detracts from the river beauty that remains. Fresno already has some of the worst air in the country and is routinely pointed out on local news sources. Adding further trucking operations and blasting will have a negative impact on the air quality and health of our residents. Spending time on the river, either by canoe, kayak, or walking its banks is truly one of the last peaceful retreats many county and city residents have. Please do not let short term private financial gains leave a

Submitter DB ID	16381
IP Address	23.29.8.79
Submission Recorded On	06/16/2020 5:12 PM
Time to Take the Survey	30 minutes, 59 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

David DeFrank

2. Organization/Business

Homeowner

3. What is your address?

16040 N. Friant Rd.

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

defrankdavid@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I live less than 1 mile from the quarry site.

1.) I am concerned about my residential well going dry. My residential well is about 1 mile from the quarry site. Since the quarry site uses no surface wate from the San Joaquin River and uses substantial amounts of water from groundwater wells, I am concerned that increased water usage at the quarry site will reduce the water in the aquifer/water table servicing my well, and I will be left without water.

2.) I am concerned about the cumulative impacts this project will have on the water table, traffic, air pollution and water pollution, when combined with other projects such as the Friant Ranch project planned nearby.

3.) I am concerned about the project emitting or causing increases in airborne particulate matter, oxides of nitrogen, air contaminants from diesel-powered engines and/or reactive organic compounds, posing a health risk to my family. I have athsma and have several young children at my home.

4.) Living less than 1 mile from the quarry site, I am concerned about the noise impacts from mining and related operations, as described in the report entitled, Environmental Noise and Vibration Assessment, CEMEX Rockfield Modification Project, Fresno County, California, by Bollard Acoustical Consultants, dated November 15, 2019.

5.) Living less than 1 mile from the quarry site, I am concerned about emissions and operations that would result in unpleasant odors at my home.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

1.) A requirement that Cemex fund the creation of a recharge ditch and be required to pump water into the recharge ditch, to ensure surrounding wells (including my residential well) do not go dry. Cemex is required to pump water into a recharge ditch for its gravel mine in Lemon Cove, something simila here would be appropriate. Incorporate this requirement as a condition of approval for applicable conditional use permits.

2.) A requirement that Cemex pay to deepen nearby private wells to mitigate their increased water usage and impacts to the aquifer/water table. Incorporate this requirement as a condition of approval for applicable conditional use permits.

3.) A requirement that Cemex pay to have nearby homes connected to a nearby public water system. Incorporate this requirement as a condition of approval for applicable conditional use permits.

4.) A requirement that Cemex pay a traffic impact fee or some other contribution a fund for improvements to Friant Road to ensure traffic impacts are mitigated. Incorporate this requirement as a condition of approval for applicable conditional use permits.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Wednesday, June 17, 2020 9:22 AM
To: defrankdavid@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	16293
IP Address	23.29.4.227
Submission Recorded On	06/13/2020 1:41 PM
Time to Take the Survey	22 minutes, 26 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Diane Durando

2. Organization/Business

Resident

3. What is your address?

15462 N Friant Road

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

jimdiane@netptc.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Aesthetics: Comment on 16 A, points 1-4. Theses are the opinion of a person. My concern is the aesthetics. To have large equipment for processing the cement and asphalt , large parking lots full of cement delivery trucks, cars and so forth will have a negative effect the scenic highway. This area has also been designated residential and many of the homes will have an unsightly view. At the current, CEMEX Processing facility at the junction of Willow and Friant Roads the major equipment is back from the road and screened by some tree plantings. The proposed site has only a 5 foot berm and is located adjacent to the road .

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Have an independent company do a graphic visual projection, so the aesthetics can be more fairly evaluated by a committee of people. This needs to include a visual for how the proposed project will look as well as a visual as to how it would appear if mining is stopped today and the grading from the last CUP of the pits and landscaping to returned to the area.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Submitter DB ID	16401
IP Address	23.29.4.227
Submission Recorded On	06/17/2020 10:50 AM
Time to Take the Survey	14 minutes, 17 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Diane Durando

2. Organization/Business

Resident

3. What is your address?

15462 N Friant Road

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

jimdiane@netptc.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

LAND VALUES-- No where in the CUP does it address the impact of property and home values on the current properties. It appears from studies I have read that we could expect a significant reduction in our value.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Property and home appraisals as of today as if this project was not under consideration. So we have a base line property value. How will the individual resident be compensated for the loss of value in their property to include future property appreciation that would occur? Would this be held in bond so the property owners are guaranteed payment?

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Monfette, Christina

From: Monfette, Christina
Sent: Friday, June 26, 2020 4:36 PM
To: Jim Durando
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good afternoon,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date. Staff is currently in receipt of 8 sets of comments submitted by this email address, which includes comments from you, Diane Durando, and one comment submitted with both names attached.

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

From: Monfette, Christina
To: Jim Durando
Subject: EIR 7763 - Confirmation of Receipt of Online Comments
Date: Friday, June 26, 2020 4:35:00 PM
Attachments: image001.png

Good afternoon,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date. Staff is currently in receipt of 8 sets of comments submitted by this email address, which includes comments from you, Diane Durando, and one comment submitted with both names attached.

Chrissy Monfette | **Planner**
Department of Public Works and Planning | **Development Services and Capital Projects Division**
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	17880
IP Address	23.29.2.178
Submission Recorded On	06/30/2020 3:15 PM
Time to Take the Survey	9 minutes, 31 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Diane Durando

2. Organization/Business

Not answered

3. What is your address?

15462 N Friant Rd

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Not answered

5. Please provide your email address.

jimdianc@netptc.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Homes and populations. This project has a huge impact on the current residence within 1 mile of this project. I know you did the best you could with the initial EIR scoping meeting. BUT the people of Friant deserve a more transparent meeting with the ability to see complete reports, appendices, visuals, ability to talk eye to eye with the planning committee or any people conducting a meeting. This is a 100 year project. What is a few months to trea the citizens of Friant with respect?

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

The next meeting needs to be arranged in person. Either wait until spring 2021 when vaccines should be available or arrange a very large meeting area with room for social distancing. Microphones so everyone that wants to be heard can speak, rather than only a chosen number being allowed to express their concerns to the persons making decisions that will affect their quality of living, degraded the environment and loss of personal property value.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfettc

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Tuesday, June 30, 2020 3:18 PM
To: jimdiane@netptc.net
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	17907
IP Address	23.29.2.178
Submission Recorded On	07/01/2020 10:55 AM
Time to Take the Survey	21 minutes, 28 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Diane Durando

2. Organization/Business

Not answered

3. What is your address?

15462 N Friant Rd

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Not answered

5. Please provide your email address.

jimdiane@netptc.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Noise- I feel the noise form the blasting, drop ball aggregate sorters and additional traffic will cause excessive noise. The hours of operation are very excessive. CEMEX just wants free range to do as they please.

7. Mitigation measures arc changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

In Stage 1- which is to last 30 years from when the project begins they say there will only be rock removal from the current quarry. To reduce the effect on the current property owners since the plant will not be moved to this site for 30 years. I believe the hours should remain the current hours at the quarry for 30 years 7 am to 4 pm. No work on Sundays. They can not move the plant or other portable equipment to the quarry until the 30 years has elapsed.

Also the residence shall be notified in writing 48 hours before each blasting session. This would be by notes delivered to their doors. The USP mail is usually a day or 2 slower out here so mailing notices would need to be 1 week prior to blasting. This would need to include how many blasts and the time of expected blasts. This is only "neighborly".

This allows the current residence to live out the current aggregate plan and future residence after 30 years, would then be aware of the plant moving to the site before they purchase a property.

I still not agree to the proposed expansion. But this might make it more palatable. This would need to be very specific because as we know CEMEX ignores what they think they can get away with. As they have been starting before 6 am for many years. We were not aware of the start time of this until we saw the proposed plan. By the way the last 3 days they have started at 7 am. So it indicates they were aware that they were not following the last CUP. They should be fined for this infraction. Who is responsible to monitor and and carry out discipline?

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfettc
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Wednesday, July 1, 2020 11:15 AM
To: jimdiane@netptc.net
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

Please let me know if you have any questions. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18007
IP Address	73.192.179.53
Submission Recorded On	07/02/2020 8:48 PM
Time to Take the Survey	13 minutes, 36 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

David E Brown

2. Organization/Business

retired civil servant

3. What is your address?

9074 N. Brookview Ave

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

nworbd@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Soon after we decided to retire to Fresno, we learned that the idea of a park in the San Joaquin River Valley had been in gestation already for many years. We enthusiastically applaud that idea, with the caveat that the park should be a welcoming place for ALL Fresnians, whether from south of Shaw, west of the railroad tracks, or wherever.

Sure, the Comex proposal may be good for a local business, but approving would be a terrible idea for the city and its people. Ms Brown and I urge rejection of any plan to extend commercialization of the river's surrounds. We urge the sensible, prompt and inclusive development of the river valley as a playground for all.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Really, 'mitigation' would be like asking a python and a rabbit to co-exist. Deny the Comex proposal, please, and move on energetically with the SJ River Valley Park.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 10:40 AM
To: 'nworbd@gmail.com'
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18158
IP Address	2601:205:4:bd0:c89:ad53:43c6:14ec
Submission Recorded On	07/06/2020 2:20 PM
Time to Take the Survey	2 minutes, 7 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Diana Gallardo

2. Organization/Business

Not answered

3. What is your address?

5272 W ROBINSON AVE

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

gallardodiana6@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

How will the blast impact not only north Fresno but the whole county air quality? Are you going to consider that the Central Valley already has some of the worst air in the nation into the decision?

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Tuesday, July 7, 2020 8:32 AM
To: gallardodiana6@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| **Planner**
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18160
IP Address	2601:204:380:7c70:e5bb:c354:d3cb:a4aa
Submission Recorded On	07/06/2020 2:31 PM
Time to Take the Survey	2 minutes, 44 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

David Grubbs

2. Organization/Business

Fresno State - Retired

3. What is your address?

2535 E Palo Alto Ave, Fresno CA 93710

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

davidgr@mail.fresnostate.edu

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Current permits for conditional use of this site in the San Joaquin River floodplain should be allowed to expire. Anything else is inconsistent with the Fresno County General plan and will have adverse effects on abutting property, surrounding neighborhoods, and the region as a whole. Restoration should begin as agreed in the original permit.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

There are no mitigation efforts that would make this project acceptable. Increased haul traffic, dust and diesel exhaust will exacerbate already wretched air quality, and the continued mining of alluvial deposits promises to degrade the environmental conditions of the San Joaquin River and its floodplains.

And a six hundred foot deep hole is beyond the pale. A pit several hundred feet below sea level can't help but impact water quality and river flow.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Monfette, Christina

From: Monfette, Christina
Sent: Tuesday, July 7, 2020 8:32 AM
To: 'davidgr@mail.fresnostate.edu'
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Monfette, Christina

From: David Horwitz <daveed-ari-4hateva@pacbell.net>
Sent: Sunday, June 28, 2020 6:48 PM
To: Monfette, Christina
Subject: Please Consider The San Joaquin River's Future--And the People's

Dear Ms. Christina Monfette,

It's come to my attention, as a Fresno County resident, that you among other Fresno County officials are weighing a proposal by the multi-national corporation, Cemex, to mine the San Joaquin River. The company is planning on mining down 600 feet, according to news coverage, and is asking for a duration of 100 years to be allowed to fulfill their labors for the sake of our industrial era's rampant need for resources that enable building and maintenance work. I understand their hope is to be able to keep infrastructure functioning into the future, including that of our county's, but I am quite frankly opposed to an endeavor that would cost our community's quality of life. This effort would pollute our river's clean water, increase air pollution in our already beleaguered region, annihilate precious wildlife corridors that depend on a healthy riparian woodland ecosystem unmolested by industrial despoliations of the soil life and water needed to support such biological communities, potentially poison the Fresno aquifer, Fresno's water supply, to the extent the San Joaquin River waters contribute to it, potentially increase seismic activity as has been observed with similar deep Earth penetrations like fracking, and decimate quality of life with heavy traffic and devastating noise and air pollution for those members of the county who live on or near the San Joaquin River. Not only does such an endeavor cause these detrimental effects, but the riparian forests, like all forests, have the capacity to actually sequester rainfall and increase precipitation, acting as cloud seeders through foliar water transpiration up into the atmosphere, and doubling precipitation where they immediately grow through canopy drip, and improvements to soil water carrying capacity. This has been observed in the Amazon, in N. America's forests, and even in California's Oak woodland and Oak Savanna. **Should we lose the health of the San Joaquin Valley, it's rivers**, with the inevitable damage to riparian woodland, **we will lose snowpack too, and lose precipitation in the Valley as winter rain, over time of course. All public officials ought to know that the Central Valley can use all the water it can get, for *farms*,** for **residents**, and *for wild ecosystems* that give services such as clean water and biodiversity to counterbalance pest insects and animals. So the hard truth is this -- do you and your colleagues support human life in your county, which depends on a healthy San Joaquin River, or do you and your colleagues support short term financial gain by a multi-national corporation that has no investment whatsoever in the region, other than to gain profits at the expense of we who live in this county? If you truly represent the people, you will choose us, over Cemex.

-David, a Fresno County resident

Monfette, Christina

From: Jimenez, Bernard
Sent: Monday, June 29, 2020 9:35 AM
To: Monfette, Christina
Cc: Motta, Chris
Subject: Fw: Please Protect The San Joaquin Valley and River

From: District 3 <district3@fresnocountyca.gov>
Sent: Monday, June 29, 2020 9:25 AM
To: Jimenez, Bernard <BJimenez@fresnocountyca.gov>
Subject: FW: Please Protect The San Joaquin Valley and River

Public comment on Cemex

Ari Martinez | **District Director**
Board of Supervisors, District 3
Hall of Records
2281 Tulare St., Room 301, Fresno, CA 93721
Main Office: (559) 600-3002
hamartinez@fresnocountyca.gov

From: David Horwitz <daveed-ari-4hateva@pacbell.net>
Sent: Sunday, June 28, 2020 6:04 PM
To: District 3 <district3@fresnocountyca.gov>
Subject: Please Protect The San Joaquin Valley and River

Dear Supervisor Sal Quintero,
It's come to my attention, as a resident in your district, that you among other Fresno County Board of Supervisor members are weighing a proposal by the multi-national corporation, Cemex, to mine the San Joaquin River. The company is planning on mining down 600 feet, according to news coverage, and is asking for a duration of 100 years to be allowed to fulfill their labors for the sake of our industrial era's rampant need for resources that enable building and maintenance work. I understand their hope is to be able to keep infrastructure functioning into the future, including that of our county's, but I am quite frankly opposed to an endeavor that would cost our community's quality of life. This effort would pollute our river's clean water, increase air pollution in our already beleaguered region, annihilate precious wildlife corridors that depend on a healthy riparian woodland ecosystem, by industrial despoliations of the soil life and water needed to support such biological communities, potentially poison the Fresno aquifer, Fresno's water supply, to the extent the San Joaquin River waters contribute to it, potentially increase seismic activity as has been observed with similar deep Earth penetrations like fracking, and decimate quality of life with heavy traffic and devastating noise and air pollution for those members of the county who live on or near the San Joaquin River. Not only does such an endeavor cause these detrimental effects, but the riparian forests, like all forests have the capacity to do, as has been observed in the Amazon, and in N. America's forests, actually sequester rainfall and increase precipitation,

acting as cloud seeders through foliar water transpiration up into the atmosphere. Forests, and trees, no matter how seemingly insignificant, have been shown to increase rainfall, and the riparian woodland is no different. Should we lose the health of the San Joaquin, with the inevitable damage to riparian woodland, we will lose snowpack, and lose precipitation in the Valley as winter rain, with time of course. All public officials ought to know that the Central Valley can use all the water it can get, for farms, for residents, and for wild ecosystems that give services such as clean water and biodiversity to counterbalance pest insects and animals. So the hard truth is this -- do you and your colleagues support human life in your county, which depends on a healthy San Joaquin River, or do you and your colleagues support short term financial gain by a multi-national corporation that has no investment whatsoever in the region, other than to gain profits at the expense of we who live in this county? If you truly represent the people, you will choose us, over Cemex.

Respectfully,

David, a concerned Fresno County resident

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 29, 2020 12:27 PM
To: David Horwitz
Subject: RE: Please Consider The San Joaquin River's Future--And the People's (EIR 7763)

Good afternoon,

Thank you for providing comments on the subject application. Please include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments will be considered in the development of the scope of impacts to be considered by the Draft EIR. The Draft EIR will provide a discussion on the extent of potential impacts identified by the scoping process and may propose mitigation measures to reduce such impacts.

If you have any questions or if you would like to submit additional comments, please don't hesitate to reach out to me at the contact information below. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

From: David Horwitz <daveed-ari-4hateva@pacbell.net>
Sent: Sunday, June 28, 2020 6:48 PM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: Please Consider The San Joaquin River's Future--And the People's

Dear Ms. Christina Monfette,

It's come to my attention, as a Fresno County resident, that you among other Fresno County officials are weighing a proposal by the multi-national corporation, Cemex, to mine the San Joaquin River. The company is planning on mining down 600 feet, according to news coverage, and is asking for a duration of 100 years to be allowed to fulfill their labors for the sake of our industrial era's rampant need for resources that enable building and maintenance work. I understand their hope is to be able to keep infrastructure functioning into the future, including that of our county's, but I am quite frankly opposed to an endeavor that would cost our community's quality of life. This effort would pollute our river's clean water, increase air pollution in our already beleaguered region, annihilate precious wildlife corridors that depend on a healthy riparian woodland ecosystem unmolested by industrial despoliations of the soil life and water needed to support such biological communities, potentially poison the Fresno aquifer, Fresno's water supply, to the extent the San Joaquin River waters contribute to it, potentially

increase seismic activity as has been observed with similar deep Earth penetrations like fracking, and decimate quality of life with heavy traffic and devastating noise and air pollution for those members of the county who live on or near the San Joaquin River. Not only does such an endeavor cause these detrimental effects, but the riparian forests, like all forests, have the capacity to actually sequester rainfall and increase precipitation, acting as cloud seeders through foliar water transpiration up into the atmosphere, and doubling precipitation where they immediately grow through canopy drip, and improvements to soil water carrying capacity. This has been observed in the Amazon, in N. America's forests, and even in California's Oak woodland and Oak Savanna. **Should we lose the health of the San Joaquin Valley, it's rivers**, with the inevitable damage to riparian woodland, **we will lose snowpack too, and lose precipitation in the Valley as winter rain, over time of course. All public officials ought to know that the Central Valley can use all the water it can get, for *farms*,** for **residents**, and *for wild ecosystems* that give services such as clean water and biodiversity to counterbalance pest insects and animals. So the hard truth is this -- do you and your colleagues support human life in your county, which depends on a healthy San Joaquin River, or do you and your colleagues support short term financial gain by a multi-national corporation that has no investment whatsoever in the region, other than to gain profits at the expense of we who live in this county? If you truly represent the people, you will choose us, over Cemex.

-David, a Fresno County resident

Submitter DB ID	17543
IP Address	2001:5b0:2654:e0e8:a96d:d58e:b45b:896d
Submission Recorded On	06/22/2020 9:52 AM
Time to Take the Survey	53 minutes, 39 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Dustin Lee

2. Organization/Business

Residential Home Owner

3. What is your address?

15918 N. Friant Rd Friant, CA

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

dustingarrettlee@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

• I have concerns with the proposed reclamation plan for the 600 ft deep Quarry site pit and how that will comply with the existing CUP to restore the existing habitat back to natural riparian habitat. The Quarry site would primarily be exposed hardrock benches that would be exposed granite with no vegetation. How would the benches be restored back to riparian and open water habitat? There is only a small 50 ft deep pond proposed at the bottom of the pit.

• How will the wildlife be able to use the reclaimed site when there's no access or vegetation that will grow on the hardrock benches.

• I have concerns with the effects of the active mining and blasting site on the surrounding residential properties and future residential properties. Madera and Fresno County have zoned properties adjacent to the River and along the bluff tops for residential homes.

• I have concerns with the proposed blasting and the effects that will have on the surrounding wildlife and aquatic life. How will the air, noise, and water effects on the wildlife be mitigated or avoided?

• I have concerns with the blasting and mining of the Quarry site and the effects that will have on the San Joaquin River ecosystem and the surrounding wildlife. The blasting will deter wildlife away from the vicinity.

• I have concerns with excavating a 600 ft deep pit and the effects that will have on the groundwater table and the surrounding hydrology. How will they excavate down below the groundwater table and not contaminate the water with their proposed equipment and blasting methods?

• I have concerns with the water that will collect or seep into the pit and the contaminants that the water will be exposed to from the active blasting and mining site. How will the water be captured, cleaned, and returned back into the environment?

Note: The Vision System did not print the comments below in a legible manner due to their length, so they have been reproduced here. -Chrissy

Submitter ID 17543 – Dustin Lee

Comments about the project:

• I have concerns with the proposed reclamation plan for the 600 ft deep Quarry site pit and how that will comply with the existing CUP to restore the existing habitat back to natural riparian habitat. The Quarry site would primarily be exposed hardrock benches that would be exposed granite with no vegetation. How would the benches be restored back to riparian and open water habitat? There is only a small 50 ft deep pond proposed at the bottom of the pit.

• How will the wildlife be able to use the reclaimed site when there's no access or vegetation that will grow on the hardrock benches.

• I have concerns with the effects of the active mining and blasting site on the surrounding residential properties and future residential properties. Madera and Fresno County have zoned properties adjacent to the River and along the bluff tops for residential homes.

• I have concerns with the proposed blasting and the effects that will have on the surrounding wildlife and aquatic life. How will the air, noise, and water effects on the wildlife be mitigated or avoided?

• I have concerns with the blasting and mining of the Quarry site and the effects that will have on the San Joaquin River ecosystem and the surrounding wildlife. The blasting will deter wildlife away from the vicinity.

• I have concerns with excavating a 600 ft deep pit and the effects that will have on the groundwater table and the surrounding hydrology. How will they excavate down below the groundwater table and not contaminate the water with their proposed equipment and blasting methods?

• I have concerns with the water that will collect or seep into the pit and the contaminants that the water will be exposed to from the active blasting and mining site. How will the water be captured, cleaned, and returned back into the environment?

• How will the use of explosives and blasting be controlled and not released into the groundwater and contaminate the aquifer. The pit is located directly adjacent to the river and there is shallow groundwater there that the 600 ft deep pit would encounter.

• How will the blasting affect the aquatic wildlife in the river?

• I have concerns that a 600 ft deep pit directly adjacent to the San Joaquin River will pull water away from the aquifer and river and seep into the pit thus making the water not usable anymore.

• How will this affect the overall San Joaquin River Parkway Master Plan proposed recreation use of the River with having trails adjacent to an active mining pit?

• I have concerns with the proposed blasting and the effects on the surrounding properties through noise pollution. How will the increase in sound be mitigated to within acceptable ranges?

• The mining pit has direct line of sight to several adjacent property homes. I have concern with the noise that will be created from mining and blasting at the Quarry Site. How will the shockwaves and noise from the blasting be mitigated to below acceptable ranges?

• How will the blasting and mining affect the state mandated salmon restoration? Will the mining be prohibitive during certain active spawning months?

• How will the blasting and mining affect the surrounding wildlife? Will mining be prohibitive during certain times of the year during mating season and times when animals are raising their offspring? It seems like this would drive all animals away from the active mining site creating a negative effect on the ecosystem.

• I have concerns with the proposed blasting and the effects on the surrounding properties through ground movement/shaking. Blasting and the use of explosives will send seismic shockwaves through the granite and potentially shake and damage the surrounding properties.

• I have concerns with the groundwater disruption that the Quarry site pit would cause by mining the existing granite bedrock. The surrounding properties within several miles use this granite bedrock to obtain their water and have wells that pull water from fissures (cracks) in the granite. There is a big concern that mining a deep pit at the downstream end of these properties will create an open face for the water used by these residences to drain out and thus dry up the existing wells. How will this be mitigated and assured will not happen?

• I have concerns with the extended operation hours from the existing permitted operation hours and the effects that will have on the adjacent residences (noise, traffic, pollution)

• I have concerns with the air pollution and the smell of the asphalt plant on the adjacent properties, especially that the westerly winds will blow any emissions/odors onto those properties.

• I have concerns with the air quality and how this proposed project will release additional pollution, gas emissions, and dust into the environment and the effects that will have on overall County air quality as well as the air quality of the surrounding adjacent properties.

• How will this new proposed mining operation affect greenhouse gas emissions?

• How will this new proposed mining operation affect the air and noise quality of the surrounding areas?

• How will this new proposed mining operation affect the watershed, groundwater table, and aquifer?

• How will the site be secured once reclaimed? It's assumed that a fence would need to be installed around the pit to provide safety to the public. If a fence is installed how would that permit wildlife to use the reclaimed land?

• How does the new proposed mining operations at the Quarry site comply with the Surface Mining and Reclamation Act of 1975 which requires mined lands be reclaimed to a usable condition. The site would be void of vegetation and be exposed granite benches (50 ft wide by 50 ft deep).

Suggested Mitigation Measures:

- I would suggest that the existing CUP not be modified to permit hard mining through the use of blasting & drilling and that the existing permit of mining alluvial deposits be allowed to continue similar to all the other adjacent mining sites in the greater Fresno area.
- I would reduce the proposed expanded operation hours down to the previously approved operation hours.

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 29, 2020 9:49 AM
To: Dustin Lee
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	17693
IP Address	2601:204:100:2c:f153:2504:1a42:dee8
Submission Recorded On	06/25/2020 9:18 AM
Time to Take the Survey	6 minutes, 1 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Douglas McMills

2. Organization/Business

Not answered

3. What is your address?

1831 E. Emerald Ave. Fresno, Ca.

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Not answered

5. Please provide your email address.

Not answered → no confirmation email sent

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Please do not allow this destructive mining to take place so close to homes, farms and wildlife. The blasting and dust will ruin the environment and further harm the river.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Do not proceed. Save the river and environment.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Submitter DB ID	18174
IP Address	2601:204:100:54f0:651e:a9bd:227d:b95a
Submission Recorded On	07/06/2020 4:03 PM
Time to Take the Survey	16 minutes, 22 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Diane Merrill

2. Organization/Business

Not answered

3. What is your address?

8540 N Colfax Ave, Fresno93720

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

dbm624@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

NOTE: I have focused on issues related to Friant Road, but some of these issues also apply to Willow Ave.

TRAFFIC SAFETY

1. Despite improvements completed to improve traffic flow and safety along Friant Road (See California Dept. of Transportation document https://ops.fhwa.dot.gov/wz/resources/final_rule/wz_impcts_inter_ex/sec1.htm), there continue to be occasions when traffic backs-up onto NB SR 41 from the Friant Road despite the 5-lane off-ramp. This situation has the potential for deadly heavy-duty truck collisions with passenger vehicles stopped on the freeway.

2. The on-ramp from on the north side of Friant Road onto southbound SR 41 has been slightly improved, but is narrow and has the potential for collisions between fully-loaded sand and gravel trucks and passenger vehicles.

3. Although Friant Road is occasionally repaved, there have been unsafe conditions from uneven or missing pavement from time to time, in part due to gravel truck traffic. This hazard is especially dangerous for motorcycle riders.

AIR QUALITY from vehicle traffic, and including heavy-duty diesel gravel trucks, is detrimental to neighborhoods along Friant Road, and to users of commercial areas, Woodward Park, the Eaton Trail, and the San Joaquin River Parkway.

GREENHOUSE GAS (GHG) EMISSIONS Increased GHG emissions from gravel truck exhaust and passenger vehicles idling in congested traffic along Friant Road.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

1.The major mitigation measure I am suggesting is that any studies, or data, used in environmental documents must be thorough, objective, based on rigorous scientific and statistical analysis, and provided by independent parties. These studies should NOT be provided by the applicant, its customers or affiliates, or the County of Fresno. Potential sources for this information could include State agencies, the UC and CSU systems, and the USGS. The applicant , and not the County taxpayers, should pay for these independent studies.

2. Because the draft environmental documents may be released early in 2021 while the Covid 19 pandemic is still going on, the data used in traffic, air quality and GHG studies must be carefully analyzed so that the information is not skewed due to atypical patterns during the pandemic.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Tuesday, July 7, 2020 8:46 AM
To: dbm624@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| **Planner**
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Monfette, Christina

From: Diana Moreno <ldmoreno2@gmail.com>
Sent: Monday, July 6, 2020 4:51 PM
To: Monfette, Christina
Subject: EIR 7763

Dear Christina, I am writing to you in regard of the recent application from Cemex to continue mining and blasting 600 foot-hole in our city for the next 100 years. My concern is the negative impact that mining will create in our already bad air quality. I moved here from Gilroy last year and I am already suffering breathing problems from the bad air quality. Our officials should think about the impact that the mining will create in our drinking water and trafic.
Please forward my email to our official in charge of making that decision.

Concern Citizen

Diana Moreno
2806 E. Granada Avenue
Fresno Ca 93720
(408) 500-5082

Monfette, Christina

From: Monfette, Christina
Sent: Tuesday, July 7, 2020 9:01 AM
To: Diana Moreno
Subject: RE: EIR 7763

Good morning,

Thank you for providing comments on the subject application. Please include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments were received during the Scoping Period and will be considered in the development of the scope of impacts to be considered by the Draft EIR.

If you have any questions, please don't hesitate to reach out to me at the contact information below.

Thank you again,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Please note that our offices are currently closed to the public. If you would like to drop off files or make an in-person submission, you must call ahead and make arrangements with staff. Per the Governor's Order, masks will be required. We apologize for any inconvenience this may cause and thank you for your help to reduce the spread of Covid-19.

From: Diana Moreno <ldmoreno2@gmail.com>
Sent: Monday, July 6, 2020 4:51 PM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: EIR 7763

Dear Christina, I am writing to you in regard of the recent application from Cemex to continue mining and blasting 600 foot-hole in our city for the next 100 years. My concern is the negative impact that mining will create in our already bad air quality. I moved here from Gilroy last year and I am already suffering breathing problems from the bad air quality. Our officials should think about the impact that the mining will create in our drinking water and trafic.
Please forward my email to our official in charge of making that decision.

Concern Citizen

Diana Moreno
2806 E. Granada Avenue
Fresno Ca 93720
(408) 500-5082

Submitter DB ID	18045
IP Address	108.78.51.127
Submission Recorded On	07/03/2020 3:19 PM
Time to Take the Survey	14 minutes, 42 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Don R Falkenberg

2. Organization/Business

Fresno City/County Homeowner

3. What is your address?

546 E. Richmond Av. Fresno, CA 93720

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

drayf3@aol.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

What will Fresno County and Madera County (Tesoro Viejo/Riverstone) look like 30 to 100 years from now? Much different. And because of this, a 22 mile natural and recreational area along the river would be an essential use of land. Why otherwise would Fresno County, the City of Fresno, and Madera County have previously adopted the San Joaquin River Parkway concept as part of their general plans? Therefore, this proposal is inconsistent and incompatible.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

This proposal is incompatible with previous agreed to land use decisions.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 10:51 AM
To: 'drayf3@aol.com'
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	17492
IP Address	172.93.116.236
Submission Recorded On	06/20/2020 3:38 PM
Time to Take the Survey	11 minutes, 22 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Dolores DeTeresi

2. Organization/Business

member of Flyfishers for Conservation Fresno and Kings River Conservancy

3. What is your address?

257Trout Lake Dr

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

dolores.deteresi@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I have multiple environmental concerns. The paramount one relates to water, both river and ground sourced. To deep mine rock will require considerable water. There are already increased water needs from new communities in Madera County, as well as ongoing drought concerns. This makes it obvious to me that Cemex needs to be last in line when water is being allotted. I strongly urge the Board of Supervisors to vote against the Cemex mining proposal.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

The only mitigation I see is to deny the Cemex proposal to deep mine the San Joaquin river for rock.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 22, 2020 8:40 AM
To: dolores.deteresi@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18071
IP Address	73.90.9.160
Submission Recorded On	07/04/2020 12:29 PM
Time to Take the Survey	9 minutes, 38 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Donna Waddell-Solis

2. Organization/Business

Not answered

3. What is your address?

1638 W San Bruno Ave Fresno, CA 93711

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

dwaddell@guarantee.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

As a Realtor with more than 34 years experience, I see the expansion of the CEMAX Mining Project as a detriment to the health, safety, and property values of the residents in the area from Nees Ave to Friant. While there is probably no question that there is need for cement, CEMEX should look to places that are further removed from major population sites to mine for it. It shouldn't take an EIR, just logic, to see all of the negative impacts the expansion of their existing site will cause.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 11:37 AM
To: 'dwaddell@guarantee.com'
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Monfette, Christina

From: edy corum <edycorum@yahoo.com>
Sent: Monday, July 6, 2020 3:06 PM
To: Monfette, Christina
Subject: Cemex

I am writing to express my concern over the possible expansion of Cemex. This would be an environmental disaster! At this stage in the game we do not need more production of concrete, cement, gravel, etc. What we do need is the preservation of the San Joaquin River and the green space it offers. The mining and drilling which Cemex proposes will increase air pollution, noise pollution, and traffic on Friant Rd. This is not a step in the right direction for the city of Fresno! Instead, a wise step would be to conserve and protect the natural environment in and around the San Joaquin River. As the coronavirus pandemic grinds on, Fresnans will increasingly need spaces in nature where they can find refreshment and peace of mind. Please help them in this pursuit by saying NO to Cemex. Thank-you.

Edythe Corum
139 Pollasky Ave apt 9
Clovis, CA 93612
937-515-2553

Sent from my iPhone

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 4:36 PM
To: edy corum
Subject: RE: Cemex (EIR 7763)

Good afternoon,

Thank you for providing comments on the subject application. Please include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments will be considered in the development of the scope of impacts to be considered by the Draft EIR.

If you have any questions, please don't hesitate to reach out to me at the contact information below.

Thank you again,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. Suite A, Fresno, CA 93721 Main Office: (559) 600-4230 Direct: (559) 600-4245

-----Original Message-----
From: edy corum <edycorum@yahoo.com>
Sent: Monday, July 6, 2020 3:06 PM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: Cemex

I am writing to express my concern over the possible expansion of Cemex. This would be an environmental disaster! At this stage in the game we do not need more production of concrete, cement, gravel, etc. What we do need is the preservation of the San Joaquin River and the green space it offers. The mining and drilling which Cemex proposes will increase air pollution, noise pollution, and traffic on Friant Rd. This is not a step in the right direction for the city of Fresno! Instead, a wise step would be to conserve and protect the natural environment in and around the San Joaquin River. As the coronavirus pandemic grinds on, Fresnans will increasingly need spaces in nature where they can find refreshment and peace of mind. Please help them in this pursuit by saying NO to Cemex. Thank-you.

Edythe Corum
139 Pollasky Ave apt 9
Clovis, CA 93612
937-515-2553

Sent from my iPhone

Submitter DB ID	17736
IP Address	40.140.35.68
Submission Recorded On	06/25/2020 5:06 PM
Time to Take the Survey	7 minutes, 9 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Emily Freeman

2. Organization/Business

None specifically

3. What is your address?

1770 N Twinberry Ave Clovis

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

Not answered No response email sent - emm

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

What a mess. Where do I start? There is a wide range of potential problems: how does explosive mining next to a primary water source impact water quality and resource availability? How is promising to 'donate' back a completely altered 'wildlife habitat' any kind of compensation for the loss of existin riverine habitat? and what is the point of giving back a few ponding basins if there is no plan for public access/use of the GREATEST NATURAL RESOURCE in our area? And why should a handful of people be allowed to irrevocably alter that resource for their own profit with zero concessions to what should be a shared community resource? I want my kids and my community to have a clean, accessible river someday! I want to know how digging a 600ft hole next to a river is going to affect an already tenuous water system—How about in drought years? How will EVEN MORE gravel trucks/rigs impact the traffic and safety of surrounding roads for drivers and cyclists?

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not allowing this project to go forward is the mitigation measure I suggest.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Submitter DB ID	18070
IP Address	73.185.62.158
Submission Recorded On	07/04/2020 12:21 PM
Time to Take the Survey	8 minutes, 47 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Elena Harvey Collins

2. Organization/Business

Not answered

3. What is your address?

2531 West Dovewood Lane

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

elena.h.collins@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

It is unbelievable that a project that would devastate what is left of the San Joaquin River could even be considered. The environment of the San Joaquin valley is so degraded and so damaged. How can a project that will not only risk the water quality for downstream communities and fish and wildlife, but also affect the already limited opportunities that local residents have for recreation and access to the river, possibly be acceptable? This project would never be allowed to go forward in a wealthier part of the state; this is environmental racism, plain and simple. Local governments can't even provide clean and safe drinking water to local communities. How on earth can they consider this project that further threatens water quality and extracts even more wealth from the land while giving nothing in return. Leave the river alone. We must do better.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

This project can not be allowed to go forward. Invest in restoring the environment and creating safe and sustainable recreation opportunities for local residents.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 11:37 AM
To: elena.h.collins@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

Please let me know if you have any questions,

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18109
IP Address	2601:204:0:a750:819:bcab:2f39:72a
Submission Recorded On	07/06/2020 8:53 AM
Time to Take the Survey	18 minutes, 9 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Ellen Hemink

2. Organization/Business

none

3. What is your address?

1418 East Sweetbriar Drive

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

ehenink@apl.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	TribalCultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I have great concern for this proposal! I fear the damage to the environment, the wildlife. the lack of concern for the people of Fresno. We need to encourage preservation of the San Joaquin River and its surrounding lands and its availability to the population of our city, not add to its degradation. Under the current contract which Cemex has with the City of Fresno, operations will be concluded in the nearer future and this land could be returned to natural conditions even with the historic damage to the surface and hopefully to public use.
This city is in dire need of open space, parks and recreation areas. whywould the city council approve a contractwhich takes this valuable natural resource out of the possibility of public use?

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Do not allow mining 600 feet below the surface. The necessary explosive technique to remove rock from this level will cause noise and percussive effect tc both humans and wildlife in the area.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 12:08 PM
To: ehenink@apl.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette | **Planner**
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Monfette, Christina

From: postmaster@usa.cma-cgm.com
To: ehenink@apl.com
Sent: Monday, July 6, 2020 12:09 PM
Subject: Undeliverable: EIR 7763 - Confirmation of Receipt of Online Comments

Delivery has failed to these recipients or groups:

ehenink@apl.com (ehenink@apl.com)
The email address you entered couldn't be found. Please check the recipient's email address and try to resend the message. If the problem continues, please contact your email admin.

Diagnostic information for administrators:

Generating server: CMA-MOB2-EXCV03.mail.cma-cgm.com

ehenink@apl.com
Remote Server returned '550 5.1.10 RESOLVER.ADR.RecipientNotFound; Recipient not found by SMTP address lookup'

Original message headers:

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Received: from CMA-MOB2-EXCV02.mail.cma-cgm.com (10.3.1.20) by
 CMA-MOB2-EXCV03.mail.cma-cgm.com (10.3.1.21) with Microsoft SMTP Server
 (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256) id
 15.1.1713.5; Mon, 6 Jul 2020 21:09:01 +0200
Received: from CMA-MOB2-EDGP01.mail.cma-cgm.com (10.3.0.165) by
 CMA-MOB2-EXCV02.mail.cma-cgm.com (10.3.1.20) with Microsoft SMTP Server
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 via Frontend Transport; Mon, 6 Jul 2020 21:09:01 +0200
Received: from mx07-0010d501.pphosted.com (62.209.51.13) by
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 (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384) id
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Received: from pps.filterd (m0136970.ppops.net [127.0.0.1])
        by mx07-0010d501.pphosted.com (8.16.0.42/8.16.0.42) with SMTP id 066Io5jc0455S3
        for <ehenink@apl.com>; Mon, 6 Jul 2020 21:08:01 +0200
Authentication-Results: cma-cgm.com;
        spf=pass smtp.mailfrom=cmonfette@fresnocountyca.gov;
        dkim=pass header.d=fresnocountyca.gov header.s=selector2;
        dmarc=pass header.from=fresnocountyca.gov
Received: from gcc02-dm3-obe.outbound.protection.outlook.com (mail-
dm3gcc02on2050.outbound.protection.outlook.com [40.107.91.50])
        by mx07-0010d501.pphosted.com with ESMTP id 322h29dcyn-1
        (version=TLSv1.2 cipher=ECDHE-RSA-AES256-GCM-SHA384 bits=256 verify=NOT)
        for <ehenink@apl.com>; Mon, 06 Jul 2020 21:08:00 +0200
ARC-Seal: i=1; a=rsa-sha256; s=arcselector9901; d=microsoft.com; cv=none;

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ARC-Message-Signature: i=1; a=rsa-sha256; c=relaxed/relaxed; d=microsoft.com;
```

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 12:52 PM
To: ehenink@aol.com
Subject: FW: EIR 7763 - Confirmation of Receipt of Online Comments - YOUR RESPONSE REQUESTED

Good afternoon,

The email address provided on the Online Comment Card for this application was ehenink@apl.com ; however, this email address did not work. I have attempted to correct it to ehenink@aol.com. If this email goes through, please respond to confirm your revised address and I will update it on our notice list.

Please note that if I do not hear back from you, no digital notices will be provided because we were not able to confirm your email.

Thank you,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

From: Monfette, Christina
Sent: Monday, July 6, 2020 12:08 PM
To: ehenink@apl.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

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Please let me know if you have any questions,

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2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Monfette, Christina

From: Microsoft Outlook
To: ehenink@aol.com
Sent: Monday, July 6, 2020 12:52 PM
Subject: Undeliverable: FW: EIR 7763 - Confirmation of Receipt of Online Comments - YOUR RESPONSE REQUESTED

Office 365

Your message to ehenink@aol.com couldn't be delivered.

When Office 365 tried to send your message, the receiving email server outside Office 365 reported an error.

cmonfette	**Office 365**	**ehenink**
Sender		**Action Required**
		Policy violation or system error

How to Fix It

Check the "Reported Error" from the "Error Details" section shown below for more information about the problem. The error might tell you what went wrong and how to fix it. For example, if the error states that the message was blocked due to a potential virus or because the message was too large, try sending the message again without attachments.

If you're not able to fix the problem, it's likely that only the recipient's email admin can fix it. Contact the recipient by some other means (by phone, for example) and ask them to tell their email admin about the problem. Give them the "Reported Error" from the "Error Details" section below.

Was this helpful? Send feedback to Microsoft.

More Info for Email Admins

Status code: 550 5.0.350

The error reported by the receiving server wasn't specific enough to determine the exact nature of the problem. These errors often indicate the message violates a security or policy setting configured on the recipient's email servers.

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 12:55 PM
To: ehemink@apl.com
Subject: FW: EIR 7763 - Confirmation of Receipt of Online Comments - YOUR RESPONSE REQUESTED

Good afternoon,

The email address provided on the Online Comment Card for this application was ehenink@apl.com ; however, this email address did not work. I have attempted to correct it to ehemink@apl.com, to match the name you provided for your submission. If this email goes through, please respond to confirm your revised address and I will update it on our notice list.

Please note that if I do not hear back from you, no digital notices will be provided because we were not able to confirm your email.

Thank you,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
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Sent: Monday, July 6, 2020 12:08 PM
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Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

DocuSign Envelope ID: 25EB53C4-3B30-48B7-A11A-89FEEE0212F8

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

July 6, 2020

Chrissy Monfette, Planner
Fresno County Department of Public Works and Planning
2220 Tulare Street, 6th Floor
Fresno, California 93721

Subject: CEMEX Rockfield Modification Project (Project) (EIR 7763)
Notice of Preparation
State Clearinghouse No. 2020060123

Dear Ms. Monfette:

The California Department of Fish and Wildlife (CDFW) received a Notice of Preparation from the Fresno County Department of Public Works and Planning for the above-referenced Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under Fish and Game Code.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statue for all the people of the State (Fish and G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (*Id.*, § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

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CDFW is also submitting comments as a **Responsible Agency** under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required.

Nesting Birds: CDFW has jurisdiction over actions with potential to result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, their eggs and nests include, sections 3503 (regarding unlawful take, possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the take, possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird).

Fully Protected Species: CDFW has jurisdiction over fully protected species of birds, mammals, amphibians, reptiles, and fish, pursuant to Fish and Game Code sections 3511, 4700, 5050, and 5515. CDFW prohibits and cannot authorize take of any fully protected species.

In this role, CDFW is responsible for providing, as available, biological expertise during public agency environmental review efforts (e.g., CEQA), focusing specifically on project activities that have the potential to adversely affect fish and wildlife resources. CDFW provides recommendations to identify potential impacts and possible measures to avoid or reduce those impacts.

PROJECT DESCRIPTION SUMMARY

Proponent: CEMEX Construction Materials Pacific, LLC

Objective: The Project proposes a continuation and modification of its current aggregate (rock, sand, and gravel) mining and processing operations located on two properties, the Plant Site and the Quarry Site, between North Friant Road and the San Joaquin River in Fresno County.

The Plant Site operates under several Conditional Use Permits (CUP) allowing aggregate mining of the alluvial deposit; plant operations including an aggregate processing plant, a ready-mix concrete plant, a hot-mix plant and relate supportive facilities; and the processing of raw aggregate mined from CEMEX's current Quarry Site. A portable plant is brought in periodically to recycle come-back concrete (unused concrete in mixer truck upon return to plant) into crushed miscellaneous base (CMB).

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Aggregate from the alluvial deposit has been partially mined from portions of the Plant Site.

At the Quarry Site, aggregate mining of the alluvial deposit has been permitted under several CUPs. Since there are no plant operations permitted at the Quarry Site, the CUPs allow the interplant haul of approximately 1.4 million tons per year of raw aggregate to the Plant Site for processing.

The Project would occur in two stages:

- Stage 1 would continue concurrent operations at both the Quarry Site and Plant Site for up to 30 years. At the Plant Site, the existing aggregate processing plant would continue to be used to wash, screen, and sort aggregate mined from the Plant Site. The existing ready-mix concrete plant would continue to operate and the existing inactive asphalt plant would be replaced with a modern asphalt plant. Aggregate products from the Plant Site and ready-mix concrete would continue to be sold to customers and asphalt sales would resume. Periodic use of a portable crushing plant to recycle come-back concrete would continue with the addition of asphalt recycling and the import of concrete debris to recycle into CMB and asphalt debris to be recycled asphalt product (RAP). The remaining alluvial deposit would be mined to a depth of approximately 85 feet below ground surface (bgs). The ready-mix concrete plant and the hot-mix asphalt plant may be relocated from the Plant Site to the Quarry Site in less than 30 years in order to recover the remaining alluvial deposit under the plants. Upon completion of mining at the Plant Site, operations at the Plant Site would cease, all equipment would be removed and the site reclaimed as 122 acres of open space, riparian and open water wildlife habitat.

  At the Quarry Site, mining would be modified to include the hard rock (granite) that lies beneath the alluvial deposit currently being mined. Mining of the hard rock would require drilling and blasting and would occur to a depth of approximately 600 feet bgs. An aggregate processing plant would be added to the Quarry Site to wash, screen, crush and sort the aggregate. A portable aggregate processing plant for the asphalt and ready-mix plants would be transported approximately 2 miles south to the Plant Site via an interplant haul on Friant Road. Other aggregate products produced at the Quarry Site not used by the asphalt and ready-mix plants at the Plant Site (e.g. road base, various-sized crushed rock, sand, etc.) would be sold directly from the quarry.

- Stage 2 would continue hard rock mining and processing operations only at the Quarry Site for approximately 70 more years. The ready-mix concrete plant and the hot-mix asphalt plant would be relocated from the Plant Site to the Quarry Site. The periodic use of a portable plant to recycle concrete and asphalt debris

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(including imported) into CMB and RAP would be added to the Quarry Site. Upon completion of mining at the Quarry Site, operations at the Quarry Site would cease and all equipment would be removed. Reclamation of the Quarry Site would create approximately 349 acres of open space, riparian, and open water wildlife habitat.

Location:
Plant Site: The Plant Site is located on approximately 122 acres on the west side of North Friant Road (APNs 300-070-56S, 57S, 58S, 59S, and 60S), approximately 1.5 miles north of the City of Fresno and approximately 0.7 miles north of the intersection of North Willow Avenue and North Friant Road (including portions of Section 36 of T11N/R21E MDB&M).

Quarry Site: The Quarry Site is located on approximately 349 acres on the west side of North Friant Road (APNs 300-040-19 and 20, 300-080-01S, 300-250-12 and portion of 300-310-01) approximately 2.0 miles north of CEMEX's current Plant Site and approximately 2.0 miles south of the town of Friant (including portions of Sections 24 and 25 of T11N/R20E MDB&M and Sections 19 and 30 of T11N/R21E MDB&M).

Timeframe: The total Project life of the combined Stages 1 and 2 is estimated to be up to 100 years.

COMMENTS AND RECOMMENDATIONS

CDFW offers the following comments and recommendations to assist Fresno County Department of Public Works and Planning in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the document.

Currently, an Environmental Impact Report (EIR) is being prepared to determine the likely environmental impacts associated with the Project's expansion of use. CDFW is concerned regarding adequacy of mitigation measures for special-status species including, but not limited to, the State threatened Swainson's hawk (*Buteo swainsoni*), the State and federally threatened California tiger salamander (*Ambystoma californiense*), the State candidate endangered tricolored blackbird (*Agelaius tricolor*), the State fully protected white-tailed kite (*Elanus leucurus*), the State endangered and fully protected bald eagle (*Haliaeetus leucocephalus*), the following species of special concern burrowing owl (*Athene cunicularia*), and western pond turtle (*Actinemys marmorata*). In addition, CDFW is concerned regarding adequacy of mitigation measures for Project activities which are subject to CDFW's lake and streambed alteration regulatory authority.

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I. Environmental Setting and Related Impact

Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status-species in local or regional plans, policies, or regulations, or by CDFW or the United States Fish and Wildlife Service (USFWS)?

COMMENT 1: Swainson's Hawk (SWHA)

Issue: SWHA have the potential to nest adjacent to or near the Project site. The proposed Project will involve activities near large trees that may serve as potential nest sites.

Specific impacts: Without appropriate avoidance and minimization measures for SWHA, potential significant impacts that may result from Project activities include nest abandonment, loss of nest trees, loss of foraging habitat that would reduce nesting success (loss or reduced health or vigor of eggs or young), and direct mortality. Any take of SWHA without appropriate incidental take authorization would be a violation of Fish and Game Code.

Evidence impact is potentially significant: SWHA exhibit high nest-site fidelity year after year and lack of suitable nesting habitat in the San Joaquin Valley limits their local distribution and abundance (CDFW 2016). The Project as proposed will involve noise, groundwork, and movement of workers that could affect nests and has the potential to result in nest abandonment, significantly impacting local nesting SWHA.

Recommended Potentially Feasible Mitigation Measure(s)
Because suitable habitat for SWHA is present adjacent to the Project site, CDFW recommends conducting the following evaluation of the Project site and that the following mitigation measures be made conditions of approval for the Project.

Recommended Mitigation Measure 1: SWHA Surveys

To evaluate potential impacts, CDFW recommends that a qualified wildlife biologist conduct surveys for nesting SWHA following the survey methods developed by the Swainson's Hawk Technical Advisory Committee (SWHA TAC, 2000) prior to project implementation. The survey protocol includes early season surveys to assist the project proponent in implementing necessary avoidance and minimization measures, and in identifying active nest sites prior to initiating ground-disturbing activities.

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Recommended Mitigation Measure 2: No-disturbance Buffer

If ground-disturbing Project activities are to take place during the normal bird breeding season (March 1 through September 15), CDFW recommends that additional pre-activity surveys for active nests be conducted by a qualified biologist no more than 10 days prior to the start of Project implementation. CDFW recommends a minimum no-disturbance buffer of ½-mile be delineated around active nests until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.

Recommended Mitigation Measure 3: SWHA Take Authorization

CDFW recommends that in the event an active SWHA nest is detected during surveys and the ½-mile no-disturbance buffer around the nest cannot feasibly be implemented, consultation with CDFW is warranted to discuss how to implement the project and avoid take. If take cannot be avoided, take authorization through the acquisition of an Incidental Take Permit (ITP), pursuant to Fish and Game Code section 2081(b) is warranted to comply with CESA.

COMMENT 2: California Tiger Salamander (CTS)

Issue: CTS are known to occur in the Project vicinity (CDFW 2020). Excavation of any small mammal burrow within the Project site could result in take of CTS through capture, crushing as a result of burrow collapse, entombment, etc. Please be advised that any take that occurs without prior acquisition of an Incidental Take Permit (ITP) (pursuant to Fish and Game Code section 2081(b)) from CDFW would result in a violation of CESA.

Specific Impacts: Aerial photos show that the proposed Project site is within the vicinity of both upland and breeding habitat. Due to the proposed ground-disturbing activities, potential Project-related impacts include collapse of small mammal burrows, inadvertent entrapment, direct mortality of individuals, and displacement due to sound or vibration.

Evidence impact would be significant: Up to 75% of historic CTS habitat has been lost to development (Searcy et al. 2013). Loss, degradation, and fragmentation of habitat are the primary threats to CTS. Contaminants and vehicle strikes are also sources of mortality for the species (CDFW 2015a, USFWS 2017). The Project site is within the range of CTS and is adjacent to suitable habitat (i.e., aquatic breeding habitat, grasslands interspersed with burrows). CTS have been determined to be physiologically capable of dispersing up to approximately 1.5 miles from seasonally flooded wetlands (Searcy and Shaffer 2011) and have the potential to occur near the Project site (CDFW 2020). Given the presence of suitable habitat adjacent to the

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Project site, Project activities have the potential to significantly impact local populations of CTS.

Recommended Potentially Feasible Mitigation Measure(s)
Because suitable habitat for CTS is present near the Project site and CTS has been documented adjacent to the Project site, CDFW recommends conducting the following evaluation of the Project site and that the following mitigation measures be made conditions of approval for the Project.

Recommended Mitigation Measure 4: Focused CTS Protocol-level Surveys

CTS are known to occur adjacent to the Project site (CDFW 2020). Therefore, protocol-level surveys are advised to be conducted in accordance with the USFWS' Interim Guidance document (USFWS 2003). CDFW advises that the survey include a 100-foot buffer around the Project area in all areas of wetland and upland habitat that could support CTS. CDFW recommends that survey findings be submitted for review. In order for a negative finding for CTS to be accepted, CDFW must make a determination on whether there has been sufficient rainfall to accept negative finding results. In addition, acceptance of a negative finding for CTS requires protocol-level surveys for two consecutive wet seasons.

Recommended Mitigation Measure 5: CTS Avoidance

CDFW recommends that a minimum 50-foot no-disturbance buffer be delineated around all small mammal burrows within and/or adjacent to the Project construction footprint and occupied breeding pools within and/or adjacent to the Project site footprint. CDFW also recommends avoiding any impacts that could alter the hydrology or result in sedimentation of breeding pools. If avoidance is not feasible, consultation with CDFW is warranted to determine if the Project can avoid take.

Recommended Mitigation Measure 6: CTS Take Authorization

If through surveys it is determined that CTS are occupying or have the potential to occupy the Project site and take cannot be avoided, acquisition of take authorization would be warranted prior to initiating ground-disturbing activities. Take authorization would occur through issuance of an ITP by CDFW, pursuant to Fish and Game Code section 2081(b). Alternatively, in the absence of protocol surveys, the applicant can assume presence of CTS within the Project site and obtain an ITP from CDFW. Due to known CTS occurrences adjacent to the Project site, CDFW recommends that an ITP will be pursued.

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COMMENT 3: Tricolored Blackbird (TRBL)

Issue: TRBL have the potential to occur near the Project site. Review of aerial imagery indicates that the Project site is near dense low vegetation fields that may serve as nest colony sites.

Specific impact: Without appropriate avoidance and minimization measures for TRBL, potential significant impacts include nest and/or colony abandonment, reduced reproductive success, and reduced health and vigor of eggs and/or young.

Evidence impact would be significant: TRBL aggregate and nest colonially, forming colonies of up to 100,000 nests (Meese et al. 2014). Approximately 86% of the global population is found in the San Joaquin Valley (Kelsey 2008, Weintraub et al. 2016). Increasingly, TRBL are forming larger colonies that contain progressively larger proportions of the species' total population (Kelsey 2008). In 2008, for example, 55% of the species' global population nested in only two colonies, which were located in silage fields (Kelsey 2008). In 2017, approximately 30,000 TRBL were distributed among only 16 colonies in Merced County (Meese 2017). Nesting can occur synchronously, with all eggs laid within one week (Orians 1961). For these reasons, depending on timing, disturbance to nesting colonies can cause abandonment, significantly impacting TRBL populations (Meese et al. 2014).

Recommended Potentially Feasible Mitigation Measure(s)
To evaluate potential Project-related impacts to TRBL, CDFW recommends conducting the following evaluation of the Project site and that the following mitigation measures be made conditions of approval for the Project.

Recommended Mitigation Measure 7: TRBL Habitat Assessment

CDFW recommends that a qualified biologist conduct a habitat assessment adjacent to the Project site in advance of Project implementation, to determine if the Project site or its vicinity contains suitable habitat for TRBL.

Recommended Mitigation Measure 8: TRBL Surveys

CDFW recommends that Project activities be timed to avoid the typical bird breeding season (February 1 through September 15). However, if Project activities must take place during that time, CDFW recommends that a qualified wildlife biologist conduct surveys for nesting TRBL, within a minimum 500-foot buffer from the Project site, no more than 10 days prior to the start of implementation to evaluate presence/absence of TRBL nesting colonies in proximity to Project activities and to evaluate potential Project-related impacts.

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Recommended Mitigation Measure 9: TRBL Avoidance

If an active TRBL nesting colony is found during pre-activity surveys, CDFW recommends implementation of a minimum 300-foot no-disturbance buffer in accordance with CDFW's "Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agricultural Fields in 2015" (CDFW 2015b). CDFW advises that this buffer remain in place until the breeding season has ended or until a qualified biologist has determined that nesting has ceased, the birds have fledged, and are no longer reliant upon the colony or parental care for survival. It is important to note that TRBL colonies can expand over time and for this reason, the colony may need to be reassessed to determine the extent of the breeding colony within 10 days prior to Project initiation.

Recommended Mitigation Measure 10: TRBL Take Authorization

In the event that a TRBL nesting colony is detected during surveys, consultation with CDFW is warranted to discuss how to implement the Project and avoid take, or if avoidance is not feasible, to acquire an ITP, pursuant to Fish and Game Code Section 2081(b), prior to any ground-disturbing activities.

COMMENT 4: Fully Protected Raptors

Issue: The State fully protected white-tailed kite and the State endangered and fully protected bald eagle have the potential to nest and/or forage adjacent to the Project site. Without appropriate mitigation measures, Project activities conducted within occupied territories have the potential to significantly impact these species.

Specific Impacts: Potentially significant impacts that may result from Project activities include nest abandonment, loss of nest trees, and/or loss of foraging habitat that would reduce nesting success (loss or reduced health or vigor of eggs or young), and direct mortality.

Evidence impact would be significant: The Project will involve noise, groundwork, and movement of workers that may occur directly adjacent to large trees and other features with potential to serve as nest sites have the potential to significantly impact fully protected raptor populations.

Recommended Potentially Feasible Mitigation Measure(s)
To evaluate potential impacts to fully protected raptors, CDFW recommends conducting the following evaluation of the Project site and that the following mitigation measures be made conditions of approval for the Project.

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Recommended Mitigation Measure 11: Fully Protected Raptor Habitat Assessment

CDFW recommends that a qualified biologist conduct a habitat assessment in advance of Project implementation, to determine if the Project site or its vicinity (within ½ mile) contains suitable habitat for fully protected raptors.

Recommended Mitigation Measure 12: Fully Protected Raptor Surveys

CDFW recommends that focused surveys be conducted by experienced biologists at the Project site prior to Project implementation. To avoid impacts to these species, CDFW recommends conducting these surveys in accordance with protocols developed by CDFW (CDFG 2010). If Project activities are to take place during the typical bird breeding season (February 1 through September 15), CDFW recommends that additional pre-activity surveys for active nests be conducted by a qualified biologist no more than 10 days prior to the start of Project activity.

Recommended Mitigation Measure 13: Fully Protected Raptor Avoidance

In the event a fully protected raptor species is found within ½ mile of the Project site, implementation of avoidance measures is warranted. CDFW recommends that a qualified wildlife biologist be on-site during all Project-related activities and that a ½-mile no-disturbance buffer be implemented. If the ½-mile no-disturbance buffer cannot feasibly be implemented, contacting CDFW for assistance with additional avoidance measures is recommended. Fully addressing potential impacts to fully protected raptor species and requiring measurable and enforceable mitigation in the EIR is recommended.

COMMENT 5: Burrowing Owl (BUOW)

Issue: BUOW may occur near the Project site (CDFW 2020). BUOW inhabit open grassland or adjacent canal banks, ROWs, vacant lots, etc., containing small mammal burrows, a requisite habitat feature used by BUOW for nesting and cover. Habitat adjacent to the Project site supports grassland habitat.

Specific impact: Potentially significant direct impacts associated with subsequent activities and development include burrow collapse, inadvertent entrapment, nest abandonment, reduced reproductive success, reduction in health and vigor of eggs and/or young, and direct mortality of individuals.

Evidence impact is potentially significant: BUOW rely on burrow habitat year-round for their survival and reproduction. Habitat loss and degradation are considered the greatest threats to BUOW in California's Central Valley (Gervais et al. 2008). The Project site contains and is bordered by some of the only remaining

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undeveloped land in the vicinity, which is otherwise intensively managed for agriculture or housing developments. Therefore, subsequent ground-disturbing activities associated with Project approval have the potential to significantly impact local BUOW populations. In addition, and as described in CDFW's "Staff Report on Burrowing Owl Mitigation" (CDFG 2012), excluding and/or evicting BUOW from their burrows is considered a potentially significant impact under CEQA.

Recommended Potentially Feasible Mitigation Measure(s)

To evaluate potential impacts to BUOW, CDFW recommends conducting the following evaluation of the Project site and that the following mitigation measures be made conditions of approval for the Project.

Recommended Mitigation Measure 14: BUOW Surveys

CDFW recommends assessing presence/absence of BUOW by having a qualified biologist conduct surveys following the California Burrowing Owl Consortium's (CBOC) "Burrowing Owl Survey Protocol and Mitigation Guidelines" (CBOC 1993) and CDFW's "Staff Report on Burrowing Owl Mitigation" (CDFG 2012). Specifically, CBOC and CDFW's Staff Report suggest three or more surveillance surveys conducted during daylight with each visit occurring at least three weeks apart during the peak breeding season (April 15 to July 15), when BUOW are most detectable.

Recommended Mitigation Measure 15: BUOW Avoidance

CDFW recommends no-disturbance buffers, as outlined in the "Staff Report on Burrowing Owl Mitigation" (CDFG 2012), be implemented prior to and during any ground-disturbing activities. Specifically, CDFW's Staff Report recommends that impacts to occupied burrows be avoided in accordance with the following table unless a qualified biologist approved by CDFW verifies through non-invasive methods that either: 1) the birds have not begun egg laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting sites	April 1-Aug 15	200 m*	500 m	500 m
Nesting sites	Aug 16-Oct 15	200 m	200 m	500 m
Nesting sites	Oct 16-Mar 31	50 m	100 m	500 m

* meters (m)

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Recommended Mitigation Measure 16: BUOW Passive Relocation and Mitigation

If BUOW are found within these recommended buffers and avoidance is not possible, it is important to note that according to the Staff Report (CDFG 2012), exclusion is not a take avoidance, minimization, or mitigation method and is considered a potentially significant impact under CEQA. However, if necessary, CDFW recommends that burrow exclusion be conducted by qualified biologists and only during the non-breeding season, before breeding behavior is exhibited and after the burrow is confirmed empty through non-invasive methods, such as surveillance. CDFW recommends replacement of occupied burrows with artificial burrows at a ratio of one burrow collapsed to one artificial burrow constructed (1:1) as mitigation for the potentially significant impact of evicting BUOW. BUOW may attempt to colonize or re-colonize an area that will be impacted; thus, CDFW recommends ongoing surveillance, at a rate that is sufficient to detect BUOW if they return.

COMMENT 6: Western Pond Turtle (WPT)

Issue: WPT have the potential to occur adjacent to the Project site. WPT are known to nest in the spring or early summer within 100 meters of a water body, although nest sites as far away as 500 meter have also been reported (Thomson et al. 2016).

Specific impact: Without appropriate avoidance and minimization measures for WPT, potentially significant impacts associated with Project activities could include nest reduction, inadvertent entrapment, reduced reproductive success, reduction in health or vigor of eggs and/or young, and direct mortality.

Evidence impact is potentially significant: The Project involves ground-disturbing activities adjacent to the San Joaquin River. Additionally, noise, vegetation removal, movement of workers, and ground disturbance as a result of Project activities have the potential to significantly impact WPT populations.

Recommended Potentially Feasible Mitigation Measure(s)
To evaluate potential impacts to WPT, CDFW recommends conducting the following evaluation of the Project site and that the following mitigation measures be made conditions of approval for the Project.

Recommended Mitigation Measure 17: WPT Surveys

CDFW recommends that a qualified biologist conduct focused surveys for WPT no more than ten days prior to Project implementation. In addition, CDFW recommends that focused surveys for nests occur during the egg-laying season (March through

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August) and that any nests discovered remain undisturbed until the eggs have hatched.

Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS?

COMMENT 7: San Joaquin River and Riparian Impacts

Issue: The Project involves work activities, including blasting, adjacent to the San Joaquin River and other waterways that may feed into it. These activities have the potential to remove riparian habitat, impact Chinook salmon, and disrupt San Joaquin river hydrology.

Specific impact: Potential direct impacts to riparian vegetation include removal either prior to or during blasting and/or construction activity or change subsurface flows between the San Joaquin River and the Project site and alter the hydrology of the river, adjacent floodplain areas, and nearby tributaries. Indirect impacts could occur as a result of blasted material becoming projectiles that hit riparian vegetative features causing breakage or other damage, or by fine materials and dust settling on riparian vegetation. Sound or vibration from blasting activities have the potential to disturb or displace fish and wildlife species relying on the San Joaquin River and its associated riparian habitat.

Evidence impact is potentially significant:
Riparian and associated floodplain and wetland areas along the San Joaquin River and its tributaries are valuable for their ecosystem processes such as protecting water quality by filtering pollutants and transforming nutrients; stabilizing stream banks to prevent erosion and sedimentation/siltation; and dissipating flow energy during flood conditions, thereby spreading the volume of surface water, reducing peak flows downstream, and increasing the duration of low flows by slowly releasing stored water into the channel through subsurface flow. The river and riparian vegetation in the Project area provide potential habitat for many species, including those with special status. In addition, dust creation from Project activities could settle on plant material in riparian habitats on site or off site and affect processes such as respiration, photosynthesis, pollination, and seed set.

Recommended Potentially Feasible Mitigation Measure(s)
CDFW recommend implementing the following mitigation measures.

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Recommended Mitigation Measure 18: Riparian Habitat Assessment

CDFW recommends that the riparian habitats of the San Joaquin River and any offsite streams potentially impacted by the Project, including habitat within the blasting radii, be described to establish the baseline condition. CDFW also recommends that the potential direct and indirect impacts to riparian habitat be analyzed according to each Project activity.

Recommended Mitigation Measure 19: Geology Habitat

CDFW recommends that a qualified engineering geologist evaluate the geology at and surrounding the Project site and the subsurface flow between the Project site, the San Joaquin River, and any tributaries be analyzed, quantified, and fully discussed to establish the baseline conditions. CDFW also recommends that the potential direct and indirect impacts to the geology and subsurface flow between the Project site and the San Joaquin River and its tributaries be analyzed according to each Project activity. CDFW recommends that related direct and indirect impacts to fish and wildlife species as result of any changes also be analyzed according to each Project activity.

Recommended Mitigation Measure 20: Riparian Vegetation Avoidance and Replacement

If Project activities will occur in the riparian environment, CDFW recommends avoidance of tree and shrub removal whenever possible. If Project activities cannot avoid the riparian environment, CDFW recommends preparation of a revegetation plan that incorporates native tree and shrub plantings within the San Joaquin River Restoration Area to replace removed vegetation.

COMMENT 8: Spring- and Fall-Run Chinook Salmon

Issue: Activities such as vegetation removal within the riparian zone, landscaping, access roads, etc., could impact the San Joaquin River and adjacent riparian habitat, especially in areas that are seasonally flooded away from the main stem of the river. These floodplain areas provide seasonal habitat for rearing and holding of juvenile spring- and fall-run Chinook salmon and are potential breeding habitat for spring- and fall-run Chinook salmon.

Specific impact: Without appropriate avoidance and minimization measures, potential impacts to Chinook salmon include disrupted spawning behavior, reduced reproductive success, and inability to reproduce.

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Evidence impact would be significant: The Project area contains a part of the San Joaquin River; ground-disturbing activities or in-water work have the potential to impact salmon. Spring-run Chinook salmon are believed to have been the more abundant run and once spawned as high in the watershed as Mammoth Pool, the San Joaquin River represents the southernmost extent of the spring-run Chinook salmon geographic range and was once the largest such population in California (SJRRP 2018).

Recommended Potentially Feasible Mitigation Measure(s)
To evaluate potential impacts to Chinook salmon associated with the Project, CDFW recommends conducting the following evaluation of Project sites, incorporating the following mitigation measures for this Project, and that these measures be made conditions of approval for the Project.

Recommended Mitigation Measure 21: Chinook Salmon Habitat Avoidance

CDFW recommends Project activities avoid work in water and floodplains whenever possible, conduct Project activities during less critical times of the year (late June through August), and avoid spawning riffles or holding pools.

Recommended Mitigation Measure 22: Chinook Salmon Habitat Mitigation

If Project activities will occur in the Floodplain, CDFW advises consultation with us to determine how to minimize and mitigate impacts to juvenile salmon utilization.

COMMENT 9: Impacts to Adjacent State Protected Lands

Issue: The Willow Unit of CDFW's San Joaquin River Ecological Reserve (SJRER) surrounds the current Cemex batch plant on three sides (the fourth side being Friant Road). The Willow Unit was acquired with State Bond Funds, for the intended purpose of perpetual protection of riparian habitat and associated wildlife. The Willow Unit supports high quality riparian habitat for both nesting and migratory bird species. While the existing batch plant was present at the time of CDFW's acquisition of the Willow Unit, the proposed Project will result in significant impacts (noise, traffic, hydrology, etc.) beyond baseline conditions. We are concerned with potential Project-related impacts to riparian habitat and associated wildlife on these adjacent properties, specifically impacts associated with noise, traffic, and blasting. In addition, deep mining activities could severely impact the underlying hydrology on which the San Joaquin River riparian vegetation depends. We recommend that the DEIR prepared for the project evaluate these specific impacts and include appropriate avoidance, minimization, and mitigation measures.

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Lastly, a portion of the existing batch plant impact acreage is on property owned by the State of California (both CDFW and the San Joaquin River Conservancy). This encroachment outside of lands now owned by Cemex was a condition present at the time of CDFW's acquisition of the Willow Unit from the Ball Family. However, the condition was to be remedied within a certain timeframe of purchase but the intended retraction and restoration of the State-owned acreage never occurred. Cemex and CDFW have had preliminary discussions about this issue, which could be resolved with a property exchange and parcel boundary adjustment, but final resolution will be needed prior to any expanded activities at the batch plant.

II. Editorial Comments and/or Suggestions

Lake or Streambed Alteration: The Project contains activities that may result in the Project site being subject to CDFW's regulatory authority pursuant Fish and Game Code section 1600 et seq. Fish and Game Code section 1602 requires an entity to notify CDFW prior to commencing any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake; or (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. "Any river, stream, or lake" includes those that are ephemeral or intermittent, such as the unnamed stream within the Project site, as well as those that are perennial in nature.

For additional information on notification requirements, please contact our staff in the Lake and Streambed Alteration Program at (559) 243-4593. It is important to note, CDFW is required to comply with CEQA, as a Responsible Agency, when issuing a Lake or Streambed Alteration Agreement (LSAA). If inadequate, or no environmental review, has occurred, for the Project activities that are subject to notification under Fish and Game Code section 1602, CDFW will not be able to issue the Final LSAA until CEQA analysis for the project is complete. This may lead to considerable Project delays.

Nesting Birds: The Project is adjacent to habitat that provide nesting habitat for birds. CDFW encourages that Project implementation occur during the bird non-nesting season. However, if ground-disturbing or vegetation-disturbing activities must occur during the breeding season (February through mid-September), the Project applicant is responsible for ensuring that implementation of the Project does not result in violation of the Migratory Bird Treaty Act or relevant Fish and Game Codes as referenced above.

To evaluate Project-related impacts on nesting birds, CDFW recommends that a qualified wildlife biologist conduct pre-activity surveys for active nests no more than 10 days prior to the start of ground or vegetation disturbance to maximize the probability that nests that could potentially be impacted are detected. CDFW also recommends that surveys cover a sufficient area around the Project site to identify nests and determine

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their status. A sufficient area means any area potentially affected by the Project. Prior to initiation of Project activities, CDFW recommends that a qualified biologist conduct a survey to establish a behavioral baseline of all identified nests. Once Project activities begins, CDFW recommends having a qualified biologist continuously monitor nests to detect behavioral changes resulting from the Project. If behavioral changes occur, CDFW recommends halting the work causing that change and consulting with CDFW for additional avoidance and minimization measures.

If continuous monitoring of identified nests by a qualified wildlife biologist is not feasible, CDFW recommends a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors. These buffers are advised to remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or on-site parental care for survival. Variance from these no-disturbance buffers is possible when there is compelling biological or ecological reason to do so, such as when the Project site would be concealed from a nest site by topography. CDFW recommends that a qualified wildlife biologist advise and support any variance from these buffers and notify CDFW in advance of implementing a variance.

Federally Listed Species: CDFW recommends consulting with the USFWS on potential impacts to federally listed species including, but not limited to, California tiger salamander. Take under the Federal Endangered Species Act (FESA) is more broadly defined than CESA; take under FESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Consultation with the USFWS in order to comply with FESA is advised well in advance of any ground-disturbing activities.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special status species and natural communities detected during Project surveys to CNDDB. The CNDDB field survey form can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data. The completed form can be mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

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FILING FEES

If it is determined that the Project has the potential to impact biological resources, an assessment of filing fees will be necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089).

CDFW appreciates the opportunity to comment on the Project to assist Fresno County Department of Public Works and Planning in identifying and mitigating the Project's impacts on biological resources.

More information on survey and monitoring protocols for sensitive species can be found at CDFW's website (https://www.wildlife.ca.gov/Conservation/Survey-Protocols). If you have any questions, please contact Kelley Nelson, Environmental Scientist, at the address provided on this letterhead, or by electronic mail at Kelley.Nelson@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Julie Vance
FA83F09FE08945A...

Julie A. Vance
Regional Manager

cc: Regional Water Quality Control Board
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John Shelton (john.shelton@sjrc.ca.gov)
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Attachment 1

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
RECOMMENDED MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

PROJECT: CEMEX Rockfield Modification Project (EIR 7763)

SCH No.: 2020060123

RECOMMENDED MITIGATION MEASURE	STATUS/DATE/INITIALS
Before Disturbing Soil or Vegetation	
Mitigation Measure 1: SWHA Surveys	
Mitigation Measure 3: SWHA Take Authorization	
Mitigation Measure 4: Focused CTS Protocol Surveys	
Mitigation Measure 5: CTS Avoidance	
Mitigation Measure 6: CTS Take Authorization	
Mitigation Measure 7: TRBL Habitat Assessment	
Mitigation Measure 8: TRBL Surveys	
Mitigation Measure 9: TRBL Avoidance	
Mitigation Measure 10: TRBL Take Authorization	
Mitigation Measure 11: Fully Protected Raptor Habitat Assessment	
Mitigation Measure 12: Fully Protected Raptor Surveys	
Mitigation Measure 14: BUOW Surveys	
Mitigation Measure 15: BUOW Avoidance	
Mitigation Measure 16: BUOW Passive Relocation and Mitigation	
Mitigation Measure 17: WPT Surveys	
Mitigation Measure 18: Riparian Habitat Assessment	
Mitigation Measure 19: Geology Habitat	
Mitigation Measure 21: Chinook Salmon Habitat Avoidance	
Mitigation Measure 22: Chinook Salmon Habitat Mitigation	
During Construction	
Mitigation Measure 2: SWHA No-disturbance Buffer	
Mitigation Measure 13: Fully Protected Raptor Avoidance	
Mitigation Measure 20: Riparian Vegetation Avoidance and Replacement	

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Water Boards

GAVIN NEWSOM
GOVERNOR

JARED BLUMENFELD
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

3 July 2020

Christina Monfette
County of Fresno, Department of Public Works and Planning
2220 Tulare Street, Sixth Floor
Fresno, California 93271

CEMEX CONSTRUCTION MATERIALS PACIFIC, LLC; ROCKFIELD QUARRY MODIFICATION PROJECT ENVIRONMENTAL IMPACT REPORT NO. 7763 AND UNCLASSIFIED CONDITIONAL USE PERMIT APPLICATION NOS. 3666 AND 3667; FRESNO COUNTY

Central Valley Water Board staff has reviewed the Notice of Preparation (NOP) for the proposed Rockfield Quarry Modification Project (Project) (SCH # 2020060123). CEMEX Construction Materials Pacific, LLC (CEMEX) is proposing to expand its current aggregate (rock, sand, and gravel) mining and processing operations at the CEMEX Friant Plant (Plant). According to the NOP, the County of Fresno (County) will be the lead agency and will prepare an Environmental Impact Report (EIR) for the proposed project. A summary of our comments is provided below. The Central Valley Water Board is responsible for protecting water quality; therefore, our comments specially address water quality matters.

The NOP proposes changes to the Plant (CUP 3666) and the Quarry (CUP 3667) in two stages. During Stage One, CEMEX proposes to mine a hard rock deposit at the Quarry. The mining (via drilling and blasting) will occur at a depth of approximately 600 feet. An aggregate processing plant will also be added to the Quarry to wash, screen, crush, and sort the mined hard rock. At the Plant, the existing asphalt plant will be replaced with a hot-mix asphalt plant. Stage One is estimated to span 30 years and increase annual aggregate production from the current 1.4 million tons per year to eventually 3.0 million tons per year. Stage Two is proposed to span 70 years. During stage 2 aggregate production will continue to be 3.0 million tons per year. Also, during Stage Two, processing operations will only continue at the Quarry Site and the ready-mix concrete plant and hot-mix asphalt plant will be relocated to the Quarry Site.

The EIR for the Project should include a description of all solid and/or liquid waste that might be generated by the proposed project and how it will be handle, treated, and dispose of. Furthermore, the final EIR also needs to evaluate potential impacts to groundwater water and surface water associated with the Project. The following sections discuss various programs/requirements that may be applicable to the Project.

Waste Discharge Requirements (WDRs)

The discharge of process/wash water to land is subject to regulation under individual WDRs. WDRs Order 90-083 currently regulates the discharge of 1.5 million gallons per day of wash water generated by the washing/processing of sand and gravel at the Plant. Due to the proposed changes to the Plant and Quarry discussed in the NOP, WDRs Order 90-083 needs to be updated to reflect the proposed changes at the Plant and Quarry and ensure the discharge is consistent with Central Valley Water Board plans and policies.

In accordance with California Water Code section 13260, CEMEX is required to submit a Report of Waste Discharge (RWD) to apply for updated WDRs. The RWD must be submitted to the Central Valley Water Board at least 140 days prior to any discharge of wastewater from the project pursuant to California Water Code section 13264. The RWD needs to, at a minimum, include the following:

1) A Form 200 signed and certified by a duly authorized person at CEMEX;
2) A technical report that describes the treatment process and characterizes the wastewater discharge.

A technical report accompanying the RWD must be prepared and certified by a person registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. A guidance document for applying for individual waste discharge requirements is attached to this letter.

Construction Storm Water General Permit

Dischargers whose project disturbs one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website (https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html).

Industrial Storm Water General Permit

Certain industries that discharge storm water to waters of the United States require coverage under a federally mandated permit. In California, the applicable permit is the Industrial Storm Water General Permit Order 2014-0057-DWQ. For more information on the Industrial Storm Water General Permit, visit the State Water Resources Control Board website (https://www.waterboards.ca.gov/water_issues/programs/stormwater/industrial.html).

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material to waters of the United States, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water alterations, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit, or any other federal permit, is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. Water Quality Certification must be obtained prior to initiation of project activities. Water Quality Certification information can be obtained by going to the State Water Resource Control Board Water Quality Certification and Wetlands Program website.

Salt and Nitrate Control Programs

As part of the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative, the Central Valley Water Board adopted Basin Plan amendments (Resolution R5-2018-0034) incorporating new programs for addressing ongoing salt and nitrate accumulation in the Central Valley at its 31 May 2018 Board Meeting. On 16 October 2019, the State Water Resources Control Board adopted Resolution 2019-0057 approving the Central Valley Water Board Basin Plan amendments and also directed the Central Valley Water Board to make targeted revisions to the Basin Plan amendments within one year from the approval of the Basin Plan amendments by the Office of Administrative Law. The Office of Administrative Law approved the Basin Plan amendments on 15 January 2020 (OAL Matter No. 2019-1203-03).

Pursuant to the Basin Plan amendments, discharges will receive a Notice to Comply with instructions and obligations for the Salt Control Program within one year of the effective date of the amendments. Upon receipt of the Notice to Comply, the Discharger will have no more than six months to submit their Notice of Intent informing the Central Valley Water Board of their choice between Option 1 (Conservative Salinity Permitting Approach) or Option 2 (Alternative Salinity Permitting Approach). For the Nitrate Control Program, the Project is within Groundwater Basin 5-22.06 (San Joaquin Valley – Madera), a Priority 2 basin/sub-basin.

More information on the Salt and Nitrate Control Program may be found on the internet (https://www.cvsalinity.org/public-info).

If you have any questions regarding this matter, please contact Denise Soria by phone at (559) 444-2488, by email at dsoria@waterboards.ca.gov.

ALEXANDER S. MUSHEGAN
Senior Engineer

Enclosure:
- Technical Information for a Report of Waste Discharge for Discharges to Land in the WDRs (Non 15) Program

TECHNICAL INFORMATION
FOR A REPORT OF WASTE DISCHARGE

For

Discharges to Land in the WDR (Non 15[1]) Program (Individual WDRs Only)

This document provides guidance for applying for individual waste discharge requirements only. If you believe that your discharge would be appropriately regulated under general waste discharge requirements or general waiver, please see the links below and contact Central Valley Water Board staff for guidance.

General WDRs: http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/#General
Waivers: http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/#Waivers

What is a Report of Waste Discharge?
A Report of Waste Discharge (ROWD) is an application for waste discharge requirements. A ROWD consists of the following:

1. A completed and signed Form 200, which can be down loaded from the internet at http://www.waterboards.ca.gov/publications_forms/forms/docs/form200.pdf.
2. A technical report prepared by a California registered Civil Engineer that presents the information listed in the table below.
3. For a new or previously unpermitted discharges, a check for the first annual fee made payable to the *State Water Resources Control Board*. Consult with staff to determine the required fee. There is no fee if you are applying for revised or updated WDRs because you are already subject to an annual permit fee. The current fee schedule can be viewed at the following link: http://www.waterboards.ca.gov/resources/fees/index.shtml#wdr

Compliance with the California Environmental Quality Act (CEQA)
Although not required as part of the ROWD, for new, previously unpermitted, or expanding/changing discharges, you must also submit a copy of any draft and final environmental review documents prepared to comply with the California Environmental Quality Act (CEQA).

If the local planning agency (city or county, as applicable) or another public agency has determined that the project (or expansion, changes, etc.) does not require any discretionary action by that agency, the Central Valley Water Board may be the lead agency for the purposes of CEQA, and you will be required to submit an Initial Study and pay all fees and other costs associated with the CEQA process unless the Board determines that the action falls within the scope of a categorical or statutory exemption. Fees associated with the filing of an Initial Study may include a California Department of Fish and Game fee, County Clerk recording fees, and costs for publishing the CEQA Notice of Intent in a local newspaper. Consult with your local planning agency and Central Valley Water Board staff if you

[1] The Non 15 Program regulates discharges to land that are exempt from Title 27 of the California Code of Regulations. See the following link for a brief explanation of Title 27 and exemptions that may be used: http://www.waterboards.ca.gov/water_issues/programs/land_disposal/waste_discharge_requirements.shtml

have any questions about CEQA. Additional information about CEQA is also available at the following link: http://opr.ca.gov/m_cega.php.

What is Required for the ROWD Technical Report?
Please note the following tips to expedite the ROWD review and waste discharge requirements development:

- Providing the information in the same order as the list below will help to expedite the ROWD review. Staff will use this as a checklist.
- If any of the information is missing or incomplete, the ROWD will be deemed incomplete and the process (and your project) will be delayed until all of the required information is submitted. You will be notified in writing of the ROWD status after it has been reviewed. If the ROWD is incomplete, we will specify the additional information that is required to complete the ROWD.
- All numerical data presented in tables and calculations performed using spreadsheets should be provided in digital form (MS Excel compatible spreadsheet) as well as hard copy.
- If some of the information listed below can be found in a previous technical report prepared by a registered professional, the ROWD can incorporate the report as an appendix, but the ROWD text must specify where in the report the required information can be found. However, if appended reports contain information that conflicts with the body of the ROWD, it may cause further delays.

	A. General Information
	1. Is this a new/proposed or existing facility?
	2. If this is an existing facility, is the discharge currently regulated under Waste Discharge Requirements (WDRs) issued by the Central Valley Water Board?
	a. If so, provide the WDRs order number.
	b. If not, provide the name of the local agency that issued the current permit.
	3. Provide a copy of any other permits that reference or relate to the wastewater disposal system. This includes Use Permits and Surface Mining and Reclamation Act (SMARA) reclamation plans, etc.
	4. Provide the following for the facility that generates the waste and the site where the waste is discharged:
	a. Street address (provide street name and distance from nearest cross street if there is no street number).
	b. The approximate latitude and longitude of the facility that generates the wastewater, wastewater treatment facilities, and wastewater land disposal areas.
	c. Township, Range, and Section.
	d. Assessor's parcel numbers.

	B. Wastewater Facility and Discharge Complete this section for both new/proposed facilities and existing facilities.
	1. A description of the sources and types of wastewater flowing into the system from:
	a. residential (population served and number of connections or equivalent dwelling units).
	b. commercial (number of connections by type).
	c. industrial (number of connections by type).
	2. Design influent flow rates (average daily, dry weather daily, peak hour, peak day, and peak month), and the design treatment capacity of the system with respect to each of these. For new/proposed facilities, provide the methods used to estimate these design parameters and copies of all calculations.
	3. For existing facilities, a summary table of monthly influent flow totals and monthly precipitation totals for the last five years. Explain any data gaps, outliers, and/or unusual circumstances that might affect measured flow rates. If sewer inflow and infiltration (I/I) contributes significantly to influent flow, provide an I/I analysis to project I/I as a function of total annual precipitation and/or groundwater level as appropriate.
	4. A detailed description of the facilities that generate wastewater, and all wastewater conveyance, treatment, and disposal systems. Use site plans and conceptual drawings as appropriate to illustrate locations and typical construction. Include all treatment processes. The following maps, plans, and illustrations are needed:
	a. A facility location map showing local topography, the facility location and/or boundaries, streets, and surface waters (including storm water drainage ditches, irrigation canals, and irrigation/tailwater ditches).
	b. A process flow schematic for the entire treatment and disposal system. Include existing and proposed flow monitoring devices and sampling locations proposed to determine compliance with the WDRs.
	c. A scaled treatment plant site plan.
	d. A scaled map showing the limits of all proposed wastewater treatment, storage and disposal areas.
	5. Characterization of the source water (the community or process water supply), influent wastewater quality (prior to treatment or discharge), and treated effluent quality. See Table 1 for a minimum list of constituents to be analyzed.
	6. For POTWs and domestic wastewater facilities, a description of the sewer system, sewer materials and age, and lift station details (type, location, capacity, backup systems, and alarm features). Discuss potential inflow and infiltration (I/I) rates in light of local groundwater conditions and sewer system materials/design. For industrial facilities, a description of the industrial wastewater collection and conveyance system.
	7. A description of proposed alarm systems, emergency wastewater storage facilities, and other means of preventing treatment system bypass or failure during reasonably foreseeable overload conditions (e.g., peak flows, power failure, sewer blockage). Consider both potential problems at the treatment system and within the conveyance system.

	8. Preventive and contingency measures for controlling spills and accidental discharges.
	9. Flood and frost protection measures (structural and operational) employed at the facility.
	10. For debris, grit and screenings, sludge, and biosolids the following:
	a. A description of solids generation rates, on-site treatment and handling systems, and short-term storage procedures.
	b. A description of solids disposal practices.
	c. For facilities that do not have continuous sludge wasting systems (i.e., where sludge accumulates in treatment and/or storage ponds), the frequency of assessing accumulated sludge volume, the date of the last sludge volume assessment, the date of the last sludge cleanout, and expected frequency of future sludge cleanout activities
	11. For each wastewater treatment, storage, or disposal pond and containment structure, provide the following information:
	a. Identification (name) and function of the pond.
	b. Surface area, depth, and volumetric capacity at two feet of freeboard.
	c. Height (relative to surrounding grade), crest width, interior slope, and exterior slope of each berm or levee.
	d. Materials used to construct each berm or levee.
	e. Description of engineered liner, if any. Include a copy of the Construction Quality Assurance (CQA) Report if one was prepared.
	f. Estimated steady state percolation rate for each unlined pond.
	g. Depth to shallow groundwater below the base and pond inverts.
	h. Overfilling/overflow prevention features.
	i. Operation and maintenance procedures.
	12. For subsurface disposal systems, provide the design basis and documentation demonstrating that the system has been designed in accordance with applicable regulations, codes, ordinances, and guidelines. If the design deviates from these requirements, provide justification in terms of system longevity, maintainability, and groundwater protection.
	13. If treated domestic effluent will be recycled for beneficial reuse or if wastewater will reused or land-applied[2], provide a complete description of the following:
	a. Ownership and contact information for each landowner[3].
	b. Effluent disinfection system.
	c. Effluent conveyance systems.

[2] Uses of recycled water that are limited to landscape irrigation (including golf courses) can be regulated under General WDRs issued by the State Water Board. See this webpage for more information: http://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/landscape_irrigation_general_permit.shtml.

[3] Landowners are typically named in WDRs as co-dischargers, and the WDRs may include separate requirements with which co-dischargers must comply.

	d. Water recycling/Land application areas (LAA) areas.
	e. Cropping plans.
	f. Planned operations (planting and harvest, irrigation method, irrigation frequency, irrigation amounts).
	g. Expected nutrient loadings (pounds per acre per year total nitrogen).
	h. Expected salt loadings (pounds per acre per year total dissolved solids).
	i. Tailwater management methods.
	j. Storm water runoff management methods.
	k. Setback distances from the edge of each recycling/land application area from the property boundary, public streets, occupied structures owned by others, and surface waters/surface water conveyances.
	l. Plans that illustrate items c, d, i, j, and k above
	14. If wastewater effluent will be recycled pursuant to Title 22 of the California Code of Regulations (e.g., if domestic wastewater is recycled to grow crops, irrigate landscaping, provide pasture for livestock, or for landscape or recreational impoundments, including reclamation sites owned by a POTWs, unless water is recycled solely for irrigation of landscaping at the POTW site) a Title 22 Engineering Report must be submitted to both the Central Valley Water board and California Department of Public Health[4].
	15. Projected monthly water balances demonstrating adequate containment capacity for both the average rainfall year and the 100-year return period total annual precipitation, including consideration of at least the following:
	a. For POTWs and private domestic wastewater facilities, initial baseline influent and I/I flows as well as baseline influent and I/I flows at full build out with an aging sewer system.
	b. A minimum of two feet of freeboard in each pond at all times (unless a registered civil engineer determines that a lower freeboard level will not cause overtopping or berm failure).
	c. Historical local evapotranspiration, pan evaporation, and lake evaporation data (monthly average values).
	d. Local precipitation data with the 100-year return period annual total distributed monthly in accordance with mean monthly precipitation patterns.
	e. Proposed recycling area/land application area/disposal system hydraulic loading rates distributed monthly in accordance with expected seasonal variations based on crop evapotranspiration rates.
	f. Projected long-term percolation rates (including consideration of percolation from unlined ponds and the effects of solids plugging on all ponds).
	16. Proposed flow limits and basis for the limits. Consider dry weather flows vs. peak flows and seasonal variations. Include the technical basis for the proposed flow limit (e.g., design

[4] To the extent this information is already presented in the Title 22 Engineering Report, the RWD may incorporate that report by reference. The Title 22 Engineering Report must also be submitted to the California Department of Public Health for review and approval.

	treatment capacity; hydraulic capacity of a main lift station, headworks, or other system element; and demonstrated effluent storage/disposal capacity).
	17. A narrative description of treatment system operation and maintenance procedures to be employed, including those associated with effluent storage and disposal.
	18. For POTWs, the level of operator certification and staffing; the names and grade levels of all certified operators, and the hours that the facility is manned.
	19. For privately owned domestic wastewater treatment facilities, the names and grade levels of all certified operators, and the hours that the facility is manned. If the facility does not have a certified operator, provide justification for not retaining one.
	C. Planned Changes in the Facility and Discharge (for existing facilities only)
	1. Describe in detail any and all planned changes in the facility or discharge, addressing each of items listed in Section B above.
	D. Local and Site-Specific Conditions (Illustrate with maps as appropriate)
	1. Neighboring land uses.
	2. Typical crops grown (if agricultural area).
	3. Irrigation water source(s) and volume and quality data (if agricultural area).
	4. Terrain and site drainage features.
	5. Nearest surface water drainage course.
	6. FEMA floodplain designation(s).
	7. Average Annual precipitation (inches)
	8. 100-year 365-day precipitation (inches)
	9. Reference evapotranspiration (monthly and annual total)
	10. Pan evaporation (monthly and annual total)
	11. A description of the types and depths of soil underlying ponds and/or effluent disposal areas (include a copy of the geotechnical report and/or NRCS soil report). Include at least the following:
	a. Depth of unsaturated soil when groundwater is closest to the surface.
	b. Soil types based on site-specific information, sampling locations (accurately measured and recorded), description and results of percolation tests or other tests used to estimate soil long-term infiltration rates. Include depth, thickness, and soil horizons. Soils must be described at a minimum of five feet below the bottom of any disposal unit.
	c. Bedrock type and condition encountered in disposal area, if any.
	d. A scaled map depicting soil/rock types and test locations.
	12. Provide the following information about hydrogeology and groundwater:
	a. Stratigraphy, groundwater elevation and gradient, transmissivity, and influence of all recharge and pumping sources (site conceptual model).
	b. Elevation and gradient of first groundwater at the facility
	c. Depth to highest anticipated groundwater based upon onsite measurements taken

	during wet season.
	d. Shallow groundwater quality for typical waste constituents, up/down gradient. (See Table 1)
	e. Information on monitoring well locations, construction details, and locations of any geological features (e.g. aquitards, subterranean channels, faults) and aquifer characteristics.
	f. Summary of historical groundwater monitoring results (last 5 years for existing facilities, 2 years for new/planned facilities).
	E. Antidegradation Analysis
	The State Water Resources Control Board Resolution No. 68-16 (the Antidegradation Policy) requires that the Central Valley Water Board maintain the high quality of waters of the state until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the state, will not unreasonably affect beneficial uses, and will not result in exceedances of one or more water quality objectives. If a discharge will degrade groundwater quality but will not cause an exceedance of one or more water quality objectives, the discharger must demonstrate that all practicable treatment or control measures have been implemented or will be implemented such that the Board can consider these measures to represent the **"best practicable treatment or control"** (BPTC) of the constituents of concern. Demonstrating that BPTC has been, or will be, implemented at the site can provide justification for the Board to allow the current level of degradation to continue or increase (as applicable), or for the Board to allow any degradation in the case of a new discharge. The Antidegradation Policy is incorporated into our Basin Plans, which also include implementation plans that we follow. See the following link for the Basin Plans and other important policy documents: http://www.waterboards.ca.gov/centralvalley/plans_policies/
	The Antidegradation Analysis must include the following:
	1. For existing facilities, whether the discharge has caused degradation. If so, for which constituents, to what degree, and whether the discharge has caused exceedance of a water quality objective.
	2. The potential for the discharge to degrade groundwater quality (for new discharges) or further degrade groundwater quality (for existing discharges, whether or not the discharge is expanding).
	The assessment must be made based on site-specific data and shall include the following items for each constituent listed in the effluent category on Table 1:
	a. Characterization of all waste constituents to be discharged that have the potential to degrade groundwater quality;
	b. Characterization of shallow groundwater quality (i.e., the uppermost layer of the uppermost aquifer) for typical waste constituents[5] upgradient and downgradient of the site and

[5] Include analyses for the following: total coliform organisms, total dissolved solids, fixed dissolved solids, electrical conductivity, nitrate nitrogen, total nitrogen, and major anions and cations.

	comparison to established water quality objectives [6] (include tabulated historical groundwater monitoring data and groundwater elevation contour maps for the last eight monitoring events);
	c. A description of the geology and hydrogeologic conditions of the site including groundwater elevation and gradient, transmissivity, influence of all known recharge and pumping sources, and subsurface conditions at the facility, including any proposed new disposal site or storage ponds;
	d. Groundwater degradation , if any, that has resulted from existing operations, other nearby discharges, or natural occurrences;
	e. The areal extent that the discharge has impacted or will impact the quality of the shallow groundwater, if any;
	f. The concentration found and/or expected increase in concentration in shallow groundwater for each constituent.
	g. If degradation has occurred or is expected to occur describe the following:
	i. Any facility design features and operational practices that reduce the potential for groundwater degradation (treatment or control). Such features might include salinity source control, other pollutant source control, advanced treatment, disinfection, concrete treatment structures, and pond lining systems, etc.
	ii. Additional treatment or control measures that could be implemented and a preliminary capital and annual operations and maintenance cost estimate for each.
	iii. How current treatment and control measures are justified as BPTC (i.e., what justifies not implementing additional measures);
	iv. How no water quality objectives will be exceeded; and
	v. Why allowing existing and/or anticipated degradation is in the best interest of the people of the state.
	F. Industrial Storm Water Permit
	The State Water Resources Control Board adopted Order 97-03-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. Many industrial facilities and some domestic wastewater treatment facilities are required to obtain coverage under this permit. Provide evidence that the facility is exempt or has applied for coverage under the Industrial Storm Water Permit. See the following link for more information: http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/
	G. General WDRs for Sanitary Sewer Systems.

[6] Compare to Basin Plan water quality objectives, including drinking water standards, agricultural water quality goals, etc.

	The State Water Resources Control Board adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (Order 2006-0003-DWQ). The permit requires all public agencies that own or operate sanitary sewer systems greater than one mile in length to obtain coverage. Provide evidence that the facility is exempt or has applied for coverage under the General WDRs for Sanitary Sewer Systems. See the following link for more information: http://www.waterboards.ca.gov/water_issues/programs/sso/index.shtml
	H. Department of Water Resources Well Standards
	The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the State or county pursuant to Water Code section 13801, apply to all monitoring wells. Discuss whether existing monitoring wells at the facility were constructed in accordance with the Department of Water Resources Well Standards. See the following link for more information: http://wwwdpla.water.ca.gov/sd/groundwater/california_well_standards/well_standards_content.html

Table 1

The Report of Waste Discharge must characterize the groundwater (G), source water (S), treatment system influent (I), and effluent discharge (E) for, at minimum, the constituents indicated in the list below. The characterization must be based on a statistically significant number of representative samples as determined by an appropriately registered and/or licensed professional. All media must also be characterized for all additional waste constituents that may be in the discharge based on the facility processes employed but not listed below.

Constituent [1]	Units	Minimum Recommended Characterization Data			
		POTW/ Domestic	Food Processor	Sand and Gravel	Other Industry
Biochemical Oxygen Demand	mg/L	I, E	I, E		E
Chemical Oxygen Demand	mg/L	G, E	I, E		E
Settleable Matter	ml/L	E	E		E
Total Suspended Solids	mg/L	I, E	I, E		E
Total Dissolved Solids	mg/L	G, S, I, E	G, S, E	G	G, S, E
Fixed Dissolved Solids	mg/L		E		G, S, E
Electrical Conductivity	umhos/cm	G, S, I, E	G, S, I, E	G, S, I, E	G, S, I, E
Total Kjeldahl Nitrogen as N	mg/L	G, S, E	G, S, E		G, S, E
Ammonia Nitrogen as N	mg/L	G, S, E	G, S, E		G, S, E
Nitrate Nitrogen as N	mg/L	G, S, E	G, S, E		G, S, E
pH	pH Units	G, S, I, E	G, S, E	G, S, I, E	G, S, I, E
General Minerals[2]					
Alkalinity	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Hardness	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Bicarbonate	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Carbonate	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Calcium	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Magnesium	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Chloride	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Potassium	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Sodium	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Sulfate	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Metals[3]					
Aluminum	ug/L	E			E
Antimony	ug/L			S, E	

Constituent [1]	Units	Minimum Recommended Characterization Data			
		POTW/ Domestic	Food Processor	Sand and Gravel	Other Industry
Arsenic	ug/L	G, S, E	G, S, E	G, S, E	G, S, E
Barium	ug/L			S, E	
Beryllium	ug/L			S, E	
Boron	ug/L	G	G	G, S, E	G
Cadmium	ug/L			S, E	
Chromium (IV)	ug/L			S, E	
Chromium (III)	ug/L			S, E	
Total Chromium	ug/L	G	G	G, S, E	G
Cobalt	ug/L			S, E	
Copper	ug/L	E	E	S, E	E
Fluoride	ug/L			S, E	
Iron	ug/L	G, S, E	G, S, E	G, S, E	G, S, E
Lead	ug/L	E		S, E	E
Mercury	ug/L	E		S, E	E
Manganese	ug/L	G, S, E	G, S, E	G, S, E	G, S, E
Molybdenum	ug/L			S, E	
Nickel	ug/L			S, E	
Selenium	ug/L			S, E	
Silver	ug/L			S, E	
Thallium	ug/L			S, E	
Vanadium	ug/L			S, E	
Zinc	ug/L	E		S, E	E
Disinfection By-Products[4]	ug/L	G, E	E		E
Formaldehyde[5]	ug/L	G, E	E		E
Phenols[5]	ug/L	G, E			E
Priority Pollutants[6]	Various	G, E			E

[1] With the exception of wastewater samples, samples for metals analysis must first be filtered using a 0.45-micron filter. If filtering in the field is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain of custody form) to immediately filter then preserve the sample.

[2] General minerals analyses shall be accompanied by a cation/anion balance demonstrating complete analyses.

[3] Where constituents are analyzed as part of other suites of constituents, the results may be substituted to avoid redundant analyses (i.e., arsenic results collected to fulfill the metals suite requirements may also be used to fill the Priority Pollutant suite requirements provided appropriate detection limits are used.).

[4] If wastewater is disinfected using chlorination or chlorination is used in internal disinfection processes.

[5] If the facility accepts holding tank waste from RVs, boats, or portable toilets.

[6] The Discharger must determine which priority pollutants, if any, are likely to be present in the discharge at concentrations that might degrade groundwater quality, and must provide characterization data for those constituents.

California
Department of Conservation
Geologic Energy Management Division

Gavin Newsom, Governor
David Shabazian, Director
801 K Street, MS 18-05
Sacramento, CA 95814
T: (916) 445-9686

06/15/2020

Christina Monfette
2220 Tulare Street, Sixth Floor, Fresno, CA 93721, USA
cmonfette@fresnocountyca.gov

Construction Site Well Review (CSWR) ID: 1011758

Assessor Parcel Number(s): 30004019, 30004020, 30007056s, 30007057s, 30007058s, 30007059s, 30007060s, 30008001S, 30025012, 30031001

Property Owner(s): CEMEX Construction Materials Pacific, LLC

Project Location Address: 13475 N Friant Road and, 14765 North Friant Road, Friant, California, 93626

Project Title: SCH #2020060123 CEMEX Rockfield Quarry Mod Project EIR No. 7763 Unclassified CUPs 3666 and 3667

Public Resources Code (PRC) § 3208.1 establishes well reabandonment responsibility when a previously plugged and abandoned well will be impacted by planned property development or construction activities. Local permitting agencies, property owners, and/or developers should be aware of, and fully understand, that significant and potentially dangerous issues may be associated with development near oil, gas, and geothermal wells.

The Division of Oil, Gas, and Geothermal Resources (Division) has received and reviewed the above referenced project dated 6/15/2020. To assist local permitting agencies, property owners, and developers in making wise land use decisions regarding potential development near oil, gas, or geothermal wells, the Division provides the following well evaluation.

The project is located in Fresno County, within the boundaries of the following fields:

Our records indicate there are 0 known oil or gas wells located within the project boundary as identified in the application.

- Number of wells Not Abandoned to Current Division Requirements as Prescribed by Law and Projected to Be Built Over or Have Future Access Impeded by this project: 0
- Number of wells Not Abandoned to Current Division Requirements as Prescribed by Law and Not Projected to Be Built Over or Have Future Access Impeded by this project: 0
- Number of wells Abandoned to Current Division Requirements as Prescribed by Law and Projected to Be Built Over or Have Future Access Impeded by this project: 0
- Number of wells Abandoned to Current Division Requirements as Prescribed by Law and Not Projected to Be Built Over or Have Future Access Impeded by this project: 0

As indicated in PRC § 3106, the Division has statutory authority over the drilling, operation,

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maintenance, and abandonment of oil, gas, and geothermal wells, and attendant facilities, to prevent, as far as possible, damage to life, health, property, and natural resources; damage to underground oil, gas, and geothermal deposits; and damage to underground and surface waters suitable for irrigation or domestic purposes. In addition to the Division's authority to order work on wells pursuant to PRC §§ 3208.1 and 3224, it has authority to issue civil and criminal penalties under PRC §§ 3236, 3236.5, and 3359 for violations within the Division's jurisdictional authority. The Division does not regulate grading, excavations, or other land use issues.

If during development activities, any wells are encountered that were not part of this review, the property owner is expected to immediately notify the Division's construction site well review engineer in the Inland district office, and file for Division review an amended site plan with well casing diagrams. The District office will send a follow-up well evaluation letter to the property owner and local permitting agency.

Should you have any questions, please contact me at (661) 326-6016 or via email at Victor.Medrano@conservation.ca.gov

Sincerely,

Chris Jones
Acting District Deputy

NATIVE AMERICAN HERITAGE COMMISSION

Governor's Office of Planning & Research

Jun 12 2020

STATE CLEARINGHOUSE

7/6/2020

June 8, 2020

Christina Monfette
County of Fresno Department of Public Works and Planning
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

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NAHC HEADQUARTERS
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Re: 2020060123, Rockfield Quarry Modification Project Environmental Impact Report No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667 Project, Fresno County

Dear Ms. Monfette:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,

Nancy Gonzalez-Lopez
Staff Services Analyst

cc: State Clearinghouse

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

July 9, 2020

Christina Monfette
County of Fresno
Department of Public Works and Planning
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Project: Notice of Preparation of a Draft Environmental Impact Report for the Rockfield Quarry Modification Project Environmental Impact Report No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667

District CEQA Reference No: 20200535

Dear Ms. Monfette:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the project referenced above from the County of Fresno (County). CEMEX is proposing a continuation and modification of its current aggregate (rock, sand, and gravel) mining and processing operation located on two sites between North Friant Road and the San Joaquin River in Fresno County (Project). The Project is located at two sites: 13475 N. Friant Road and 14765 N. Friant Road in Fresno, CA.

Project Scope

CEMEX is proposing continuation of its current aggregate mining and processing operation that are estimated to span over 100 years in two stages. The proposed expansion would occur at CEMEX operational sites currently on two sites (i.e. Plant Site and Quarry Site) between North Friant Road and the San Joaquin River.

The Project will occur in two stages:

- Stage 1 will be continued operations of aggregate processing (washing, screening, crushing, and sorting) and hard rock mining processing at both sites for 30 years. Aggregate products produced at Quarry Site will be transported approximately two miles to Plant Site. This includes combined annual sales of aggregate from both sites that are estimated to increase from 1.4 MT allowed under current permits to 2.0 MT in approximately five years and 3.0 MT in 10 years. In addition, CEMEX is

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Executive Director/Air Pollution Control Officer

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proposing to replace existing asphalt plant at Plant site, with modern Hot Mix Asphalt (HMA) plant.

- Stage 2 consists of continued hard rock mining and processing operation only at the Quarry site for approximately 70 more years and the relocation of the HMA from Plant site to Quarry site. Aggregate products produced at Quarry site will be used on-site or sold directly from facility.

The District's initial review of the Project concludes that emissions resulting from construction and operation of the Project may exceed the following criteria pollutant emissions thresholds of significance: 100 tons per year of carbon monoxide (CO), 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), 27 tons per year of oxides of sulfur (SOx), 15 tons per year of particulate matter of 10 microns or less in size (PM10), or 15 tons per year of particulate matter of 2.5 microns or less in size (PM2.5). Therefore, the Project may have a significant impact.

Other potential significant air quality impacts related to Toxic Air Contaminants (see information below under Health Risk Assessment), Ambient Air Quality Standards, Hazards and Odors, may require assessments and mitigation. More information can be found in the District's Guidance for Assessing and Mitigating Air Quality Impacts at: https://www.valleyair.org/transportation/GAMAQI_12-26-19.pdf

The District offers the following comments:

1) Project Related Criteria Pollutant Emissions

The District recommends that a more detailed preliminary review of the Project be conducted. The additional environmental review of the Project's potential impact on air quality should consider the following items:

1a) Recommended Model

Project related criteria pollutant emissions from construction and operational sources should be identified and quantified. Emissions analysis should be performed using CalEEMod (**Cal**ifornia **E**mission **E**stimator **Mod**el), which uses the most recent approved version of relevant Air Resources Board (ARB) emissions models and emission factors. CalEEMod is available to the public and can be downloaded from the CalEEMod website at: www.caleemod.com.

1b) Project Related Construction Emissions

Construction emissions are short-term emissions and should be evaluated separately from operational emissions. Equipment exhaust, as well as fugitive dust emissions should be quantified. For reference, the District's annual criteria thresholds of significance for construction are listed above.

The District recommends that the County consider the use of the cleanest reasonably available off-road construction practices (i.e. eliminating unnecessary idling) and fleets, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations as a mitigation measure to reduce Project related impacts from construction related exhaust emissions.

1c) Project Related Operational Emissions – Cleanest Available Truck:

Emissions from stationary sources and mobile sources should be analyzed separately. For reference, the District's annual criteria thresholds of significance for operational emissions are listed above.

The San Joaquin Valley will not be able to attain stringent health-based federal air quality standards without significant reductions in emissions from heavy-heavy duty (HHD) Trucks, the single largest source of NOx emissions in the San Joaquin Valley. The District recently adopted the 2018 PM2.5 Plan, which includes significant new reductions from HHD Trucks, including emissions reductions by 2023 through the implementation of the California Air Resources Board (CARB) Statewide Truck and Bus Regulation, which requires truck fleets operating in California to meet the 2010 0.2 g/bhp-hr NOx standard by 2023. Additionally, to meet the federal air quality standards by the 2020 to 2024 attainment deadlines, the District's Plan relies on a significant and immediate transition of heavy duty truck fleets to zero or near-zero emissions technologies, including the near-zero truck standard of 0.02 g/bhp-hr NOx established by the California Air Resources Board.

For an aggregate mining and processing operation facility, there are heavy duty trucks traveling to-and-from from the project location. Since the project may exceed the District significance thresholds, the District recommends that the following mitigation measures be considered by the County for inclusion in the EIR for project related operational emissions.

- Advise fleets associated with Project operational activities to utilize the cleanest available HHD truck technologies, including zero and near-zero (0.02 g/bhp-hr NOx) technologies as feasible.

- Advise all on-site service equipment (cargo handling, yard hostlers, forklifts, pallet jacks, etc.) to utilize zero-emissions technologies as feasible.

- Advise fleets associated with future development projects to be subject to the best practices (i.e. eliminating unnecessary idling).

In addition, the District recommends that the County include mitigation measures to reduce project related operational impacts through incorporation of design elements, for example, increased energy efficiency, reducing vehicle miles traveled, etc. More information on mitigation measures can be found on the District's website at: http://www.valleyair.org/transportation/ceqa_idx.htm.

1d) Project Related Operational Emissions – Truck Routing

Truck routing involves the path/roads heavy-duty trucks take to and from their destination. The air emissions from heavy-duty trucks can impact residential communities and sensitive receptors.

The District recommends the County consider evaluating heavy-duty truck routing patterns to help limit emission exposure to residential communities and sensitive receptors. More specifically, this measure would assess current truck routes, in consideration of the number and type of each vehicle, destination/origin of each vehicular trip, time of day/week analysis, vehicle miles traveled and emissions. The truck routing evaluation would also identify alternative truck routes and their impacts on VMT, GHG emissions, and air quality.

1e) Project Related Operational Emissions – Permitted Stationary Source Emission Units

The District issues permits for many types of air pollution sources and regulates some activities not requiring permits. A project subject to District rules and regulation would reduce its impacts on air quality through compliance with regulatory requirements. In general, a regulation is a collection of rules, each of which deals with a specific topic. Here are a couple of example, Regulation II (Permits) deals with permitting emission sources and includes rules such as District permit requirements (Rule 2010), and New and Modified Stationary Source Review (Rule 2201).

1f) District Rules 2010 and 2201 - Air Quality Permitting for Stationary Sources

Stationary Source emissions include any building, structure, facility, or installation, which emits or may emit any affected pollutant directly or as a fugitive emission. District Rule 2010 requires operators of emission sources to obtain an Authority to Construct (ATC) and Permit to Operate (PTO) from the District. District Rule

2201 requires that new and modified stationary sources of emissions mitigate their emissions using best available control technology (BACT).

This Project will be subject to District Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review) and will require District permits. Prior to construction, the Project proponent should submit to the District an application for an Authority to Construct (ATC). For further information or assistance, the project proponent may contact the District's Small Business Assistance (SBA) Office at (559) 230-5888.

1g) Other District Rules and Regulations

The Project may also be subject to the following District rules: Regulation VIII, (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants).

The list of rules above is neither exhaustive nor exclusive. Current District rules can be found on the District's website at: www.valleyair.org/rules/1ruleslist.htm. To identify other District rules or regulations that apply to this Project or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (559) 230-5888

2) Health Risk Screening/Assessment

A Health Risk Screening/Assessment identifies potential Toxic Air Contaminants (TAC's) impact on surrounding sensitive receptors such as hospitals, daycare centers, schools, work-sites, and residences. TAC's are air pollutants identified by the Office of Environmental Health Hazard Assessment/California Air Resources Board (OEHHA/CARB) (https://ww2.arb.ca.gov/resources/documents/carb-identified-toxic-air-contaminants) that pose a present or potential hazard to human health. A common source of TACs can be attributed to diesel exhaust emitted from both mobile and stationary sources.

The District recommends the Project be evaluated for potential health impacts to surrounding receptors (on-site and off-site) resulting from operational and multi-year construction TAC emissions.

i) The District recommends conducting a screening analysis that includes all sources of emissions. A screening analysis is used to identify projects which may have a significant health impact. A prioritization, using CAPCOA's updated methodology, is the recommended screening method. A prioritization score of 10 or greater is considered to be significant and a refined Health Risk Assessment (HRA) should be performed.

For your convenience, the District's prioritization calculator can be found on the District's website at: http:www.valleyair.org/busind/pto/emission_factors/Criteria/Toxics/Utilities/PRIORITIZATION%20RMR%202016.XLS.

ii) The District recommends a refined HRA for projects that result in a prioritization score of 10 or greater. Prior to performing an HRA, it is recommended that the Project proponent contact the District to review the proposed modeling protocol. The Project would be considered to have a significant health risk if the HRA demonstrates that the Project related health impacts would exceed the Districts significance threshold of 20 in a million for carcinogenic risk and 1.0 for the Acute and Chronic Hazard Indices, and would trigger all feasible mitigation measures. The District recommends that Projects that result in a significant health risk not be approved.

For HRA submittals, please provide the following information electronically to the District for review:

- HRA AERMOD model files
- HARP2 files
- Summary of emissions source locations, emissions rates, and emission factor calculations and methodology.

More information on toxic emission factors, prioritizations and HRAs can be obtained by:

- E-Mailing inquiries to: hramodeler@valleyair.org; or
- The District can be contacted at (559) 230-6000 for assistance; or
- Visiting the Districts website (Modeling Guidance) at: http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.

3) Health Impact Discussion

As required by the recent decision in Sierra Club v. County of Fresno (2018) 6 Cal.4th 502, a reasonable effort to discuss relevant specifics regarding the connection between potential adverse air quality impacts from the Project with the likely nature and magnitude of potential health impacts. If the potential health impacts from the Project cannot be specifically correlated, explain what is known and why, given scientific constraints, potential health impacts cannot be translated.

4) Ambient Air Quality Analysis

An ambient air quality analysis (AAQA) uses air dispersion modeling to determine if emissions increases from a project will cause or contribute to a violation of the ambient air quality standards. The District recommends that an AAQA be performed for the Project if emissions exceed 100 pounds per day of any pollutant.

If an AAQA is performed, the analysis should include emissions from both Project specific permitted and non-permitted equipment and activities. The District recommends consultation with District staff to determine the appropriate model and input data to use in the analysis.

Specific information for assessing significance, including screening tools and modeling guidance is available online at the District's website www.valleyair.org/ceqa.

5) Cumulative Air Impacts

In addition to the discussions on the topics identified above, the District recommends the EIR also include a discussion of whether the Project would result in a cumulatively considerable net increase of any criteria pollutant or precursor for which the San Joaquin Valley Air Basin is in non-attainment. More information on the District's attainment status can be found online by visiting the District's website at: http://valleyair.org/aqinfo/attainment.htm.

6) Voluntary Emission Reduction Agreement

If the Project is expected to have a significant impact, the District recommends the EIR also include a discussion on the feasibility of implementing a Voluntary Emission Reduction Agreement (VERA) for this Project.

A VERA is a mitigation measure by which the project proponent provides pound-for-pound mitigation of emissions increases through a process that develops, funds, and implements emission reduction projects, with the District serving a role of administrator of the emissions reduction projects and verifier of the successful mitigation effort. To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate Project specific emissions by providing funds for the District's incentives programs. The funds are disbursed by the District in the form of grants for projects that achieve emission reductions. Thus, project-specific regional impacts on air quality can be fully mitigated. Types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors.

In implementing a VERA, the District verifies the actual emission reductions that have been achieved as a result of completed grant contracts, monitors the emission reduction projects, and ensures the enforceability of achieved reductions. After the project is mitigated, the District certifies to the Lead Agency that the mitigation is completed, providing the Lead Agency with an enforceable mitigation measure demonstrating that project-specific regional emissions have been mitigated to less than significant. To assist the Lead Agency and project proponent in ensuring that the environmental document is compliant with CEQA, the District recommends the Draft EIR include an assessment of the feasibility of implementing a VERA.

The District recommends that a copy of the District's comments be provided to the Project proponent. If you have any questions or require further information, please contact Keanu Morin by e-mail at Keanu.Morin@valleyair.org or by phone at (559) 230-5805.

Sincerely,

Jacob Whitson
Program Manager

JW: km

RECEIVED
JUN 17 2020
FRESNO COUNTY
DEPT. OF
PUBLIC WORKS & PLANNING

Ernest Kazato
7797 N. First Street #171
Fresno, CA 93720
6/14/2020

RECEIVED
COUNTY OF FRESNO
JUN 19 2020
DEPARTMENT OF PUBLIC WORKS
AND PLANNING
DEVELOPMENT SERVICES DIVISION

Christina Monfette, Planner
County of Fresno Dept. of Public Works & Planning
Development Services & Capital Projects Division
2220 Tulare St., Sixth Floor

Dear Ms. Monfette,

Thank you for your insightful "Notice of Preparation" addressing the Rockfield Quarry EIR No. 7763 and Conditional Use Permit Applications Nos 3666 and 3667. After analyzing your summary and a letter from CEMEX, I urge the County of Fresno to reject those proposed modifications described in Modification Report No. 7763.

I have property which looks down on the Rockfield Quarry Site and derives its major water source downstream from that quarry. Consequently, my primary concerns are the change in appearance of the waterway, any increased noise and the possible degradation of San Joaquin River water quality.

While wishing to support our local businesses and agreeing that unnecessary transportation of gravel into our community may not make environmental or economic sense, I urge CEMEX to submit a plan which will minimize these concerns.

Sincerely yours,

Ernest Kazato, M.D.
559.978.7857

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

June 19, 2020

Ernest Kazato, M.D.
7797 N. First Street #171
Fresno, CA 93720

Subject: Comments Received Relating to EIR 7763 (Cemex Mining Proposal)

Dear Dr. Kazato,

This letter is being sent to confirm receipt of your comment letter relating to the subject application. A copy of your letter with the County's date stamp has been enclosed as proof of receipt.

Your comments will be considered in the development of the scope of impacts for the subject application. After the scoping process has been completed, Benchmark Resources will prepare a Draft Environmental Impact Review to quantify impacts from those items identified during this scoping process. The Draft EIR will be posted on the County's website for public review.

If you have any questions regarding the information in this letter, please contact me at cmonfette@co.fresno.ca.us or (559) 600-4245.

Sincerely,

Chrissy Monfette, Planner
~~Development Services and Capital~~ Projects Division

G:\4360Devs&Pln\PROJSEC\PROJDOCS\Environmental\EIR - EIS\7763 Rockfield Modification Project (Cemex)\Public Comment\Public Scoping Comments\EIR 7763 - Response to EKazato.docx

Submitter DB ID	17967
IP Address	2602:304:cec2:6610:24df:d1d8:2a9:2a58
Submission Recorded On	07/02/2020 11:23 AM
Time to Take the Survey	2 minutes, 14 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Francis Horan

2. Organization/Business

Not answered

3. What is your address?

3781 W. Spruce

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

frankhhoran@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The Cemex gravel mine is a threat to the San Joaquin River, which is a resource belonging to all Californians. You and the Fresno County of Public Works and Planning asked for private citizens to submit comments that address environmental concerns, so this is mine. The river is almost dead as it is, and now you are preparing to let Cemex keep devastating it for another 100 years? The San Joaquin River Parkway has been adopted by all our county governments and should have long since been built, but the will of the people in that will be useless if a self-serving company is allowed to blast and trench and mine until the river is inhospitable. Deny Cemex. Kick them out. The San Joaquin must be restored for the good of Fresno County and all California.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Deny Cemex's attempts to expand through blasting and drilling. The permits are also set to expire on their Rockfield plant, so let them expire.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Thursday, July 2, 2020 11:35 AM
To: frankhhoran@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

Please let me know if you have any questions. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Monfette, Christina

From: Fred Peterson <fjppet@gmail.com>
Sent: Monday, July 6, 2020 5:03 PM
To: Monfette, Christina
Subject: Mining/ Gravel Operation Proposals near Lost Lake Nature Trail and Lost Lake County Park

Ms. Monfette, This trail is adjacent to the proposed site at the south end of Lost Lake County Park.

The Nature Trail is critical habitat for migration stop-over in wintering months (Novl.-March), and Prime water/access/nesting habitat in spring/summer months for over 200 species of birds going up and down The Pacific Flyway from Canada, the U.S. coast, and Mexico.

The expansion mining, blasting, noise, and resulting effects with air and water quality would severely Impact this critical area involving the Nature Trail and Lost Lake Park itself.

Shore/wading birds (sandpipers, egrets, herons), small tree birds to large raptors/birds of prey (eagles, hawks, vultures) Constantly go through this habitat between the Sierra foothills and the high Sierra.

Fresno Audubon Society and San Joaquin River Parkway/Conservation Trust have assisted Fresno County Parks Department in maintaining Lost Lake Nature Trail and Lost Lake Park over the last forty plus years since 1973.

It would also endanger important wildlife corridor passage along the fiver between Friant Dam and the Freeway 99 bridge.

The San Joaquin River Parkway has accomplished many goals over the last 35 years in protecting habitat and building the recreational, economic, and natural values to enhance our quality of life.

American River Parkway in Sacramento has proven to be a sound and successful example that the San Joaquin River Parkway has sought to emulate, and use as a model in its success so far in accomplishing its goals as a contribution to our Valley.

Thank you, Fred Peterson
Former member and chair of Fresno Audubon Conservation Committee
2003-2008

Please add me to your contact list for important updates as this process develops. fjppet@gmail.com

Monfette, Christina

From: Monfette, Christina
Sent: Tuesday, July 7, 2020 9:20 AM
To: Fred Peterson
Subject: RE: Mining/ Gravel Operation Proposals near Lost Lake Nature Trail and Lost Lake County Park (EIR 7763)

Good morning,

Thank you for providing comments on the subject application. Please include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments were not received during the Scoping Period, which ended at 5:00 on July 6, 2020; however, they will be made a part of the final project record. Your email address has been added to our list to receive digital notices relating to this project.

If you have any questions, please don't hesitate to reach out to me at the contact information below.

Thank you again,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. Suite A, Fresno, CA 93721 Main Office: (559) 600-4230 Direct: (559) 600-4245

-----Original Message-----
From: Fred Peterson <fjppet@gmail.com>
Sent: Monday, July 6, 2020 5:03 PM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: Mining/ Gravel Operation Proposals near Lost Lake Nature Trail and Lost Lake County Park

Ms. Monfette, This trail is adjacent to the proposed site at the south end of Lost Lake County Park.

The Nature Trail is critical habitat for migration stop-over in wintering months (Novl.-March), and Prime water/access/nesting habitat in spring/summer months for over 200 species of birds going up and down The Pacific Flyway from Canada, the U.S. coast, and Mexico.

The expansion mining, blasting, noise, and resulting effects with air and water quality would severely Impact this critical area involving the Nature Trail and Lost Lake Park itself.

Shore/wading birds (sandpipers, egrets, herons), small tree birds to large raptors/birds of prey (eagles, hawks, vultures) Constantly go through this habitat between the Sierra foothills and the high Sierra.

Fresno Audubon Society and San Joaquin River Parkway/Conservation Trust have assisted Fresno County Parks Department in maintaining Lost Lake Nature Trail and Lost Lake Park over the last forty plus years since 1973.

It would also endanger important wildlife corridor passage along the fiver between Friant Dam and the Freeway 99 bridge.

The San Joaquin River Parkway has accomplished many goals over the last 35 years in protecting habitat and building the recreational, economic, and natural values to enhance our quality of life.

American River Parkway in Sacramento has proven to be a sound and successful example that the San Joaquin River Parkway has sought to emulate, and use as a model in its success so far in accomplishing its goals as a contribution to our Valley.

Thank you, Fred Peterson

Former member and chair of Fresno Audubon Conservation Committee
2003-2008

Please add me to your contact list for important updates as this process develops. fjppet@gmail.com

Submitter DB ID	17482
IP Address	2600:1700:3e30:6f48:a5bc:b2ce:569e:30d9
Submission Recorded On	06/19/2020 8:37 PM
Time to Take the Survey	1 minutes, 31 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Gabby N

2. Organization/Business

Not answered

3. What is your address?

Not answered

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

Gvang92@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Don't do it, it's a trap.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 22, 2020 8:25 AM
To: Gvang92@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18053
IP Address	73.235.238.248
Submission Recorded On	07/03/2020 4:39 PM
Time to Take the Survey	5 minutes, 6 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Griffin Carter

2. Organization/Business

Student

3. What is your address?

9381 N Woodmont Dr

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

griffinwcarter@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I live near Friant rd and Woodward park. In addition to the environmental degradation that comes with excavation projects like these, I do not want massive freight trucks moving up and down Friant constantly as it will cause more traffic, pollution, and noise in my area.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

A mitigation method is to not do this project at all and move it away from the San Joaquin that my family, friends, and community members use.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 11:19 AM
To: griffinwcarter@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	17988
IP Address	67.181.209.24
Submission Recorded On	07/02/2020 4:15 PM
Time to Take the Survey	7 minutes, 49 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

George Folsom

2. Organization/Business

Not answered

3. What is your address?

1505 W. Ellery Way, Fresno Ca 93711

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

geofolsom@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Not answered

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Provision for the River Parkway Trail near the river through the quarry property.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 9:37 AM
To: geofolsom@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Monfette, Christina

From: Camacho, Juana
Sent: Monday, June 29, 2020 8:46 AM
To: Craft, Lisa
Cc: Monfette, Christina
Subject: RE: CEMEX contract/lease renewal

Thank you.

Juana Camacho | Program Technician
Department of Public Works and Planning | Administration
2220 Tulare St. 8th Floor Fresno, CA 93721
Main Office: (559) 600-4078 Direct: (559) 600-4300
Your input matters! Customer Service Survey

From: Craft, Lisa <lcraft@fresnocountyca.gov>
Sent: Monday, June 29, 2020 8:19 AM
To: White, Steven <stwhite@fresnocountyca.gov>; Jimenez, Bernard <BJimenez@fresnocountyca.gov>; Benjamin, Marc <mbenjamin@fresnocountyca.gov>; Bourbon, Kelliana <kbourbon@fresnocountyca.gov>; Day, Vickie <vday@fresnocountyca.gov>; Jeffers, Robert <rjeffers@fresnocountyca.gov>; Jones, Lindsay <lejones@fresnocountyca.gov>; Martinez, Ari (Harim) <hamartinez@fresnocountyca.gov>; Rapada, Steve <srapada@fresnocountyca.gov>; Rush, Bret <brush@fresnocountyca.gov>; Tangipa, David <dtangipa@fresnocountyca.gov>; Zaragoza, Jessika <jzaragoza@fresnocountyca.gov>
Cc: Camacho, Juana <jcamacho@fresnocountyca.gov>
Subject: FW: CEMEX contract/lease renewal

Received the following in our ClerkBOS email.

Thanks,
Lisa

From: George Hillis, Ill <ghh3@yahoo.com>
Sent: Friday, June 26, 2020 6:45 PM
To: Clerk/BOS <ClerkBOS@fresnocountyca.gov>
Subject: CEMEX contract/lease renewal

To whom it may concern:

We are 30 year residents in Woodward Lake and frequent users of the Lewis Eaton trail. We strongly feel it is time for the San Joaquin River bottom, where CEMEX operates its gravel operation, to be restored to its previous state and condition. Please do not approve their request for a new contract/lease.
We understand the cost of moving/relocating an operation of this size and the cost to restore the natural habitat can be expensive.
The area has changed so much in just the last 30 years with more neighborhoods further north on Friant Road.
It is a different time and a different neighborhood from when CEMEX was awarded the current contract. It is time for CEMEX to find a river area that is not in a rapid growth area such as we have here in Northeast Fresno along the Friant Road corridor and the beautiful San Joaquin River.

Monfette, Christina

From: George Hillis, III <ghh3@yahoo.com>
Sent: Friday, June 26, 2020 6:36 PM
To: Monfette, Christina
Subject: CEMEX renewal

To whom it may concern:

We are 30 year residents in Woodward Lake and frequent users of the Lewis Eaton trail. We strongly feel it is time for the San Joaquin River bottom, where CEMEX operates its gravel operation, to be restored to its previous state and condition. Please do not approve their request for a new contract/lease.

We understand the cost of moving/relocating an operation of this size and the cost to restore the natural habitat can be expensive.

The area has changed so much in just the last 30 years with more neighborhoods further north on Friant Road.

It is a different time and a different neighborhood from when CEMEX was awarded the current contract. It is time for CEMEX to find a river area that is not in a rapid growth area such as we have here in Northeast Fresno along the Friant Road corridor and the beautiful San Joaquin River.

Respectfully submitted,

George & Peggy Hillis
10686 N. Coronado Circle
Fresno, CA 93730
559 288.9585

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 29, 2020 11:56 AM
To: George Hillis, III
Subject: RE: CEMEX renewal (EIR 7763)

Good morning

Thank you for providing comments on the subject application. Please include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments will be considered in the development of the scope of impacts to be considered by the Draft EIR. The Draft EIR will provide a discussion on the extent of potential impacts identified by the scoping process and may propose mitigation measures to reduce such impacts.

If you have any questions or if you would like to submit additional comments, please don't hesitate to reach out to me at the contact information below. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

-----Original Message-----
From: George Hillis, Ill <ghh3@yahoo.com>
Sent: Friday, June 26, 2020 6:36 PM
To: Monfette, Christina <cmonfette@fresnocountyca.gov>
Subject: CEMEX renewal

To whom it may concern:

We are 30 year residents in Woodward Lake and frequent users of the Lewis Eaton trail. We strongly feel it is time for the San Joaquin River bottom, where CEMEX operates its gravel operation, to be restored to its previous state and condition. Please do not approve their request for a new contract/lease.

We understand the cost of moving/relocating an operation of this size and the cost to restore the natural habitat can be expensive.

The area has changed so much in just the last 30 years with more neighborhoods further north on Friant Road.

It is a different time and a different neighborhood from when CEMEX was awarded the current contract. It is time for CEMEX to find a river area that is not in a rapid growth area such as we have here in Northeast Fresno along the Friant Road corridor and the beautiful San Joaquin River.

Respectfully submitted,

George & Peggy Hillis
10686 N. Coronado Circle
Fresno, CA 93730
559 288.9585

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 29, 2020 12:12 PM
To: ghh3@yahoo.com
Subject: EIR 7763 - Confirmation of Receipt of Comments

Good afternoon,

Thank you for providing comments on the subject application. Please include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex *which were sent to the Clerk to the Board of Supervisors*. Your comments will be considered in the development of the scope of impacts to be considered by the Draft EIR. The Draft EIR will provide a discussion on the extent of potential impacts identified by the scoping process and may propose mitigation measures to reduce such impacts.

If you have any questions or if you would like to submit additional comments, please don't hesitate to reach out to me at the contact information below. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	17611
IP Address	73.48.209.111
Submission Recorded On	06/23/2020 3:44 PM
Time to Take the Survey	41 minutes, 55 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Georgia M Murach

2. Organization/Business

citizen

3. What is your address?

1374 W. Big Sandy Rd.

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

georgiamurach@comcast.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Doesn't anyone just value the beauty of the San Joaquin river and treasure what it gives us? River banks, open space, water, birds, fish, flowers, trees, mountain views, long walks, and even picnics!

How can anyone even think of renewing the Cemex lease and allowing rock quarry mining? The noise, air pollution, degradation of water quality is enough to make this a very easy answer. Absolutely, no. Please, this is not a business decision! Five new jobs and 92 old jobs are not worth it! Nothing is.

This is not a financial decision for the county, it is a recognition of the quality of life that we all deserve.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

There are no mitigation measures for this proposal. Cemex will find another solution, it might be more costly, but there are other solutions.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 29, 2020 9:40 AM
To: georgiamurach@comcast.net
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Monfette, Christina

From: gv Candida <crsequeira2@gmail.com>
Sent: Monday, July 6, 2020 4:54 PM
To: Monfette, Christina
Subject: Hello, please do not allow the cemex to drill I. Our neighborhood. City of Freno attracts people to Fresno with their nice homes and then allows thos to happen please no mining

Monfette, Christina

From: Monfette, Christina
Sent: Tuesday, July 7, 2020 9:06 AM
To: gv Candida
Subject: RE: (EIR 7763) Hello, please do not allow the cemex to drill I. Our neighborhood. City of Freno attracts people to Fresno with their nice homes and then allows thos to happen please no mining

Good morning,

Thank you for providing comments on the subject application. Please include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex. Your comments were received during the Scoping Period and will be considered in the development of the scope of impacts to be considered by the Draft EIR.

If you have any questions, please don't hesitate to reach out to me at the contact information below.

Thank you again,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. Suite A, Fresno, CA 93721
Main Office: (559) 600-4230 Direct: (559) 600-4245

> **From:** gv Candida <crsequeira2@gmail.com>
> **Sent:** Monday, July 6, 2020 4:54 PM
> **To:** Monfette, Christina <cmonfette@fresnocountyca.gov>
> **Subject:** Hello, please do not allow the cemex to drill I. Our neighborhood. City of Freno attracts people to Fresno with their nice homes and then allows thos to happen please no mining

Submitter DB ID	17544
IP Address	2603:3006:dbc:8000:e01e:fc10:1bca:c814
Submission Recorded On	06/22/2020 9:57 AM
Time to Take the Survey	29 minutes, 30 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Gary A Warner

2. Organization/Business

River View Ranch

3. What is your address?

15264 Mesa View Ave, Friant, CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

Warner9272@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Aesthetics Concerns:

There is a high probability that there will be a significant negative aesthetic impact to the area due to having a 600-foot-deep hole in the middle of the San Joaquin River Corridor. The topography of this area will make this difficult to mitigate the negative impact as the proposed mine location is in a river valley easily seen by surrounding residential communities on the surrounding hills that look down on the proposed site. If allowed to proceed there will be deep visual scars that will never heal.

The Fresno County General Plan states that the County shall support the policies of the San Joaquin River Parkway Master Plan to protect the aquatic habitat, recreational amenity, aesthetic resource, and water source. This proposed mining project does not appear to align with the County's commitment to support the policies of the San Joaquin River Parkway Master Plan.

The General Plan also designates Friant Road from the city of Fresno to Lost Lake Road as a "Designated Scenic Drive". The proposal substantially increases use by diesel trucks for transportation, the continued use of the large mining plant near Friant Road, and deep mine itself appears to conflict with a "Designated Scenic Drive". However, wrapping up current the sand and gravel operations with quarries which that can be filled full of water may be consistent with this designation.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

CEMEX may propose high sound and vegetation barriers, but from past conversations with neighbors in the area they have not been good at maintaining such barriers. The best mitigation would be for CEMEX to find another location that has flatter surrounding topography so the aesthetics mitigation step may actually work and possibly where they will not need to blast to mine the gravel and sand. There is very little chance that at the current site that they would be able to conceal a 600-ft deep hole from view for the surrounding residents on the adjacent hilltops.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Submitter DB ID	17545
IP Address	2603:3006:dbc:8000:e01e:fc10:1bca:c814
Submission Recorded On	06/22/2020 10:05 AM
Time to Take the Survey	7 minutes, 22 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Gary A Warner

2. Organization/Business

River View Ranch

3. What is your address?

15264 Mesa View Ave, Friant, CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

Warner9272@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Hydrology/Water Quality Concerns:

I live in a residential community that is directly across Friant road from the quarry site. I have lived in this community for less than a year and we have already experienced multiple water issues with the community well in which the County has been called out to address. Because of this, I have serious concerns that the nearby wells will be severely impacted by both a large 600 ft deep hole depleting the potential water supply, but also by the drilling and blasting techniques used to dig the mine possibly contaminating the water supply. I am not an expert in this area, so I forwarded my concerns to a close friend of mine, Doug Harrison, who is an expert in Hydrology and Water Quality. Mr. Harrison was the Manager of the Fresno Metropolitan Flood Control District for much of his career. His expertise was highly regarded in Fresno, surrounding areas, and even nationally, so much so that he represented our valley with statements before the US House of Representatives Committee on Appropriations Subcommittee on Energy and Water Development. His response to me about my concerns, "It is absolutely a legitimate concern and depending on proximity to your well, it could destroy you water supply". I will be talking with Doug next week and will follow-up with more specifics regarding these concerns. I would also like to note that there are multiple residential communities and recreational sites that are in very close proximity of the current quarry site that could have their water impacted Part of the County's General Plan is Resource Protection which includes water supply and quality.

Also, it is material to consider that CEMEX has been in the news in recent years as not being trustworthy stewards of community water supplies near thei mining operations. There are news articles that the CEMEX Stillwell Project in the town of Lemon Cove directly impacted wells to dry up around the mining operation. CEMEX tried to blame the wells running dry on the drought, but the article points out facts that suggests otherwise.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

I will follow up with additional comments (if permitted) after I talk with Mr. Harrison.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Friday, June 26, 2020 4:49 PM
To: warner9272@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good afternoon,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date. We are in receipt of two online comment card submissions with your name attached.

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18113
IP Address	2603:3006:dbc:8000:805c:947a:e526:3717
Submission Recorded On	07/06/2020 10:22 AM
Time to Take the Survey	4 minutes, 12 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Gary Warner

2. Organization/Business

Nearby Resident

3. What is your address?

15264 Mesa View Ave, Friant, CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

Warner9272@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Landuse/Planning

The CEMEX proposal appears to be incompatible with the Fresno County General Plan for the Land Use Designation for the San Joaquin River Corridor Overlay. The General Plan states this overlay provides for agricultural activities with incidental homesites, sand and gravel extraction, various recreational activities, wildlife habitat areas, and uses which serve the San Joaquin River Parkway. The request to do hard rock mining and blasting resulting a permanent 600 ft deep scar in the heart of the corridor is very different that sand and gravel extraction and does not seem to fit with the stated land use designations in the General Plan and will scar the surrounding community for centuries for come.

How is this plan compatible with the commitment of the County to San Joaquin River Parkway Master Plan?

Is this the only location that CEMEX can get these resources?

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Have they explored other locations that will have less of an impact on the environmental concerns, the San Joaquin River Parkway Master Plan?

Submitter DB ID	18118
IP Address	2603:3006:dbc:8000:805c:947a:e526:3717
Submission Recorded On	07/06/2020 10:35 AM
Time to Take the Survey	11 minutes, 41 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Gary Warner

2. Organization/Business

Nearby Resident

3. What is your address?

15264 Mesa View Ave, Friant CA, 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

Warner9272@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Noise Concerns:

One of the many disturbing parts of the imposed plan is the use of blasting and other techniques to dig the 600-foot mine and crush rock into gravel. My home is in a community directly across from the quarry site where the blasting will occur. Multiple homes in the area are likely less than 1000 ft from the blasting site. My research on these techniques raise serious concerns as my research on the noise impact of blasting indicates that the decibels for residents within close proximity from the blasting site. Rock Crushers, Loaders, Rock Breakers, and Blasting all have the potential to produce excessive sound for nearby residents.

They are requesting operations from 4am to 9 pm 5 days a week...that 17 hours of noise pollution for the surrounding communities like mine with would significantly impact the quality of life. In addition to humans, the areas directly adjacent to the blast site are home to many different types of wildlife, and large grazing fields for hundreds heads of cattle.

What are the decibels of sound for Blasting, Loaders and Rock Crushers for the surrounding area at 500 ft, 1000 ft? How will this be monitored and enforced to protect the surrounding community and not disturb surrounding wildlife?

7.

Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Submitter DB ID	18127
IP Address	2603:3006:dbc:8000:805c:947a:e526:3717
Submission Recorded On	07/06/2020 11:31 AM
Time to Take the Survey	5 minutes, 47 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Gary Warner

2. Organization/Business

Nearby Resident

3. What is your address?

15264 Mesa View Ave, Friant, CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

Warner92722@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Air Quality Concerns:

It goes without saying that Air Quality is major concern for Fresno County. The Friant Ranch Development which is in close proximity of the quarry site was approved by the County but was challenged in court and went all the way to the California Supreme Court. I am not experienced in legal matters, but it appears to me that the Supreme Court has postponed over expressed concerns regarding the negative impacts of the air quality on humans along with ability to monitor and enforce the standards over the long term. These same issues would seem to apply in the case of a mining operation that will be putting additional contaminants into the air daily through blasting, rock crushing, and more than doubling the amount of diesel truck traffic on local roads. I would like the scoping process to address these questions:

What are the current AQI (Air Quality Index) levels for the surrounding areas during different months?

What are the anticipated increases in the AQI levels from the proposed operations?

If the Friant Ranch Development proceeds how does the combination of the development and the proposed operation impact the AQI levels of the surrounding areas?

If the Friant Ranch Development is not able to move forward due to area quality concerns how can the County approve a mining operation that will likely have even further impacts on the air quality?

If mining operation is approved will it be allowed to operate when the AQI Levels are Unhealthy for Sensitive Groups?

How will the long-term air quality issues be monitored and enforced?

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Limit Operations when the AQI is Moderate or Good.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Submitter DB ID	18130
IP Address	2603:3006:dbc:8000:805c:947a:e526:3717
Submission Recorded On	07/06/2020 11:41 AM
Time to Take the Survey	9 minutes, 21 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Gary Warner

2. Organization/Business

Nearby Resident

3. What is your address?

15264 Mesa View Ave, Friant, CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

Warner9272@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Local residents like myself have made significant home purchases with the understanding that operations at the current Quarry site would expire in 2023 and CEMEX would honor their promise to restore the land like they did with their Beck Ranch operation when it was mined out in 2009. We understood the possibility that an extension for sand and gravel excavation could be approved, but nowhere in their previous proposals or in the Fresno General Plan was there any indication that deep rock mining with blasting would occur along the San Joaquin River corridor.

I am concerned that the lasting aesthetics scars of a 600 foot deep hole, increased air pollution, increase noise from blasting, and the potential damaging impacts of the water supply will likely have negative impacts on residential property values in the surrounding area. This project could devastate the quality of life and property values of existing residents and future residents in planned communities like Friant Ranch mentioned in the General Plan. I have seen studies that indicate that Residential Property Values near (within 1 mile) Gravel Mining operations have decreased some nearby properties by over 30%. I fear that property value declines could be worse for property owners near deep mine blasting operations with 100 years of operations. This proposal if approved could financially devastate many residents. I request further research by impartial parties (not CEMEX) on the potential impacts on the property values and potential ways for CEMEX to make impacted residents whole.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Have appraisals of all residences and other impacted properties within 1 mile of the proposed site completed prior to the operation starting and then again after 10 years of the operation commencing or the sale of the property whichever is sooner and if there is a decline in value from the original appraisal CEMEX should make the residents whole.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Submitter DB ID	18139
IP Address	2603:3006:dbc:8000:805c:947a:e526:3717
Submission Recorded On	07/06/2020 12:43 PM
Time to Take the Survey	5 minutes, 58 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Gary Warner

2. Organization/Business

N

3. What is your address?

15264 Mesa View Ave Friant, CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

Warner9272@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Hydrology/Water Quality Concerns:

I live in a residential community that is directly across the road from the quarry site on Friant Road. I have lived in this community for less than a year and we have already experienced multiple water issues with the community well in which the County has been called out to address.

CEMEX's proposal will dramatically increase the nature, depth and quantity of sand, gravel, and hard rock mining on the subject sites. This increase fron 1.4 MT to 3.0 MT per year will require increased excavation plus new massive drilling and blasting of the underlying bedrock which forms the "floor" of the aquifer that feeds existing water supply wells, including ours.

I believe, as do the experts I have consulted, that any increased mining activity at the quarry site will damage the fragile yield of our well, and others in th area. We also believe that any significant mining of the bedrock will irreparably damage the aquifer feeding that well, and others. In addition, hard rock mining exposes rock which may have high concentrations of minerals and heavy metals that are known contaminate the water in the surrounding areas. I am concerned such mining practices will introduce contamination into the aquifer that feeds any nearby wells of the surrounding community.

Speaking to these experts I learned that this could impact wells within a 3-mile radius! Have all those residents been notified? The experts informed us that this project has the potential to impact both the above ground flow and underground flow of the San Joaquin River. Not only does this pose a potential threat to the nearby wells but it could also impact the San Joaquin River and all that it supplies down river.

Additionally, the CEMEX proposal does not consider the additional impact on the water supply for the area as a result of the pending Friant Ranch Development near the quarry site that was approved by the County

Because of all of this, I have serious concerns that nearby wells will be severely impacted by the process of blasting and cutting through bedrock to produce a large 600 ft deep hole resulting in a depleted and/or contaminated water supply.
It was recommended by the experts we spoke with that the following items be looked at during the scoping process:

- What is the current depth of groundwater now within the impacted area?
- What is the historical depth to groundwater trend within the impacted area?
- What is the depth to bedrock of the current wells within the impacted area?
- What is the depth of bedrock at the current quarry site?
- What is the currentwater quality of the wells within in the impacted area?
- What is the thickness of the aquifers that supply the wells in the impacted area?
- What are the potential impacts on depth to groundwater and aquifers above the bedrock after the bedrock is fractured?
- What is the potential migration of contaminants, natural and manmade thru fractured bedrock?
- What are proposed mitigations to keep the current home sites whole?
- What is the current status and future plans for the Friant Ranch Development already approved by the County?
- What are the impacts on Friant Ranch Development from the mining operation and if the County proceeds with the development how does that community put additional stress on the surrounding water supply?
- Is this the only location that CEMEX can get these resources? Have they explored other locations that will have less of an impact on the environmental concerns, including water supply and quality, of the surrounding communities?

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

The San Joaquin River between Fresno and Friant has been mined for over 100 years. The best mitigation may be for CEMEX to realize, like their competitor Vulcan, that it is time to consider other locations that would have less environmental impact on the surrounding community and wildlife.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 12:22 PM
To: warner9272@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project. Please note that we received four submissions from you dated today (July 6, 2020).

Please let me know if you have any questions,

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Monfette, Christina

From: Monfette, Christina
Sent: Tuesday, July 7, 2020 8:23 AM
To: warner9272@gmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project. Please note that we received 7 total comment submissions from your email address, 5 of which were dated yesterday, July 6, 2020.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18084
IP Address	73.12.169.170
Submission Recorded On	07/05/2020 9:36 AM
Time to Take the Survey	2 minutes, 1 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Holly Clinard

2. Organization/Business

Not answered

3. What is your address?

1440 N Dewitt Ave

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

hollyclinard@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Please do not do this project! One of the most significant impacts from this project isn't the size of the hole that will be blasted into the earth, but the number of trucks that will be moving rock around if the project is approved as proposed. The enormous increase in truck traffic on Friant Road from an average of 690 trips per day now, to 1,076 trips per day after the first five years of operation is terrible for our community.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 11:44 AM
To: 'hollyclinard@gmail.com'
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	17559
IP Address	2601:200:8102:75b0:359d:f0eb:1304:b801
Submission Recorded On	06/22/2020 3:54 PM
Time to Take the Survey	16 minutes, 25 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Harjinder Kaur

2. Organization/Business

home owner

3. What is your address?

15255 Mesa View

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

tiger_732@hotmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I have major concerns on this project, I do not want the hard rock mining around our neighborhood. It will affect the air quality, there will be air pollutio which will be harmful for my mother and my child health who are asthma patients.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

It will effects the land, air, and wildlife. We don't want to distorted the view and wildlife. mining will effects our houses and water. we already having issues with the our wells not prolific producers of water. The dust, noise, night time lighting will be disturbing our life style. It will increase the crime rate in our neighborhood.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Monfette, Christina

From: Monfette, Christina
Sent: Monday, June 29, 2020 9:31 AM
To: tiger_732@hotmail.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

Please let me know if you have any questions. Comments relating to the scope of the application are being accepted through July 6, 2020, so if you have any additional comments, we request that you submit them before that date.

Chrissy Monfette | Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18011
IP Address	206.169.138.6
Submission Recorded On	07/02/2020 11:48 PM
Time to Take the Survey	5 minutes, 32 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Inger Aliason

2. Organization/Business

Not answered

3. What is your address?

622 E. Utah Ave, Fresno, CA 93720

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

ipaliason@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

If this project moves forward, I am extremely concerned about the environmental impact. There will be increased truck traffic leading to increased exhaust/emissions and noise. The construction will also lead to noise, dust/worsened air quality and ultimately likely destruction of our San Joaquin rive area.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 10:41 AM
To: 'ipaliason@gmail.com'
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18039
IP Address	2601:204:0:8290:d927:da57:53ca:3c06
Submission Recorded On	07/03/2020 2:20 PM
Time to Take the Survey	25 minutes, 3 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Jeremy Aliason

2. Organization/Business

Not answered

3. What is your address?

622 E. Utah Ave.

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

Jraliason@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

I'm am opposed to the expansion by the company. It will adversely affect the my property value by creating more loose dust, increasing heavy truck traffi -along Friant road, act as an environmental threat to the water quality of the San Joaquin River, crate unwanted and dangerous noise levels with explosions it will also create earthquake like disturbances that could cause damage to the foundations and structures of buildings and homes.
It also creates potential liability for the company and the city/county for purposely allowing a nuisance to be created in our neighborhoods and communities.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Move the plant to an isolated location away from Fresno's water table and the San Joaquin River.

Limit the size of the excavation if approved to 1/10 of the current proposal.

Deny the use of explosives for excavation.

Provide financial compensation to supporting the San Joaquin River Parkway, the surrounding neighborhoods, businesses and residents.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 10:50 AM
To: 'Jraliason@gmail.com'
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	17996
IP Address	2601:204:380:6c60:7837:8666:c5de:fd4f
Submission Recorded On	07/02/2020 5:46 PM
Time to Take the Survey	14 minutes, 27 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Joanne Allen

2. Organization/Business

Retired educator

3. What is your address?

645 e Champlain dr. #139, 93730

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

Joannealleno@me.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

1. The traffic on Friant is already a hazard due to the amount of traffic. The traffic is greatly impacted already by the trucks from the existing rock busines (soon to close I believe.) Woodward Park is a major destination for Fresno families and parking there is often overcrowded causing many families crossing Friant rd. To cross fearfully.

2. The disregard to the environment and resource of the San Joaquin River would negatively and permanently scar our already depressed area.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Fresno is a depressed, economically weak hub of the valley. To save what we can to attract economic development we have to enhance what positive features we already have. .ie. San Joaquin River and Parkway conservatory.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 10:24 AM
To: Joanneallen0@me.com
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18100
IP Address	2600:1010:b113:e657:5509:12a0:f081:7a10
Submission Recorded On	07/05/2020 8:59 PM
Time to Take the Survey	9 minutes, 26 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Jonah Bassman

2. Organization/Business

NA

3. What is your address?

2136 e Olympic. Ave

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

No

5. Please provide your email address.

jonah.bassman@gmail.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

The longterm health of the river will surely be impacted by this operation. Okay, I know we need cement and I recognize we have to get it from somewhere, but consider this very seriously: if and when (likely 'when') the river is affected, all these people with families moving into this development area in the north will be seriously disillusioned. The temporary disturbances made by the work of the new site (could be pretty loud), would also be an issue. I think it's a bad idea and I think must be other potential sites which might serve the community better for the long-term. Thanks for reading

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Let's find a different site and do the same thing there, I think it might be annoying for the company to have the site be maybe slightly further away but I think it's vital to re-evaluate this.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 12:06 PM
To: 'jonah.bassman@gmail.com'
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	18092
IP Address	73.235.187.57
Submission Recorded On	07/05/2020 5:22 PM
Time to Take the Survey	7 minutes, 34 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

James Davis

2. Organization/Business

Not answered

3. What is your address?

18933 Via Bellagio, Friant 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

mrjimmydavis@aim.com

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

As an area resident, I am extremely concerned about the negative impacts of this project, including damage to our air quality, our water supply, the river environment, and our roads. The impact on traffic alone could be awful. Please do not permit this massive, one-hundred-year commitment to damage my neighborhood, the river, our water supply, and our precious air quality.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Not answered

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Monfette, Christina

From: Monfette, Christina
Sent: Monday, July 6, 2020 12:01 PM
To: 'mrjimmydavis@aim.com'
Subject: EIR 7763 - Confirmation of Receipt of Online Comments

Good morning

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

As requested, your email address has been added to our list to receive digital notices relating to this project.

Please let me know if you have any questions,

Chrissy Monfette| **Planner**
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	16207
IP Address	23.29.4.227
Submission Recorded On	06/10/2020 4:14 PM
Time to Take the Survey	45 minutes, 38 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

James & Diane Durando

2. Organization/Business

Resident in area

3. What is your address?

15462 N Friant Road, PO Box 349 Friant CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

jimdiane@netptc.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Land Use/Planning: When the current residences on Friant Road were built it was under a use permit for aggregate mining until the supply was exhausted. The permitting of hard rock mining of depths up to 600 ft with blasting exceeds and dramatically changes the original intent of the existing county plan.

The county Planning Commission has zoned this location for housing. You are aware John Thomason has received a variance on the AE20 zoning to allow him to subdivide into smaller parcels the land next to Friant Road. How can the planning commission promote housing in this area and then switch to an entirely different use? This does not appear ethical. A mining operation of this type is incompatible within a residential setting causing health health issues, well documented in numerous studies, and economic depression of property. I would ask you to evaluate other blasting and deep mining operations in residential settings to see how the residents feel this impacts their homes and lives. One such community is Thompson Connecticut. The current blasting is disturbing residents in Thompson. I am asking for at least evaluations of 3 such locations where blasting is in a residential area. This will enable the planning commission to get a realistic understanding of how this will impact the lives of the current residents and constituents of Fresno County on Friant Road.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

To stop the planning until adequate reviews and studies can be completed by independent sources. Not just the study that CEMEX paid for. This is being pushed too fast. People did not have time to respond. From receipt of the first letter to the first hearing was less than 2 weeks. The Fresno Bee had an article in the paper on January 13, 2020 regarding the proposed plant. Why was it taken 6 months for official notification of this proposal to be sent to residence?.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Submitter DB ID	16248
IP Address	23.29.4.227
Submission Recorded On	06/11/2020 4:18 PM
Time to Take the Survey	36 minutes, 9 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

James R Durando

2. Organization/Business

resident

3. What is your address?

15462 North Friant Road Friant CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

jimdiane@netptc.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Scoping Comments

11 June 2020

J. Durando

Land Use/Planning

I have concerns with the CUP for the Cemex Rockfield site and how it fits in with the County of Fresno's General Plan. The Friant Community Plan was originally formulated to provide an organized set of guidelines for the development of this community. It is one of only two areas of redevelopment in the county, the other being Laton.

The Friant Community Plan was initially created on July 23, 1964, with updates on September 25, 1975, June 29, 1978, October 20, 1983 and most recently according to the Fresno County website in 2011 in conjunction with the Friant Ranch Development. The Friant Ranch Development calls for 2,683 single family homes, 263 multiple family units, and over 250,000 square feet of commercial development with 50 more residential units within the area.

Included in the development will be 15 miles of trails for the estimated final population of approximately 7,000 people. The southern boundary for this project is within less than .5 miles from the current aggregate extraction site. The number of people living and working within the influence area of the mining operations will be very substantial.

In 1992 the County of Fresno adopted the Friant Specific Plan which called for the development of a sewage treatment facility to serve the existing residents of Friant and future residents. This has never occurred, but is still in the plan for the future. The Friant Specific plan boundary is contiguous with the northern boundary of the proposed CUP Cemex Rockfield site. It seems like these two components are not compatible. The plan calls for residential development and the CUP Cemex Rockfield calls for an industrial rock processing site to be adjacent to the adopted Friant Specific Plan.

There are 27 houses in Fresno County within less than a mile radius from the center of the site. If deep hard rock mining and processing occur those will impact the area in a number of negative ways. This is a residential area and the CUP Cemex Rockfield proposes would violate 5 of the 12 themes as stated in the County of Fresno General Plan.

Those themes are:

Efficient Functional Land use pattern-Industrial Mining and Processing is not compatible with a residential area

Resource protection-Air quality, water quality, hydrologic systems, noise and light pollution with be impacts

Health and Safety Protection-Exposure to particulates, heavy metals like Manganese, greenhouse gas emissions

Health-Well Being-Emotional Stress, Air Quality,

Enhanced Quality of Life-An Industrial Mining and Processing Operation in an area of thousands of houses eventually will NOT improve the quality of life.

How does the County Intend to solve the situation with their apparently conflicting ideas regarding zoning? What solutions will they have?

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Mitigation would be to allow the gravel extraction to continue until the resource is extracted, and then rehabilitate the area as required by the original CUP from circa 1980.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfettc@fresnocountyca.gov

Submitter DB ID	16293
IP Address	23.29.4.227
Submission Recorded On	06/13/2020 1:41 PM
Time to Take the Survey	22 minutes, 26 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Diane Durando

2. Organization/Business

Resident

3. What is your address?

15462 N Friant Road

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

jimdiane@netptc.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
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Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
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Aesthetics: Comment on 16 A, points 1-4. Theses are the opinion of a person. My concern is the aesthetics. To have large equipment for processing the cement and asphalt , large parking lots full of cement delivery trucks, cars and so forth will have a negative effect the scenic highway. This area has also been designated residential and many of the homes will have an unsightly view. At the current, CEMEX Processing facility at the junction of Willow and Friant Roads the major equipment is back from the road and screened by some tree plantings. The proposed site has only a 5 foot berm and is located adjacent to the road .

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Have an independent company do a graphic visual projection, so the aesthetics can be more fairly evaluated by a committee of people. This needs to include a visual for how the proposed project will look as well as a visual as to how it would appear if mining is stopped today and the grading from the last CUP of the pits and landscaping to returned to the area.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Submitter DB ID	16311
IP Address	23.29.4.227
Submission Recorded On	06/14/2020 7:50 PM
Time to Take the Survey	53 minutes, 55 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

James R Durando

2. Organization/Business

Resident

3. What is your address?

15462 North Friant Road, Friant, CA 93626

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Yes

5. Please provide your email address.

jimdiane@netptc.net

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14 June 2020

Hydrology/Water Quality

I am deeply concerned about the impact of the Rockfield Mine on the Hydrology and Water Quality at the site and the impacts if will have in the area. As retired Biologist I understand how natural geologic systems work and how they can be impacted by anthropormorphic activities. The subsurface rock in this area were formed during a Pre-Tertiary Period over 65 million years ago. This basement complex is very deep and overlain by much younger strata, with the last few hundreds of feet in this area being granite and alluvial deposits.

Mining to 600 feet will create some changes in the water table through fracturing and changing infiltration rates, through compaction and disrupted soil profiles. It is possible to have decreased surface run off when permeable rock strata are exposed,impacting the natural hydrologic processes. These will have an impact of the already sensitive water table in the area and the subterranean inflow into the San Joaquin River. The water table flows to the south west in this area so the multiple impacts on water quality at the mine site will be transported into the river. Mining creates some unnatural impacts on water quality. When material is exposed and extracted it allows soluble salts to more easily go into solution and exposure to air with oxygen present creates a set up for REDOX reactions that can form and release toxic compounds into air, water and soil.

The Clean Water Act (1972) prohibits the contamination of surface waters. The San Joaquin River is already impacted along the course from Friant Dam downstream. With a number of section 303d violations-ranging from heavy metals, group A pesticides, Chlorpyrifos, Selenium and others and does not need another point source of pollution in the form of the Rockfield Mine.

Water table disruption, contamination, and degradation need to be avoided.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Testing for water, soil, and air need to be done at the Plant Site to see what impacts have been created during the operation of the sorting, washing, crushing, and storage of the materials. The settling pond water, invertebrate animals and phytoplankton, soil and adjacent vegetation need to be tested fc contaminants.

Water flow studies need to be completed to see the direction and rate of flow that the aquifer exhibits.The impacts of mining on infiltration, soil profile disruption and compaction throughout the Rockfield Mine site need to be modeled and shared with the public.

Water table studies need to be performed on all domestic wells in a two- mile radius of the site. Sounding tubes can be used to measure water levels and provide a baseline reference on all domestic wells and a plan must be created to mitigate the dropping of the water table if mining occurs.

Calculations for water loss due to evaporation need to calculated, and shared with the public to give an idea of how much evapotransportive loss will occur, also impacting the water table

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Tuesday, June 16, 2020 9:34 AM
To: Jim Durando
Subject: Confirmation of Receipt of Comments (EIR 7763)

Good morning,

I am sending you this email to confirm receipt of the comments you submitted regarding the Cemex Rockfield Modification Project through our online comment system. Your comments were received prior to the deadline and therefore will be considered as part of the scoping review for this project. This part of the process helps to determine where the Environmental Impact Report should focus in order to address potentially significant environmental impacts.

If you have any questions about this project, please feel free to reach out to me with the contact information below.

Thank you,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	16401
IP Address	23.29.4.227
Submission Recorded On	06/17/2020 10:50 AM
Time to Take the Survey	14 minutes, 17 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

Diane Durando

2. Organization/Business

Resident

3. What is your address?

15462 N Friant Road

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

jimdiane@netptc.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

LAND VALUES-- No where in the CUP does it address the impact of property and home values on the current properties. It appears from studies I have read that we could expect a significant reduction in our value.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Property and home appraisals as of today as if this project was not under consideration. So we have a base line property value. How will the individual resident be compensated for the loss of value in their property to include future property appreciation that would occur? Would this be held in bond so the property owners are guaranteed payment?

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette

Fresno County Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Wednesday, June 17, 2020 11:04 AM
To: Diane Durando
Subject: EIR 7763 - Confirmation of Receipt of Comments

Good morning,

Thank you for providing comments on this application through our online comment card system. This email is being provided as receipt of your submission of comments and confirms that those comments were received during the public comment period for this application. Your submission will help guide the development of the Draft EIR, which is being prepared to determine the likely impacts from this project.

Please let me know if you have any questions,

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	16409
IP Address	23.29.4.227
Submission Recorded On	06/17/2020 12:44 PM
Time to Take the Survey	3 minutes, 32 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

James R Durando

2. Organization/Business

resident

3. What is your address?

15462 North Friant Road

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

jimdiane@netptc.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
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Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
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Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Scoping Comment Quarry Restoration

I am not able to locate the Exhibits (Located in back of Report) in the Project Description/Operational Statement for the CEMEX Rockfield Modification Project. I was curious to look at both C Sheet 3: Quarry Site Existing Conditions and C Sheet 8: Quarry Site Reclamation Plan. It seems like those have been omitted from this report along with all of the Exhibits.

I am curious as to the Quarry Restoration Plan as it is poorly covered in the Project Description. It consists of two paragraphs that are vague and as stated do not complement or benefit the San Joaquin River Parkway Master Plan. The restoration plan states they will reclaim 122 acres of open space, riparian and open water wildlife habitat surrounding the 95-acre reclaimed pond. The slopes of the pond will be seeded with native grasses and forbs in addition to native vegetation that will be planted. Without seeing the exhibits missing in the report that Cemex provided to the county it is hard to see how this will be carried out.

If the 95-acre pond is at the bottom of the excavated pit it will be almost 600 feet below ground surface and inaccessible. Will the sides be stepped into the bottom or the mine? Any planting on the benches as stated in the plan will not grow if just seeded into the granite surface and surely would need irrigation for a period of time to get established. The water could have high levels of heavy metals like Manganese after 100 years of continual mining, crushing and concentrating in the waters that fill that basin. The Restoration Plan will do nothing to complement or enhance the goals of the SJRP Master Plan. The fact that it would not occur for 100 years and just be an operational quarry and processing plant is not in line with their master plan. The restoration plan is not well thought out and will not create any quality wildlife habitat. Why can't we see the plan that should have been included in the report?

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

There is no way to restore the quarry project to be complementary or enhancing to the SJRP Master Plan. The huge hole in the ground, the 100 year time frame, and the degrading of the area through the mining process are the opposite of factors that would benefit the Parkway.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Monfette, Christina

From: Monfette, Christina
Sent: Wednesday, June 17, 2020 1:31 PM
To: Diane Durando
Subject: Confirmation of Receipt of Online Comments (EIR 7763)

Good afternoon,

Thank you for providing comments on the subject application. Please include the project reference (EIR 7763) in the subject line of all communications with the County regarding this project. Doing so allows staff (and our supervisors, including elected officials) to locate relevant project information and provide a prompt response to inquiries.

This email is being provided to confirm receipt of your comments relating to the Rockfield Modification Project proposed by Cemex (submitted June 17, 12: 44 PM). Your comments will be considered in the development of the scope of impacts to be considered by the Draft EIR.

If you have any questions or if you would like to submit additional comments, please don't hesitate to reach out to me at the contact information below.

Chrissy Monfette| Planner
Department of Public Works and Planning | Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4540 Direct: (559) 600-4245
Your input matters! Customer Service Survey

Submitter DB ID	16404
IP Address	23.29.4.227
Submission Recorded On	06/17/2020 11:35 AM
Time to Take the Survey	1 minutes, 40 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

James R Durando

2. Organization/Business

resident

3. What is your address?

15462 North Friant Road

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

jimdiane@netptc.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
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Scoping Comment Regarding Hours of Operation

The CUP for the Cemex Rockfield project has indicated that they would have operations running from 4 am to 9 pm 5 days of the week, and a reduced operating period on Saturday. That is a seventeen-hour period Monday through Friday which will create a nuisance for all of the residents and users of Friant Road in the vicinity of the site.

The current CUP for the quarry has operating times listed as 7 am to 4 pm but they do not abide by those hours and start with their operations well before 6 am on the majority of days. If they are so blatant about ignoring the current times set in the CUP agreement why would anyone expect them to pay attention to the new CUP?

This will create a long continuous series of noise impacts for the vicinity that is unacceptable

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Mitigation measures would be reducing the time period in which they are able to operate. If a reduced time period-like the current 7 am to 4 pm is too short for all of the new operations then they may need to rethink their plan and eliminate some of those. It is unreasonable to have almost 75% of each week day be impacted by continuous noise created by the varied operations in this residential area.

This project will directly violate at least five of the major themes set forth in the Vision Statement of the Fresno County General Plan. It also completely ignores the LU-C which states;

"To preserve and enhance the value of the river environment as a multiple-use, open-space resource; maintain the environmental and aesthetic qualities of the area; protect the quality and quantity of the surface and groundwater resources; provide for long-term preservation of productive agricultural land conserve and enhance natural wildlife habitats; and maintain the flood-carrying capacity of the channel at a level equal to the one (1) percent flood event (100-year flood). "

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
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Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Submitter DB ID	16409
IP Address	23.29.4.227
Submission Recorded On	06/17/2020 12:44 PM
Time to Take the Survey	3 minutes, 32 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

James R Durando

2. Organization/Business

resident

3. What is your address?

15462 North Friant Road

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jimdiane@netptc.net

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You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Submitter DB ID	16456
IP Address	23.29.4.227
Submission Recorded On	06/18/2020 4:56 PM
Time to Take the Survey	24 minutes, 29 secs.

Page 1

Thank you for taking time to provide seoping eomments on Environmental Impaet Report (EIR) No. 7763 - CEMEX Mining Projeet. All eomments reeeived become a part of the publie record.

1. What is your name?

James R Durando

2. Organization/Business

resident

3. What is your address?

15462 North Friant Road, Friant, CA 93626

4. Would you like to be added to the mailing list for this projeet? If so, please provide your email address below.

Yes

5. Please provide your email address.

jimdiane@netptc.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

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Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

6. Please provide your comments about the project here. Do you have concerns or suggestions? Are there any existing conditions on the site or in the vicinity of the project site we should consider in the EIR analysis? If so, please describe them.

Scoping Comment-Hydrology-Water Table Disruption

"Is anyone grateful for the drought? CEMEX is. Founded in Mexico in 1906, CEMEX, one of the world's largest building material suppliers and cement producers, runs operations all across the globe. It is conveniently blaming the drought on the fact that residential wells in Lemon Cove are drying up – when in fact the evidence suggests otherwise."

This is the first paragraph of an article written by Catherine Doe and published on 18 July 2014 in the Valley Voice. Cemex mined an area at Stillwell Lak and excavated a 60-foot-deep hole. The hole has filled up with at least 1000 acre-feet of water from the aquifer that those wells in Lemon Cove depended on for water.

I am concerned that the destruction of the aquifer at our home site, and our neighbors to the north and south will be impacted by the mining operations that plan to create a 600-foot-deep hole. What mitigation is in place to prevent this from occurring. Without water all of the properties on the east side of Friant Road will become unlivable. Cemex tried to shift the blame to a drought year but those same wells had been through previous drought events and not been impacted. The mining process caused the failure of those well.

There is no mention of a plan prevent the loss of our domestic wells that we depend on to make our homes habitable. Just ignoring the problem does not make it go away. There will be a negative impact from the mining operation on the water table, and that is documented in numerous cases in situations like the proposed project.

7. Mitigation measures are changes to the design, phasing, or operation that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address impact related to the development and operation of this project.

Guarantees must be put in place, and enforced to ensure that there is no disruption to the domestic water supplies to our home or those of our neighbors. Cemex should post a bond to provide for damages that their mining will cause to all of our wells. They should be responsible for the complete cost of drilling new wells and water systems for each house as needed. Their offer to cover half the cost in Lemon Cove is an example of them not wanting to be responsible for the damages they cause. None of us should have to spend any money to mitigate damages that the project will cause.

You can review the Notice of Preparation (NOP) for this project at: http://www.co.fresno.ca.us/EIR. If you have questions about this project, please contact:

Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Submitter DB ID	16456
IP Address	23.29.4.227
Submission Recorded On	06/18/2020 4:56 PM
Time to Take the Survey	24 minutes, 29 secs.

Page 1

Thank you for taking time to provide scoping comments on Environmental Impact Report (EIR) No. 7763 - CEMEX Mining Project. All comments received become a part of the public record.

1. What is your name?

James R Durando

2. Organization/Business

resident

3. What is your address?

15462 North Friant Road, Friant, CA 93626

4. Would you like to be added to the mailing list for this project? If so, please provide your email address below.

Yes

5. Please provide your email address.

jimdiane@netptc.net

The Environmental Impact Report (EIR) could evaluate impacts to the following environmental topics:

Aesthetics	Agriculture/Forestry	Air Quality
Biological Resources	Cultural Resources	Geology/Soils
Hazards/Hazardous Materials	Land Use/Planning	Hydrology/Water Quality
Mineral Resources	Noise	Population/Housing
Public Services	Recreation	Transportation
Utilities/Service Systems	Greenhouse Gas Emmissions	Tribal Cultural Resources

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Christina Monfette
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: cmonfette@fresnocountyca.gov

Associated Builders and Contractors, Inc.

Northern California Chapter

RECEIVED
COUNTY OF FRESNO
JAN 2 1 2020
DEPARTMENT OF PUBLIC WORKS AND PLANNING
DEVELOPMENT SERVICES DIVISION
CUP 3666 + 3667
EIR 7763

January 20, 2020

The Honorable Nathan Magsig
Fresno County Board of Supervisors
2281 Tulare Street, Room 300
Fresno, CA 93721

Dear Supervisor Magsig:

As local developers and contractors we recognize that the cost of construction is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure.

The demand for new construction in the Fresno region is projected to grow, requiring over 6.1 million tons of construction aggregate a year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped from outside the region. Without the benefit of local quarries, transportation costs can increase $0.22 cents per ton, per mile. These higher construction costs are passed on to public businesses, homeowners and in the case of public infrastructure, taxpayers.

CEMEX has been a critical partner in our efforts to meet this demand and growing our region's economy. Aggregate from their Rockfield (Friant) Quarry has supplied the Save Mart Center at California State University Fresno, the Chukchansi Ball Park, Clovis Community College, Clovis Medical Center and the many businesses, homes, roads and schools found in most neighborhoods in your district.

In December of 2019, CEMEX submitted an application that addresses the county's growing demand for construction aggregate, open space and habitat restoration. We urge your favorable consideration of their application without delay.

Thank you for recognizing the benefits of having a quarry located in your community.

Sincerely,

Nicole Goehring
V.P. Government and Community Affairs

CC: Ms. Chrissy Monfette, Fresno County Department of Public Works and Planning

4577 Las Positas Road, Unit C • Livermore, CA 94551 • (925) 474-1300 • Fax (925) 474-1310 • www.abcnorcal.org

Associated Builders and Contractors, Inc.

Northern California Chapter

RECEIVED
COUNTY OF FRESNO
JAN 2 1 2020
DEPARTMENT OF PUBLIC WORKS AND PLANNING
DEVELOPMENT SERVICES DIVISION
CUP 3666 + 3667
EIR 7763

January 20, 2020

The Honorable Steve Brandau
Fresno County Board of Supervisors
2281 Tulare Street, Room 300
Fresno, CA 93721

Dear Supervisor Brandau:

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Sincerely,

Nicole Goehring
V.P. Government and Community Affairs

CC: Ms. Chrissy Monfette, Fresno County Department of Public Works and Planning

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APPENDIX B-3
CEMEX PRODUCTION LIMIT LETTER

MITCHELL CHADWICK

Patrick G. Mitchell
pmitchell@mitchellchadwick.com
916-462-8887
916-788-0290 Fax

March 12, 2026

VIA E-MAIL

Tawanda Mtunga
Principal Planner
Fresno County Department of Public Works and Planning
2220 Tulare Street, Sixth Floor
Fresno, California 93721

Re: Cemex Rockfield Modification Project EIR

Dear Mr. Mtunga:

I am writing on behalf of RMC Pacific Materials, LLC ("Cemex") regarding the County of Fresno ("County") Draft Environmental Impact Report ("DEIR") dated December 2024 as part of the Rockfield Modification Project (EIR 7763) and Unclassified Conditional Use Permit Applications Nos. 3666 and 3667, currently in preparation of the Final EIR by the County.

In Chapter 2 of the DEIR, "Project Description," Section 2.2.3, "Summary of Project Characteristics," on page 2-5 of the DEIR at Table 2-1, "Rockfield Modification Project Characteristics," Cemex's "Estimated Maximum Annual Processed Aggregate Volume (including waste/fines)" was listed as 3.3 million tons, or "3.3 MT" of aggregate. (Attachment A.) Cemex understands that this 3.3 MT number is inconsistent with the analysis set forth in the air quality section which used the 3.0 MT number from Table 2-1 annual sales. (See EIR Appendix D-1, Air Quality, Health Risk, and Climate Change Impact Assessment, December 4, 2019, at p. i of the Executive Summary [Attachment B].)

This is to advise that Cemex is aware of this discrepancy between the 3.3 MT and 3.0 MT numbers, and Cemex is willing to accept a Condition of Approval for the Rockfield project that will cap the maximum production (including waste/fines) at 3.0 MT annually, which is the amount analyzed in the DEIR.

///

Please do not hesitate to reach out to me if you have any questions.

Sincerely yours,

MITCHELL CHADWICK LLP

Patrick G. Mitchell

Cc: Bryan Rome (Fresno County Deputy County Counsel)
Bruce Steubing (Benchmark Resources)
Christine Jones (Cemex)
Scott Miller (Mitchell Chadwick)

Enclosures

Attachment A

2.2.3 Summary of Project Characteristics

Table 2-1, "Rockfield Modification Project Characteristics," provides a summary of the project features.

Table 2-1
Rockfield Modification Project Characteristics

Item/Activity	Description[1]		
Existing Permits, Acres	Plant Site: CUPs 367, 2209, 3063, and 3093. Approximately 138.5 acres. Quarry Site: CUPs 367, 2032, 3063, and 3093. Approximately 352.4 acres. Total Both Sites: Approximately 490.9 acres		
Proposed Mining Acres	Plant Site: Approximately 117.6 acres Quarry Site: Approximately 281.9 acres Total Both Sites: Approximately 399.5 acres		
Mining Depth Allowed Under Existing CUPs	Plant Site: no maximum depth specified Quarry Site: no maximum depth specified		
Proposed Mining Depth	Plant Site: Approximately 85 feet bgs Quarry Site: Approximately 600 feet bgs		
Interplant Haul Via North Friant Road	Existing = 1.4 MT/year Stage 1 = 0.7 MT/year Stage 2 = None		
Estimated Aggregate Reserves Volume	Plant Site: 12 MT Quarry Site: 215 MT		
Estimated Total Sales	195 MT		
Estimated Maximum Annual Processed Aggregate Volume (including waste/fines)	3.3 MT		
Estimated Maximum Annual Aggregate Sales Volume[2] (excluding waste/fines)	Existing = 1.4 MT Stage 1 (first 5 to 10 years) = 2.0 MT Stage 1 and 2 (after 10 years) = 3.0 MT		
Estimated Annual Sales at Total 3.0 MT[3]	**Existing**	**Stage 1—Combined from both Sites**	**Stage 2—Quarry Site Only**
Aggregate[2]	1,400,000 Tons	3,000,000 Tons	3,000,000 Tons
Hot-Mix Asphalt	0 Tons (Historically 230,800 Tons)	500,000 Tons	500,000 Tons
Ready-Mix Concrete	189,500 Cubic Yards	300,000 Cubic Yards	300,000 Cubic Yards
Concrete and Asphalt Recycling	25,000 Tons (concrete only)	200,000 Tons	200,000 Tons
Depth to Groundwater	Plant Site: 10-30 feet bgs (current surface) Quarry Site: 15-40 feet bgs (current surface)		
Reclamation End Uses: Open Space, Riparian and Open Water Habitat[4]	Plant Site: Approximately 138.5 acres Quarry Site: Approximately 352.4 acres		

Item/Activity	Description[1]
Project Life	Plant Site: Up to 30 Years Quarry Site: Up to 100 Years

Table Source: CEMEX 2021.
Table Notes:
feet bgs = feet below ground surface (i.e. original ground surface before historical mining); MT = million tons; MT/year = million tons per year

1. All values are approximate.
2. Includes sales to on-site hot-mix asphalt plant and ready-mix concrete plant.
3. Typical mix of products. Actual sales mix will vary based on demand.
4. Actual final reclamation and areal extent at each site will depend on the volume and availability of overburden and process fines suitable for use as fill occurring on site.

2.3 PROJECT PURPOSE AND OBJECTIVES

The project purpose is to continue and expand existing mining and processing operations at the Plant Site and Quarry Site and reclaim the two sites when mining operations are complete.

The objectives for the proposed project are to:

1) continue to provide a reliable and sustainable, local source of high-quality aggregate to help meet the current and long-term demand (100 years) for construction materials in the Fresno region;
2) continue to utilize known aggregate reserves from existing partially mined properties, including those designated by the state and county as Mineral Resource Zone 2 (MRZ-2) (Mineral Resource Zone areas where adequate information indicates that significant mineral resources are present, i.e., sand and gravel);
3) continue to utilize high quality aggregate resources that meet the California Department of Transportation's specifications for use in Portland Cement Concrete (PCC) and Asphaltic Concrete (AC) which aggregate is important for quality infrastructure growth and maintenance because of its versatility, value, and relative scarcity;
4) maintain a local source of construction aggregate with enough annual sales capacity (3.0 MT) to encourage a healthy competitive market;
5) continue to provide aggregate resources with access to an efficient local road network;
6) continue to provide an environmentally sound project that would balance the recovery of the aggregate resource with the protection of other resources including wildlife habitat, groundwater, surface water, and air quality;

Attachment B

SESPE
CONSULTING, INC.

374 Poli Street, Suite 200 • Ventura, CA 93001
Office (805) 275-1515 • Fax (805) 667-8104

AIR QUALITY, HEALTH RISK, AND CLIMATE CHANGE IMPACT ASSESSMENT

Rockfield Modification Project
Fresno County California

December 4, 2019

EXECUTIVE SUMMARY

This Air Quality, Health Risk, and Climate Change Impact Assessment (Report) has been prepared to quantify and determine the significance of air quality, health risk, and climate change impacts associated with the proposed mining method adjustments, processing plant relocations, and production increases that would occur with the Rockfield Modification Project (Project). The Project would continue operations on two non-adjacent sites, a northern "Quarry Site", and a southern "Plant Site".

The following Project features would affect air emissions and are assessed.

- Change of the excavation method from alluvial mining to hard rock mining. This would have the following effects:
  - Add drilling and blasting;
  - Add a primary crusher and hydraulic shovel in the pit; and
  - Add processing plant equipment to manufacture sand.
- Relocation of the ready-mix concrete and asphalt plants on the Plant Site 2 miles north to the Quarry Site.
- Increase in aggregates production from historical levels of 1,374,272 tons per year to 3,000,000 tons per year.
- Increase in Ready Mix Concrete production from historical levels of 189,550 cubic yards per year to 300,000 cubic yards per year.
- Increase in recycled materials processing from historical levels of 25,000 tons per year to 200,000 tons per year.
- Addition of a state-of-the-art asphalt plant, burning natural gas or propane and equipped with best available control technology (BACT) which would produce up to 500,000 tons per year.

Project emissions are quantified by subtracting existing emissions occurring at the Quarry and Plant Sites (Baseline) from emissions with the Project (Future). Baseline emissions are estimated using historical fuel use data from off-road vehicles, aggregates production records, and other specifications (e.g. engine information) provided by Cemex.

APPENDIX D-3
REVISED AIR QUALITY, HEALTH RISK AND CLIMATE CHANGE IMPACT ASSESSMENT

SESPE CONSULTING, INC.
A Trinity Consultants Company
3990 Old Town Ave. Suite A203 • San Diego, CA 92110 • Office (619) 894-8669 • Fax (805) 667-8104

AIR QUALITY, HEALTH RISK, AND CLIMATE CHANGE IMPACT ASSESSMENT

CEMEX Rockfield Modification Project
County of Fresno, California

Revised, May 13, 2026

Prepared for:
CEMEX Construction Materials Pacific, LLC
4120 E Jurupa Street, Suite 202
Ontario, CA, 91761
(909) 974-5554

Prepared by:
Scott D. Cohen P.E., C.I.H. – Principal Engineer

Andre Almeida P.E. – Senior Consultant

Sespe Consulting – *A Trinity Consultants Company*
3990 Old Town Ave, Ste A203
San Diego, CA 92110
(619) 894-8669

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SESPE CONSULTING, INC.
A Trinity Consultants Company
3990 Old Town Ave. Suite A203 • San Diego, CA 92110 • Office (619) 894-8669 • Fax (805) 667-8104

AIR QUALITY, HEALTH RISK, AND CLIMATE CHANGE IMPACT ASSESSMENT

Rockfield Modification Project
Fresno County California
State Clearinghouse No. 2020060123

Revised, May 13, 2026

EXECUTIVE SUMMARY

This Air Quality, Health Risk, and Climate Change Impact Assessment (Report) was prepared for inclusion in the Final Environmental Impact Report (FEIR) for the subject Project. It incorporates prior technical documentation included in Appendices D-1, Air Quality, Health Risk, and Climate Change Impact Assessment (Sespe, December 4, 2019), and D-2, Addendum No. 2 to the Air Quality, Health Risk, and Climate Change Impact Assessment, Revision 2 (Sespe, March 7, 2022) of the Draft Environmental Impact Report (DEIR). The following topics in this report are summarized below:

- Project features in the DEIR.
- Technical differences between this Report and the DEIR documents.
- Regional and localized air quality impacts including health risk assessment (HRA) and odor.
- Climate change impacts.

Project features described in the DEIR and assessed in this analysis, which emit air pollutants and/or greenhouse gases (GHGs) include the following:

- Change of the excavation method from alluvial mining to hard rock mining. This would have the following effects:
    - Add drilling and blasting;
    - Add a primary crusher and hydraulic shovel in the pit; and
    - Add processing plant equipment to manufacture sand.
- Increase mining and sales rates to 3 million tons per year (tpy).
- Relocate the ready-mix concrete (RMC) and hot-mix asphalt (HMA) plants from the Plant Site 1.8 miles north to the Quarry Site.
- Increase RMC production from the historical rate of 189,550 cubic yards per year (cy) to 300,000 cy.
- Increase the recycled materials processing rate from historical levels of 25,000 tpy to 200,000 tpy.
- Add a state-of-the-art HMA plant, burning natural gas or propane and equipped with best available control technology (BACT) that would produce up to 500,000 tpy.

Project features that have been clarified in this analysis and are different from what was analyzed in the DEIR are described below in Table ES0.

Table ES0 – Differences Between This **Report** and the DEIR

Project Feature Described in the DEIR	**Project Feature in This Report**	**Explanation**
Baseline Activity Levels. Excavation: 1,374,272 tpy. Sales: 1,374,272 tpy.	 Excavation: 1,580,413 tpy. Sales Rate: 1,374,272 tpy.	DEIR analysis assumed the same baseline rate of excavation and sales, without considering a waste factor. Waste factors of 15% for alluvial mining and 10% for hard rock mining are used to calculate emissions from transport and placement of waste fines.
Future Activity Levels. Excavation: 3.0 million tpy. Sales: 3.0 million tpy. Waste fines handling emissions are omitted.	 Project will accept a Condition of Approval that limits the excavation rate to 3.0 million tpy or less. Emissions from onsite transport and placement of waste fines included.	Future excavation rate remains 3.0 million tpy and waste factor is now accounted for. 3.0 million tpy sales rate is conservative because waste fines are double counted (i.e., waste fines are both placed on-site and sold as product). Emissions related to waste fines are assessed as discussed above for the Baseline.
Particulate emissions from drilling are omitted.	Particulate emissions from drilling are included.	Drilling emissions added in response to comments on the DEIR and as needed to be consistent with the methodology referenced in the DEIR.
Maximum Daily Rates Baseline: 3,166 tons per day (tpd). Project: 7,333 tpd.	 Baseline: 6,000 tpd. Project: 14,000 tpd.	Original daily rates in the DEIR were too low. Operation at the DEIR daily rates would prevent achievement of DEIR annual rates. Daily rates were updated to be consistent with the annual rates which are unchanged from the DEIR.

Project Feature Described in the DEIR	Project Feature in This Report	Explanation
Engine Emissions from Offsite Diesel Engines Potential to emit (PTE) methodology and EMFAC2017 Fresno County fleet average emission factors for the following years are used. Baseline: 2005. Project (Phase 1): 2019. Project (Phase 2) 2049.	 Regional Increment Analysis methodology (Appendix J) and EMFAC2025 Fresno County fleet average emissions factors for the following years are used. Baseline: 2018. Project (Phase 1): 2026. Project (Phase 2): 2056.	Revised methodology accounts for the Project's regional impact. The Project's approval would not result in increased demand for aggregates in the region – if the Project is not approved, regional aggregates buyers would simply purchase aggregates from other locations in the same region. A regional increment analysis was conducted to determine the Project impact on regional emissions. The regional increment analysis is consistent with methods used by the County in the previously approved Riverbend Sand and Gravel Mine Project Final EIR (2015), Clearinghouse No. 2013071097. EMFAC version was updated to better represent the current best practice and circumstances surrounding the Project.
Engine Emissions from On-Site Diesel Engines. EMFAC2017 Fresno County fleet average emission factors (all speeds) for on-road engines operating in the following years are used. Baseline: 2005. Project (Phase 1): 2019. Project (Phase 2): 2049.	 EMFAC2025 Fresno County fleet average emission factors (15 mph) for on-road engines operating in the following years are used. Baseline: 2018. Project (Phase 1): 2026. Project (Phase 2): 2056.	EMFAC version was updated to better represent the current best practice and circumstances surrounding the Project. The 15 mph factors are more representative of conditions on-site because speed is limited to less than 15 mph.

Project Feature Described in the DEIR	Project Feature in This Report	Explanation
Effect of GHG Regulations on Diesel Engine Emissions Qualitative analysis based on the regulatory setting in 2019 with the Project purchasing California compliant fuel produced by entities subject to State GHG regulations (i.e., Cap-and-Trade and/or Low Carbon Fuel Standard(LCFS)).	Quantitative analysis based on the regulatory setting in 2026 wherein the amount of renewable diesel (RD) in ultra-low sulfur diesel (ULSD) is benchmarked and offroad fleets are required to use only RD (see Appendix L).	Off-site on-road engines use fuel that meets the benchmarks established for each future year. For instance, in 2018 the carbon intensity of ULSD is reduced by 2% as compared to pre- LCFS levels reported by EMFAC. In 2026, the carbon intensity of ULSD is reduced by 18.6% as compared to pre-LCFS levels reported by EMFAC. Offroad engine requirement to use only RD results in approximately a 50% reduction in carbon intensity as compared to the pre-LCFS levels that were quantified in DEIR (Appendix L).
Dust control methods and efficiencies in the DEIR are documented by reference.	Dust control methods and efficiencies are documented in a Fugitive Dust Control Plan (Appendix K) that incorporates best management practices reassessed in 2026.	The DEIR acknowledges that a fugitive dust control plan is required to be approved by SJVAPCD and explains efficiencies assigned for various controls but does not collect the information into a plan. The updated report includes a draft dust control plan prepared in response to comments on the DEIR and which is amplified to reflect changes in the circumstances surrounding the Project by updating best management practices to those available in 2026. The final dust control plan is subject to review by the SJVAPCD.
Criteria pollutant modeling is conducted to determine concentration of carbon monoxide because carbon monoxide emissions exceed the SJVAPCD screening threshold of 100 lb/day.	In response to comments, criteria pollutant modeling is conducted for each criteria pollutant and compared to state and national ambient air quality standards as required by SJVAPCD policy (APR 2030, 6/2018) that was adopted after air quality analysis commenced for the Project.	SJVAPCD policy APR 2030 requires that each criteria pollutant be modeled when emissions of one criteria pollutant exceed the screening threshold of 100 lb/day.

Project Feature Described in the DEIR	Project Feature in This Report	Explanation
Cancer risk is assessed for a 60-year exposure and cancer burden is omitted because residential cancer risk is determined to be a negative value at each census block centroid.	Cancer risk is assessed for a 70-year exposure duration. Two 70-year analyses are performed. Specifically, the following durations are included: 1. Years 1 thorough 70 (Phase 1 and part of Phase 2); and 2. Years 31 through 100 (Phase 2). Cancer burden is reported including a figure showing the census block centroids geographic relation to Project cancer risk isopleths.	Updated based on comments received on the DEIR.
HRA evaluates risk from on-site emissions to receptors located near the Project site(s).	HRA evaluates risk from on-site emissions to receptors located near the Project sites and from off-site emissions to receptors located along truck haul routes.	Updated based on comments received on the DEIR.
Dispersion models contain receptor grids that are sparce.	Dispersion models align with current SJVAPCD guidance on receptor grid density.	Updated based on comments received on the DEIR as needed to conform with current SJVAPCD guidance.
Dispersion and HRA models use software, data, and guidance available in 2019 when the original report was prepared.	Current (2026) software versions, methods, and meteorological/monitoring data is used.	Updated to be consistent with currently available software and data.

Using refined methods and parameters described above, the emissions inventory was revised, models updated, and significance determinations reviewed. The revised assessment shows the impact conclusions from the DEIR remain unchanged.

Each air quality and climate change impact statement from CEQA Guidelines Appendix G Environmental Checklist Form (California Code of Regulations, Title 14) is used to determine the significance of Project impacts and each impact is discussed below in the following order:

- Impact statement.
- Project impact significance determination.
- Mitigation measures, if necessary.
- Mitigated Project impact results and significance determination.

1. Air Quality

Summary of Impact AQ-1) **The Project would not conflict with or obstruct implementation of any applicable air quality plan. Potential conflicts with applicable air quality plans have been analyzed and ruled out (see Section 3.5.1).**

The Project would not conflict with or obstruct specific control measures and is consistent with attainment goals in an air quality plan. The Air Quality Management Plans (AQMP) represent a broader legislative agenda which can be represented in the form of SJVAPCD rules and thresholds such as the ones which are analyzed in this Report. See report sections 3.1.4.2 Rules and Regulations and 3.3 Significance Thresholds.

Summary of Impact AQ-2) **The Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable Federal or State ambient air quality standard.**

Table ES1 presents Project annual emissions for each criteria pollutant and the associated significance criteria established by SJVAPCD which are applied to total emissions from permit-required stationary sources and permit-exempt sources separately though the significance criteria for each are equivalent. As shown in Table ES1.

Table ES1. Annual Project Emissions and Comparison to APCD Significance Criteria

Criteria Pollutant	Permit – Required Sources (tons/yr)			Permit - Exempt Sources (tons/yr)		
	Project	Significance Criteria	Project Exceeds?	Project	Significance Criteria	Project Exceeds?
ROG	6.2	10	No	-0.1	10	No
CO	34.3	100	No	49.4	100	No
NO_X	3.4	10	No	5.2	10	No
PM_{10}	9.8	15	No	-25.4	15	No
$PM_{2.5}$	2.9	15	No	-6.3	15	No
SO_X	0.9	27	No	1.4	27	No

Source: Appendix G.

Note: Negative values represent emissions reductions due to newer technology and lower emission equipment as would be expected from phase in of existing engine regulations.

Impact analysis for a project's potential to exceed or contribute to exceedance of an ambient air quality standard (AAQS) normally involves modeling the mass of emissions to predict ground-level concentrations

that would occur for each pollutant's averaging period(s) at the location of the maximum concentration offsite (typically the property boundary). SJVAPCD has established a screening level of 100 lb/day that is used to screen out of modeling for impacts that are unlikely to exceed a threshold. Baseline emissions from sources currently located at the Rockfield properties were subtracted from future emissions at the property to determine the Project increase in emissions on-site for comparison to the 100 lb/day screening level as shown in Table ES2. (Appendix G, Dataset 2).

Table ES2. Project On-site Daily Emissions and Model Screening Level Comparison

Scenario	CO (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	SO_X (lb/day)
On-Site Baseline	228.4	544.0	1,023.5	238.2	0.5
On-Site Future	1,323.4	669.6	1,057.8	257.1	26.6
On-Site Project	1,095.0	125.4	34.3	18.8	26.1
Screening Criteria	**100**	**100**	**100**	**100**	**100**
Exceeds Criteria?	**Yes**	**Yes**	**No**	**No**	**No**

Source: Appendix G.

As shown in Table ES2, emissions increases associated with the Project exceed the screening levels for CO and NOX.

Mitigation Measures

The Mitigated Project incorporates control of off-road engine PM_{10} emissions, and an increase in the level of control on sources of fugitive dust (roads, stockpiles) using the control methods described in the Fugitive Dust Control Plan, Appendix K.

Mitigation Measure AQ-1: Off-road Engines

Off-road engines shall be retrofitted or upgraded in order to meet the Tier 4i Particulate Emissions standard of 0.008 grams of PM_{10}/horsepower-hour.

Mitigation Measure AQ-2: Fugitive Dust Control

Implement controls for fugitive dust as described in the fugitive dust control plan ("FDCP"), Appendix K. Unpaved roads shall be controlled at a level of 90% by application of chemical dust suppressants or other equivalent methods. Stockpiles shall be controlled at a level of 90% by application of water or other equivalent methods. Hard rock excavation process shall be controlled at a level of 90% by application of water or other equivalent methods.

Mitigated Project emissions are summarized in Tables ES3 and ES4.

Table ES3. Mitigated Annual Emissions and Comparison to APCD Significance Criteria

Criteria Pollutant	Permit – Required Sources (tons/yr)			Permit - Exempt Sources (tons/yr)		
	Project	Significance Criteria	Project Exceeds?	Project	Significance Criteria	Project Exceeds?
ROG	6.2	10	No	-0.1	10	No
CO	34.3	100	No	49.4	100	No
NO_X	3.4	10	No	5.2	10	No
PM_{10}	4.3	15	No	-67.4	15	No
$PM_{2.5}$	1.3	15	No	-17.1	15	No
SO_X	0.9	27	No	1.4	27	No

Source: Appendix H.

Note: Negative values represent emissions reductions due to newer technology and lower emission equipment as would be expected from phase in of existing engine regulations and implementation of Mitigation Measures AQ-1 through AQ-3.

Table ES4. Mitigated On-site Daily Emissions and Model Screening Level Comparison

Scenario	CO (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	SO_X (lb/day)
On-Site Baseline	228.4	544.0	1,010.9	234.5	0.5
On-Site Future	1,323.4	669.4	573.4	136.7	26.6
On-Site Project	1,095.0	125.4	-437.5	-97.8	26.1
Screening Criteria	**100**	**100**	**100**	**100**	**100**
Exceeds Criteria?	**Yes**	**Yes**	**No**	**No**	**No**

Source: Appendix H.

As shown in Table ES-4 Project increases in onsite daily emissions of CO and NOx remain greater than the screening level after mitigation. In accordance with SJVAPCD Policy APR-2030, when any one of the criteria pollutants surpasses its established screening threshold, air dispersion modeling is required for all criteria pollutants. Therefore, the off-site concentration of each criterion pollutant was modeled, and results are presented in Table ES5.

Air dispersion modeling was performed using the latest version of AERMOD to ensure accurate and reliable air quality predictions. Short term effects of blasting were modeled separately from other sources because mining and related operations cease during blasting. Long term effects of blasting are assessed in a model that includes other sources.

Table ES5. Mitigated Criteria Pollutant Concentrations and AAQS Comparison

Pollutant	Period	Background (ug/m³)[a]	Project Contribution[b] (ug/m3)		Proposed Project + Background (ug/m³)	NAAQS[c] (ug/m³)	CAAQS[c] (ug/m³)	SJVAPCD Significant Impact Level (SIL)[e] (ug/m³)	Significant?
NO2	1-hour	25.46	H1H	79.93	105.39	—	339	NA	No
	1-hour	25.46	H8H	69.29	94.75	188	—	NA	No
	Annual	11.31	H1H	5.17	16.48	100	57	NA	No
SO2	1-hour	1.59	H1H	9.96	11.55	196	655	NA	No
	Annual	1.59	H1H	1.09	2.68	26	—	NA	No
CO	1-hour	301	H1H	231	533	40,000	23,000	NA	No
	8-hour	308	H1H	255	563	10,000	10,000	NA	No
PM10	24-hour	—[d]	H8H	0.2365	N/A	150	50	10.4	No
	Annual	—[d]	H1H	-0.1101	N/A	—	20	2.08	No
PM2.5	24-hour	—[d]	H8H	-0.0152	N/A	35	—	2.5	No
	Annual	—[d]	H1H	0.0825	N/A	9	12	0.63	No
Pb	3-month	0.003	Max Ave	0.003	0.006	0.15	—	NA	No

Source: Appendix I.

a) Background concentration is obtained from Site No. 11.

b) HIH = 1st Highest High (highest modeled result). Where a pollutant and averaging period has a NAAQS and CAAQS standard, the most stringent standard is selected.

c) San Joaquin Valley APCD is in attainment for these pollutants (excluding PM10 and PM2.5) and averaging periods; therefore, the most stringent AAQS (CAAQS or NAAQS) is used for the significance determination.

d) San Joaquin Air Basin is classified as "non-attainment" for PM10 and PM2.5. Therefore, San Joaquin Valley APCD Significant Impact Level (SIL) is used for determining significance and does not require background concentrations (APR 1925) (SJVAPCD, 2024).

e) SIL is defined as "a concentration threshold used to determine whether a proposed source's emissions will have a "significant impact on air quality in an area" (APR 1925) (SJVAPCD, 2024).

As shown in Table ES3, mitigated annual emissions are less than applicable significance thresholds. As shown in Table ES5, future concentrations of criteria pollutants (Project + Background) would be less than each AAQS. Therefore, the Project would not contribute to an exceedance of an AAQS and the impact is less than significant.

Summary of Impact AQ-3) The Project would not expose sensitive receptors to substantial pollutant concentrations.

Table ES6 presents the health risk assessment ("HRA") results for the Project.

Table ES6. Project Health Risk Impacts and Comparison to APCD Significance Thresholds

Model Receptor # – Type	Excess Cancer Cases per Million People Exposed (Years 1-70)	Excess Cancer Cases per Million People Exposed (Years 31-100)	Max Chronic Hazard Index	Max Acute Hazard Index
23 – Residence (MEIR – Cancer, Chronic)	5.05	2.17	0.01	0.106
25 – Residence (MEIR – Acute)	0.41	-0.007	0.003	0.18
20 – Worker (MEIW – Cancer, Chronic)	-2.39	-2.10	<0.001	0.05
6772 – Fenceline Receptor (PMI-Acute)	N/A	N/A	N/A	0.85
Significance Threshold	**20**	**20**	**1.0**	**1.0**
Threshold Exceeded?	**No**	**No**	**No**	**No**

Source: Appendix I

Note: These receptors represent locations of highest exposure. Discrepancies between table and appendix values may exist due to rounding. Off-site receptors were assessed as worker receptors under the conservative assumption that residences may be used as workplaces and agricultural workers may be present in fields surrounding the site.
See Figure 8b for locations of receptors in this Table.
MEIR: Maximum Exposed Individual Receptor occurs for non-cancer chronic hazard and cancer risk at the same receptor (#23).
MEIW: Maximum Exposed Individual Worker occurs for non-cancer chronic hazard and cancer risk at the same receptor (#20).
Acute hazard is evaluated for the PMI: Point of Maximum Impact. The Acute MEIR is presented for informational purposes.
Offsite Grid PMI located in UTM Zone 11.

Negative numbers in Table ES6 are the result of the Future condition having lower health risk impact than the Baseline condition. Project emissions reductions occur as a result of CARB regulations and standards that mandate cleaner engines over time, as well as the facility-wide incorporation of new technologies generally that are more efficient and result in lower emissions such as phase in of higher tier engines.

Mitigation Measures

Mitigation measures AQ-1 and AQ-2 are outlined above (page iv). Mitigation Measure AQ-3 described under Impact Statement AQ-4 is also included in Table ES7. Mitigated analysis calculations can be found in Appendix H. Health risk associated with the Mitigated Project is summarized in Table ES7, which shows health risk does not exceed thresholds.

Table ES7. Project Health Risk Impacts After Mitigation

Model Receptor # – Type	Excess Cancer Cases per Million People Exposed (Year 1-70)	Excess Cancer Cases per Million People Exposed (Year 31-100)	Max Chronic Hazard Index	Max Acute Hazard Index
23 – Residence (MEIR – Cancer, Chronic)	5.03	2.12	0.008	0.104
25 – Residence (MEIR – Acute)	0.41	0.01	0.002	0.18
20 – Worker (MEIW – Cancer, Chronic)	-2.39	-3.29	<0.000	0.05
6772 – Fenceline Receptor (PMI-Acute)	N/A	N/A	N/A	0.84
Significance Threshold	**20**	**20**	**1.0**	**1.0**
Threshold Exceeded?	**No**	**No**	**No**	**No**

Source: Appendix I.

Note: These receptors represent locations of highest exposure. Discrepancies between table and appendix values may exist due to rounding. No worker receptors exist in vicinity of the Project site. Potential residential locations were chosen to represent the maximum worker exposure under the assumption that residences may be used as workplaces.
See Figure 8b for locations of receptors in this Table.
MEIR: Maximum Exposed Individual Receptor occurs for non-cancer chronic hazard and cancer risk at the same receptor (#23).
MEIW: Maximum Exposed Individual Worker occurs for non-cancer chronic hazard and cancer risk at the same receptor (#20).
Acute hazard is evaluated for the PMI: Point of Maximum Impact. The Acute MEIR is presented for informational purposes.

Negative numbers in Table ES7 are the result of the Future condition having lower health risk impact than the Baseline condition. Project emissions reductions occur as a result of CARB regulations and standards that mandate in cleaner engines over time, as well as the facility-wide incorporation of new technologies generally that are more efficient and result in lower emissions. Moreover, mitigation measures that reduce fugitive dust in the Future condition also result in a decrease in modeled health risk at receptors.

As outlined in Table ES7, HRA demonstrates that the Mitigated Project would have a less than significant impact on nearby receptors, including sensitive receptors.

Summary of Impact AQ-4) The Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The asphalt plant operated on the Plant Site prior to the Baseline period and did not receive complaints about odor from a substantial number of people. The new asphalt plant will have lower emissions. Therefore, odor complaints are unlikely to occur with the Project and impact on odor is less than significant. Further, the following mitigation measure will be implemented as included in the DEIR.

Mitigation Measure AQ-3: Asphalt Plant Emissions Controls

The following design features will mitigate VOC, SVOC, and/or SO2 emissions:

1. The type of asphaltic cement produced by on-site plants affects odorous emissions. Some asphaltic cements have lower VOC/SVOC emissions than others. Therefore, asphaltic cements with lower VOC/SVOC emissions will be used to the extent feasible.
2. In accordance with SJVAPCD Rule 4309, the Project will implement "periodic burner tune-ups" that may reduce VOC emissions from the asphalt plant.
3. Mixing drum vapors will be routed back to the dryer burner.

2. Greenhouse Gasses

Summary of Impact GHG a) The Project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. (see Section 4.5.1).

Climate change is caused by cumulative GHG emissions. An individual project or emission source typically does not cause a significant climate change effect; it is caused by a large number of sources around the world emitting GHGs that collectively create a significant cumulative impact. Under 14 CCR 15130(a)(3), "An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable." Project emissions of GHGs are presented in Table ES8.

The GHG analysis in the Final EIR was revised, as envisioned by CEQA, to address comments on the DEIR by several commenters, including the Center for Biological Diversity. The DEIR was released on December 20, 2024 and the comment period closed on March 10, 2025. In the DEIR, the GHG analysis relied in part on an analysis used in an EIR certified by Kern County in approving the modification to an oil refinery. That DEIR acknowledged that certain GHG emissions related to the consumption of fuel and the use of electricity were offset upstream of those uses pursuant to California's Cap-and-Trade Program. This approach was upheld in a decision by the Fifth District Court of Appeal, which appellate court has jurisdiction over Fresno County, in *Association of Irritated Residents v. Kern County Board of Supervisors*, 17 Cal.App.5th 798 (2017) ("AIR"). However, on June 26, 2025 a new California appellate case out of Los Angeles County reviewing the use of offsets under the Cap-and-Trade Program as part of an EIR used to evaluate a housing development program was filed by the 2nd District Court of Appeal, *Center for Biological Diversity v. County of Los Angeles*, 112 Cal.App.5th 317 (2025) ("LA County Decision"). The LA County Decision distinguished the AIR Decision and held that Los Angeles County could not rely on the fact that transportation fuels and electricity that would be used as part of the project were subject to the Cap-and-Trade Program. In an abundance of caution, Fresno County decided to revise the GHG analysis in the Draft EIR to conform to the more recent LA County Decision. Accordingly, all emissions, including those involving the consumption of fuel and the use of electricity, are included in determining whether total emissions would exceed the DEIR GHG significance threshold of 10,000 MTCO2e/yr.

The operation of the Project within Fresno County would likely reduce regional VMT and thus GHG emissions according to Peter Berck in his January 2005 Working Paper 994, "A Note on the Environmental Costs of Aggregate" (Appendix B). That is to say that if the Project was not approved, the aggregate needed for on-going construction activities in Fresno County as well as the San Joaquin Valley Air Basin would have to come from mines farther away and would thereby increase regional VMT and GHG emissions.

In order to accurately address the impact of the Project, a regional increment analysis, was conducted which

characterizes the Project contribution to cumulative regional GHG emissions (Appendix J). The methodology of the regional increment analysis responds to current regulatory guidance and reflects how aggregate demand and associated emissions are projected and managed at the regional level. The regional increment analysis is based on Project activity levels, as well as regional aggregate demand as forecast in the California Department of Conservation Map Sheet 52.

State and regional planning forecasts indicate that aggregate demand is driven by population growth and overall regional development, rather than by the maximum production capacity of any single facility. Accordingly, while the Project is capable of supplying aggregate to meet regional needs, its operation would not create a net increase in regional aggregate demand beyond that already forecast. Any increase in production from the Project would be offset by corresponding reductions in production from other facilities serving the same regional market, resulting in no substantial change in total regional output. Consistent with this framework, the GHG analysis evaluates emissions based on the Project's proportional share of regional demand growth, rather than calculating emissions based on continuous operation at maximum throughput. This approach ensures that the Project's GHG emissions are attributed in a manner that reflects realistic market conditions and real-world impacts. Emissions from on-road, off-site vehicles associated with the Project are calculated in terms of the Project's regional increment, and are included in Table ES8.

Emissions from non-employee off-site, on-road vehicles associated with the project were calculated by summing the operational regional increment with the Baseline condition (709MT CO_2e/yr and 5,359 MT CO_2e/yr, which comes out to a total of 6,068 CO_2e/yr). As described in Appendix L, renewable diesel (RD) went from negligible in 2005 to 16% in 2018 to 70% today and is expected to achieve close to 90% in 2045. Based on 2025 reporting, RD has approximately 40% of the carbon intensity of low sulfur diesel fuels and is contributing to reducing the carbon intensity (CI) of the available ultra-low sulfur diesel available on the market in accordance with the LCFS benchmarks (Appendix L). Accordingly, Project-related off-site on road fleet emissions were reduced by the CI reductions established in the LCFS benchmarks; for the years between 2016 and 2018 the realized CI reduction was 2% and for the years from 2016 to 2026, it was 18.6% (See Figure 2 in Appendix L).

Further, California's in-use off-road diesel fueled fleets regulations require the use of RD; to be reasonably conservative and based on the LCFS benchmark data, an adjustment of 50% was applied to estimated Project-related off-road diesel emissions operating onsite (see Appendix L). This is less than the 55% reduction in CI measured in 2025 between RD and LSDF (Appendix L, Tables 3 and 4) and the approximately 90% in ULSD projected for 2045 (Appendix L, Table 2). This shift has been driven in part by the California Low Carbon Fuel Standard, adopted by the California Air Resources Board in 2009 and implemented beginning in 2011, which requires progressively lower lifecycle carbon intensity for transportation fuels used in the state. Project Impacts represent the difference between the baseline condition and the operating condition. As shown in Table ES8, Project operations minus the Baseline conditions result in GHG impacts that are less than the significance threshold.

Based on the analysis presented above and as shown in Table ES8, the Project's net increase in GHG emissions would be less than the SCAQMD significance threshold of 10,000 MTCO_2e per year. This conclusion reflects the use of a regional increment methodology that accounts for regional aggregate demand, the

absence of a net increase in regional production, and compliance with statewide programs that reduce the carbon intensity of fuels and electricity. This analysis does not rely on the California Cap and Trade program, given recent CEQA case law. Accordingly, the Project's impact on climate change would be less than significant under CEQA.

Table ES8. Mitigated Project GHG Emissions

Activity		**CO_2e (MT/yr)**
Construction Phase (Maximum Year)		6.6
Operation Phase Total		21,301
On-site On-road Sources (1)(a)	927	
On-site Offroad Sources (2)(b)	4,236	
Non-Employee Off-site On-road Sources (regional increment) (c)	6,068	
Employee Off-site On-road Sources (d)	302	
Stationary Sources (Asphalt Plant) (e)	8,394	
Electricity (f)	1,373	
Baseline Condition Total		13,737
On-site On-road Sources (1)(a)	954	
On-site Offroad Sources (2)(b)	5,212	
Non-Employee Off-site On-road Sources (regional increment) (c)	5,359	
Employee Off-site On-road Sources (d)	293	
Stationary Sources (e)	-	
Electricity (g)	1,919	
Project Emissions (Operation Phase Minus Baseline Condition)		7,564
GHG Threshold of Significance		10,000
Significant?		**No**

Source: a) Appendix H Datasets 8 & 10 b) Appendix H Dataset 7 c) Appendix J d) Appendix H Dataset 2a
e) Appendix H Datasets 14a & 14c f) Section 4.4.3 g) Section 4.4.1
1) Off-road units comply with offroad engine rules which require renewable diesel and adjusted by 50% (see Appendix L)
2) Off-site on-road units evaluated based on incremental share of regional increase in emissions (see Appendix J)

Summary of Impact GHG b) The Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs. Potential conflicts with applicable air quality plans have been analyzed and ruled out (see Section 4.5.2).

Project emissions are evaluated with respect to consistency primarily with the plans and policies outlined in Table ES9 below, as well as other plans and policies, as outlined in Appendix E, that have been adopted to reduce GHG emissions.

Table ES9 Adopted GHG Policies

Plan/Policy	Consistent?
A local jurisdiction's qualified climate action plan or GHG reduction plan.	As detailed in section 4.1.5, the Project is consistent because no local climate action or GHG reduction plans apply to the project.
AB 32, SB 32 and the Scoping Plan	AB 32 requires that the CARB adopt regulations to require the reporting and verification of statewide greenhouse emissions and monitor and enforce compliance with the program. The Project is in compliance with the 2022 Scoping Plan as demonstrated in Table 42 Project Greenhouse Gas Emissions. In the preparation of this Report, the calculation of emissions from fuel and electricity subject to AB 32 and SB 32 were no longer used to reduce GHG emissions for determining the level of significance given recent CEQA case law. Fresno County utilized the SCAQMD 10,000 $MTCO_2e$/yr significance threshold. As noted in Section 4.1.4, this threshold of 10,000 $MTCO_2e$/yr has been previously utilized to determine significance in an approved EIR in the SJVAPCD area. Referring to Table ES8 above, total applicable Project GHG emissions are estimated to be 7,564 $MTCO_2e$/yr, less than the 10,000 $MTCO_2e$/yr threshold. As such, the Project is consistent with the emissions reductions targets outlined in AB 32 and the 2017 and 2022 Scoping Plan.
CA Executive Order B-30-15 goals.	The Project is consistent with the Executive Order B-30-15 goals which apply to the fuel and electricity sectors as a whole. The fuels and electricity used by the Project would be subject to the Cap-and-Trade program as well as other Scoping Plans and related control measures (e.g., renewable energy portfolio, low carbon fuel standard) that are applied higher up in the supply chain. (There is no plan, policy or regulation adopted for the purpose of reducing emissions of GHGs specifically from mining projects).

As outlined in Table ES9, the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Moreover, Appendix E details additional plans, policies, and regulations that have been reviewed to ensure the Project would not result in a conflict.

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Air Quality, Health Risk, and Climate Change Impact Assessment
Rockfield Modification Project
Fresno County, California

Revised, May 13, 2026

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Appendix H only contains datasets that differ in calculation method from Appendix G. Dataset labeling in Appendix H uses the same numbering convention as Appendix G for easy reference, and therefore may appear to be missing datasets.

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Information not found in the PDF may be provided electronically upon request.

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Air Quality, Health Risk, and Climate Change Impact Assessment
Rockfield Modification Project
Fresno County, California

Revised, May 13, 2026

1.0 INTRODUCTION

This Air Quality, Health Risk, and Climate Change Impact Assessment (Report) was prepared for inclusion in the Final Environmental Impact Report (FEIR) for the subject Project. It incorporates prior technical documentation found in Appendices D-1 and D-2 of the Draft Environmental Impact Report (DEIR).

This Report has two primary sections: air quality and greenhouse gas (GHG). Each is divided into the following sub-sections:

- **Regulatory Setting**. This subsection describes the characteristics of pollutants as well as federal, state [1], and local regulations that apply to the Project.
- **Environmental Setting**. This subsection describes the existing physical environment (i.e., CEQA baseline) [2] for the region and areas adjacent to the Project site.
- **Significance Thresholds**. This subsection presents the state CEQA Guidelines Appendix G checklist items which are the primary thresholds used along with the SJVAPCD significance criteria that are applied to determine the significance of the Project.
- **Methodology**. This subsection describes the design features of the Project, emissions calculation methods, emissions that are in the Baseline for the Project, and health risk assessment (HRA) methods.
- **Project-Level Impacts and Mitigation Measures**. This subsection presents the results of Project impact analyses; compares each impact to significance thresholds; determines significance of Project effects; proposes mitigation measures to reduce significant impacts to less than significant levels or the maximum extent feasible.

[1] The words “federal,” “national,” and “state” are capitalized when referring to a specific rule, regulation or other item that could be unique (e.g., State CEQA Guidelines in preceding paragraph). The words are not capitalized when describing items in general terms not specific to this nation or state. As presented in this bullet; federal, state and local are levels of government/regulation; and thus, are not capitalized.

[2] The word “baseline” is capitalized in this report when referring to the Project Baseline and is not capitalized when referring to the concept of baseline under CEQA and/or baselines for other projects, plans, regulations, etc.

2.0 PROJECT DESCRIPTION

The Rockfield Modification Project is a modification of CEMEX Construction Materials Pacific, LLC's (CEMEX) existing aggregate (sand and gravel) mining and processing operations located on two properties between North Friant Road and the San Joaquin River in Fresno County (the Project). The Project includes the existing approximately 122 acre Plant Site located approximately 1.5 miles north of the City of Fresno and the existing approximately 349 acre Quarry Site located approximately 2.0 miles north of the Plant Site and approximately 2.0 miles south of the town of Friant. Figures 1 and 2 (Appendix A) represent the regional and local location of the sites respectively.

Aggregate mining and processing have been continuous at the Plant Site since 1924. Existing operations at the Plant Site are permitted under several Fresno County Conditional Use Permits (CUP) and include aggregate mining, an aggregate processing plant, a ready-mix concrete plant, a hot-mix asphalt plant (currently inactive), related supportive facilities, and the processing of raw aggregate mined from the Quarry Site. A portable plant is brought in periodically to recycle come-back concrete (unused concrete in mixer upon return to plant) into crushed miscellaneous base. Aggregate from the alluvial deposit has been partially mined from portions of the Plant Site. The entire Plant Site is disturbed by mining and processing operations with the exception of required setbacks from Friant Road.

Aggregate mining has been permitted at the Quarry Site since 1960 under several Fresno County CUPs. There has been active mining on the site since the 1980's. Existing operations at the Quarry Site include aggregate mining of the alluvial deposit. There are no plant operations at the Quarry Site. An interplant haul of raw aggregate up to 1.4 million tons per year (mtpy) has been transported via Friant Road approximately 2 miles south to the Plant Site for processing. Most of the Quarry Site has been partially mined and is almost entirely disturbed (approximately 90%) by the current and historical mining operations with the exception of required setbacks from the San Joaquin River and Friant Road. During mining operations, surface and/or groundwater encountered within the excavation is pumped to an existing pond in the northeast corner of the Quarry Site for recharge to the groundwater and to existing groundwater recharge trenches along the western boundaries of the Quarry site.

The Project would occur in two phases as described below:

Phase 1 would include concurrent operations at both the Quarry Site and the Plant Site for up to 30 years. At the Plant Site, the existing aggregate processing plant would continue to be used to wash, screen, crush and sort aggregate mined from the Plant Site. The existing RMC plant would continue to operate and a modern asphalt plant would be installed and operated. Aggregate products from the Plant Site and ready-mix concrete would continue to be sold to customers. Periodic use of a portable crushing plant to recycle come-back concrete would continue with the addition of imported concrete and asphalt debris for recycle into crushed miscellaneous base and recycled asphalt product (RAP). The remaining alluvial deposit would be mined to a depth of approximately 85 feet below ground surface (bgs). Surface and/or groundwater encountered within the excavation would be pumped to groundwater recharge trenches along boundaries of the Plant Site.

At the Quarry Site, mining would be modified to include the hard rock (granite) that lies beneath the alluvial deposit that has historically been mined. Mining of the hard rock would require drilling and blasting and would occur to a depth of approximately 600 feet bgs. Surface and/or groundwater encountered within the excavation would continue to be pumped to an existing pond in the northeast corner of the Quarry Site for recharge to the groundwater and to existing groundwater recharge trenches along the western boundaries of the Quarry site. An aggregate processing plant would be added to the Quarry Site to wash, screen, crush and sort the aggregate. The plant would be located in a previously mined pit approximately 30 feet bgs in the northern portion of the Quarry Site. A portable aggregate processing plant may be used initially. A primary crusher, hydraulic shovel, and a dozer used to rip ground and push rock to the crusher would be located in the bottom of the pit. Mined rock would be transported to the on-site processing plant by conveyor.

Combined annual processing throughput of aggregate from both sites is estimated to increase from the 1.4 mmtpy in the Baseline to 2.0 mmtpy within five years and 3.0 mmtpy within 10 years. Phase 1 operations are estimated to be on-going for up to 30 years. The RMC plant and the HMA plant may be relocated from the Plant Site to the Quarry Site in less than 30 years in order to recover the remaining alluvial deposit under the plants. Upon completion of mining at the Plant Site, operations at the Plant Site would cease, all equipment would be removed and the site reclaimed as 122 acres of open space, riparian and open water wildlife habitat.

Phase 2 would continue hard rock mining and processing operations at the Quarry Site. The RMC plant and the HMA plant would be relocated from the Plant Site to the Quarry Site adjacent to the aggregate processing plant and interplant haul would cease. The periodic use of a portable plant to recycle concrete and asphalt debris (including imported) into crushed miscellaneous base and RAP would occur at the Quarry Site. Phase 2 operations are estimated to have annual aggregate processing rate of 3.0 mmtpy and be on-going for at least 70 years. Since the interplant haul would cease beginning with Phase 2, traffic would be less than for Phase 1. Upon completion of mining at the Quarry Site, operations at the Quarry Site would cease and all equipment would be removed. Reclamation of the Quarry Site would create approximately 349 acres of open space, riparian and open water wildlife habitat.

The Project (Phases 1 and 2 combined) is estimated to take 100 years. Materials production increases are outlined in Table 1. The proposed actions are analyzed in this Air Quality, Health Risk, and Climate Change Impact Report (Report) and heretofore referred to as the "Project". Project features described in the Report are those that affect air quality and greenhouse gas emissions.

This Report presents technical information and analysis describing reasonably foreseeable changes to the environment that would occur with the Project. Project impacts on regional and local environmental setting are assessed for construction and operation phases of the Project using current standard practices and the State CEQA Guidelines (14 CCR §15000 et. seq.). Features of the Project that affect air quality and/or GHG are analyzed are summarized in Table 1.

Table 1 Cemex Rockfield Project Summary

Activity	Description
Construction	
Aggregates Plant Construction	Construction of aggregates processing plant at the Quarry Site. Expected schedule of 10 months.
Grading	Expected schedule of 20 days.
Paving	Paving of approximately one mile of road (Appendix A, Figure 6). Expected schedule of 10 days.
Site Preparation	Clearing of site and site preparation. Expected schedule of 10 days.
Resource Recovery and Processing	
Mining Method	Addition of hard rock mining to Quarry Site activities. Addition of primary crusher in pit. Increased use of excavator and dozer operations, in addition to excavation by hydraulic shovel or front-end loader. Addition of blasting will be required.
Processing	Extracted resources at the Quarry Site will be processed onsite rather than being transported to the Plant Site for processing.
Estimated Annual Aggregates Throughput	Increase from 1,374,272 tons per year to 3,000,000 tons per year
Estimated Annual Ready Mix Production	Increase from 189,550 cubic yards per year to 300,000 cubic yards per year
Estimated Annual Recycle Plant Production	Increase from 25,000 tons per year to 200,000 tons per year
Estimated Annual Asphalt Plant Production	Increase from 0 tons per year to 500,000 tons per year
Hours of Operation	6 days per week, Monday through Saturday (For health risk assessment, modeled conservatively as 7 days per week, 12 hours per day, per standard practice. For criteria pollutant emissions, modeled based on maximum hour and day, by activity levels.)

3.0 AIR QUALITY

This Report primarily follows the *APR – 1906 Framework for Performing Health Risk Assessments* (SJVAPCD, 2015), *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Risk Assessments* (OEHHA, 2015), *APR 1905 – Risk Management Policy for Permitting New and Modified Sources* (SJVAPCD, 2015)*, and Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD, 2015).

3.1 Regulatory Setting

3.1.1 Characteristics of Air Pollutants

Both the State and the Federal governments have established health-based criteria called Ambient Air Quality Standards (AAQS) for six air pollutants. These "criteria pollutants" are ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter ($PM_{2.5}$ and PM_{10}). Each criteria pollutant is described more fully below and associated AAQS are presented in Table 2.

Many constituents in air emissions other than criteria pollutants may result in health effects and are regulated as TACs using health risk assessment methods (i.e., as opposed to comparing concentration of criteria pollutant to an AAQS). Diesel particulate matter (DPM) and respirable crystalline silica (RCS) are two TACs of concern associated with Project sources and are also discussed below. Appendix D contains information from the American Thoracic Society (ATS) on what constitutes an adverse health effect from air pollution which is the standard used by the Office of Environmental Health Hazard Assessment (OEHHA) and CARB in setting AAQS and exposure levels used for health risk assessment (HRA).

Ozone – Ozone (smog) is formed by photochemical reactions between oxides of nitrogen (NO_X) and volatile organic compounds (VOC), rather than being directly emitted. Generally, air districts prioritize NOx reductions over VOC reductions because NOx reductions would have greater effect on reducing ozone concentrations and be more protective of public health.

O_3 is a pungent, colorless gas typical of photochemical smog. Elevated O_3 concentrations may result in reduced lung function, particularly during vigorous physical activity. This health effect is particularly acute in sensitive receptors such as the sick, the elderly, and young children. O_3 levels peak during summer and early fall.

Breathing ground-level ozone can result in a number of health effects that are observed in broad segments of the population. Some of these effects include: induction of respiratory symptoms; decrements in lung function; and inflammation of airways. Respiratory symptoms may include: coughing; throat irritation; pain, burning, or discomfort in the chest when taking a deep breath; and chest tightness, wheezing, or shortness of breath. In addition to these effects, evidence from observational studies indicates that higher daily ozone concentrations are associated with increased asthma attacks, increased hospital admissions, increased daily mortality, and other markers of morbidity. The consistency and coherence of the evidence for effects upon asthmatics suggests that ozone can make asthma symptoms worse and can increase sensitivity to asthma triggers.

Carbon Monoxide – Carbon monoxide (CO) is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions.

The severity of symptoms due to CO exposure increases with the blood carboxyhemoglobin (COHb) level. The first signs of CO exposure include mild headache and breathlessness with moderate exercise. Continued exposure may lead to more severe headache, irritability, impaired judgment and memory, and rapid onset of fatigue. Persons that may be more sensitive to CO exposure include those having an existing cardiovascular disease or anemia; fetuses of pregnant women; smokers; and persons exposed to methylene chloride.

Nitrogen Oxides – Nitrogen oxides (NO_X) is a generic term for the mono-nitrogen oxides which include nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas and NO_2 is a reddish brown gas. NO_X is formed from fuel combustion under high temperature or pressure. NO_X is a primary component of the photochemical smog reaction. It also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition (i.e., acid rain). NO_X decreases lung function and may reduce resistance to infection. Acute exposure to NO_2 may cause pulmonary edema, pneumonitis, and bronchitis. NO_2 is considered a relatively insoluble, reactive gas, such as phosgene and ozone. Once inhaled, NO_2 reaches the lower respiratory tract, affecting mainly the bronchioles and the adjacent alveolar spaces, where it may produce pulmonary edema within hours.

Sulfur Dioxide – Sulfur dioxide (SO_2) is a colorless, irritating gas formed primarily from combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight. People with asthma and children are particularly sensitive to and are at increased risk from the effects of SO_2 air pollution

Lead – Lead (Pb) was phased out of use in gasoline and paint. It is present at trace concentrations in a variety of other materials including most natural materials extracted from the earth's crust. Once in the bloodstream, Pb can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of Pb.

Particulate Matter – Particulate matter (PM) pollution consists of very small liquid and solid particles floating in the air. Some particles are large or dark enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter also forms when gases emitted from motor vehicles and industrial sources undergo chemical reactions in the atmosphere. PM_{10} refers to particles less than or equal to 10 microns in aerodynamic diameter. $PM_{2.5}$ refers to particles less than or equal to 2.5 microns in aerodynamic diameter and are a subset of PM_{10}.

There are sources of PM_{10} in both urban and rural areas. PM_{10} and $PM_{2.5}$ are emitted from stationary and mobile sources, including diesel trucks and other motor vehicles, power plants, industrial processing, wood burning stoves and fireplaces, wildfires, dust from roads, construction, landfills, and agriculture, and fugitive windblown dust. Because particles originate from a variety of sources, their chemical and physical

compositions vary widely. In addition, it is now believed that $PM_{2.5}$ concentrations are highly dependent on several precursors which, like NOx and ROG for ozone, undergo chemical reactions in the environment that changes them to $PM_{2.5}$.

PM_{10} and $PM_{2.5}$ particles are small enough to be inhaled into, and lodge in, the deepest parts of the lung, evading the respiratory system's natural defenses. Health problems may occur as the body reacts to these foreign particles.

Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. Non health-related effects include reduced visibility and soiling of buildings. PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. PM_{10} and $PM_{2.5}$ can aggravate respiratory disease, and cause lung damage, cancer, and premature death.

Although particulate matter can cause health problems for everyone, certain people are especially vulnerable to adverse health effects of PM_{10}. These "sensitive populations" include children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis. Of greatest concern are recent studies that link PM_{10} exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM_{10} can also damage manmade materials and is a major cause of reduced visibility in many parts of the United States.

Respirable Crystalline Silica – Respirable crystalline silica (RCS) refers to crystalline silicon dioxide with aerodynamic diameter less than four (4) microns (i.e., 0.0004 cm). Crystalline silica or quartz is ubiquitous in nature. Most dust generated by construction and mining activities including blasting produces dust particles larger than 4 microns. These particles are too large to reach the alveoli of the lungs which are the target organ. Thus, RCS constitutes a tiny fraction of the dust from these sources and does not represent a significant health risk to neighbors of these types of projects. In order to result in toxic effects the silica needs to be crystalline, smaller than 4 microns, inhaled, and not exhaled.

Inhalation of RCS initially causes respiratory irritation and an inflammatory reaction in the lungs. Silicosis results from chronic exposure; it is characterized by the presence of histologically unique silicotic nodules and by fibrotic scarring of the lung. Lung diseases other than cancer associated with silica exposure include silicosis, tuberculosis/silicotuberculosis, chronic bronchitis, small airways disease, and emphysema. Ambient air exposures do not cause concern but levels to which workers (e.g., miners, sandblasters) may be exposed have been shown to cause cancer.

Diesel Particulate Matter – Diesel particulate matter (DPM) is used as a surrogate for the mixture of compounds in diesel exhaust that have the potential to contribute to mutations in cells which can lead to cancer. These compounds include, but are not limited to, arsenic, benzene, formaldehyde, and nickel.

Long-term exposure to diesel exhaust particles poses the highest cancer risk of any TAC evaluated by OEHHA. CARB has estimated that about 70 percent of the cancer risk that the average Californian faces from breathing TACs stems from diesel exhaust particles. In a comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely than workers who were not exposed to diesel emissions to develop lung cancer. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health (NIOSH), have calculated similar cancer risks from diesel exhaust as those calculated by OEHHA.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. People with allergies, existing cardiovascular disease, the elderly, and children considered sensitive populations for DPM exposure. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks.

3.1.2 Federal

The Clean Air Act (CAA) is the comprehensive Federal law that regulates air emissions from stationary and mobile sources. Congress established much of the basic structure of the CAA in 1970, and made major revisions in 1977 and 1990. Table 2 presents Federal and State AAQS. "The Clean Air Act in a Nutshell: How It Works" (EPA, 2013) contains a thorough yet concise summary of how US EPA implements the CAA. Table 3 also identifies how the CAA applies to the Project.

New Source Performance Standards – Title 40, Code of Federal Regulations (CFR), Part 60

Subpart OOO (Nonmetallic Mineral Processing Plants) is applicable to new, modified, or reconstructed nonmetallic mineral processing facilities (with certain exceptions, such as fixed sand and gravel plants and crushed stone plants with capacities of 25 tons per hour or less, or portable sand and gravel plants and crushed stone plants with capacities of 150 tons per hour or less). Subpart OOO restricts emissions from affected facilities equipped with capture systems used to capture and transport particulate matter to a control device. Emissions are prohibited in excess of 0.032 grams per dry standard cubic meter (g/dscm) (0.014 grains per dry standard cubic feet (gr/dscf)), and from exhibiting visible emissions based on quarterly monitoring. Subpart OOO also prohibits the discharge of any fugitive emissions from affected facilities without capture systems and the discharge of fugitive emissions escaping capture systems that exhibit greater than 7 percent opacity (12 percent for crushers without capture systems).

Subpart I (Standards of performance for Hot Mix Asphalt Facilities) is applicable to facilities that are used to manufacture hot mix asphalt by heating and drying aggregate and mixing it with asphalt cements. Subpart I prohibits emissions that:

- contain particulate matter in excess of 90 mg per dry standard cubic foot, or
- Exhibit 20 percent opacity or greater.

EPA Test Method 5 is used to determine particulate matter concentration and outlines sampling methodology.

Regulations Affecting New Diesel Engines

US EPA regulates emissions from new non-road (i.e., off-road, portable, and stationary) internal combustion engines by tiered standards (e.g., compression-ignition engines in 40 CFR 89.112, 40 CFR 1039.101, and 40 CFR 1039.102). Emissions from new on-road engines are regulated using standards that apply by model year, class of vehicle, and fuel type (e.g. heavy-heavy duty diesel engines in 40 CFR 86.004-11, 40 CFR 86.007-11, and 40 CFR 86.099-11). These regulations affect manufacturers but are relevant to the Project because diesel engines are the primary source of Project combustion emissions.

3.1.3 State

3.1.3.1 Criteria Pollutants

The State of California began to set California ambient air quality standards (CAAQS) in 1969. The CAAQS are generally more stringent than the NAAQS. In addition to the six criteria pollutants covered by the NAAQS, there are CAAQS standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. These standards are listed in Table 2**.**

Originally, there were no attainment deadlines for the CAAQS. However, the California Clean Air Act (CCAA) provided a timeframe and a planning structure to promote their attainment. The CCAA required nonattainment areas in the State to prepare attainment plans and proposed to classify each such area on the basis of the submitted plan. CAAQS attainment plans require a minimum 5 percent annual reduction in the emissions of nonattainment pollutants unless all feasible measures have been implemented.

Table 2 State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3) [8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM_{10}) [9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter ($PM_{2.5}$) [9]	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	9.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemi-luminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemi-luminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		53 ppb (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectro-photometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1,300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	**No National Standards**		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Footnotes on next page. Table up to date as of 1/6/2026. Source: CARB, July 16, 2024

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the US EPA for further clarification and current National policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method, which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard, may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
6. Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the US EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the US EPA.
8. On October 1, 2015, the National 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On February 7, 2024, the National annual $PM_{2.5}$ primary standard was lowered from 12.0 µg/m^3 to 9.0 µg/m^3. The existing National 24- hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. To attain the 1-hour National standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the National 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the National 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the National standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour National standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 National standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour National standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour National standard to the California standard the units can be converted to ppm. In this case, the National standard of 75 ppb is identical to 0.075 ppm.
12. The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The National standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
14. In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Table 3 Applicability of US EPA Activities under the CAA to the Project

US EPA Activity	Applicable to Project Sources?
Establish air quality standards.	Yes, see **Impact AQ-2**.
Designate quality of air in attainment areas.	No, the Project is not an attainment area.
Administrate state implementation plans.	No, the Project is not a SIP.
Require additional programs in nonattainment areas.	Yes, the Project would comply with SJVAPCD programs and rules that address nonattainment.
Provide guidance on control techniques.	Yes, a Dust Control Plan is provided, see Appendix K.
Regulate interstate air pollution.	No, the Project is not a state.
Require plans to maintain clean air after a nonattainment area meets the standard.	Yes, the Project would comply with SJVAPCD programs and rules that maintain attainment.
Preserve clean air in attainment areas.	Yes, the Project would comply with SJVAPCD programs and rules that preserve attainment.
Adopt National standards for new stationary sources.	Yes, see Table 4 and Table 5 for standards.
Adopt National standards or guidelines for consumer and commercial products.	No, the Project does not buy products that emit air pollutant from vendors outside the country.
Adopt National standards for new vehicles and engines, and fuels.	No, the Project does not manufacture vehicles, engines, or fuels.
Regulate emissions from oil drilling on the Outer Continental Shelf.	No, the Project is not located on the Outer Continental Shelf.
Regulate hazardous air pollutants.	Yes, see **Impact AQ-3**.
Protect visibility in National parks by regulating regional haze.	No, does not include a major stationary source.
Control acid rain by regulating NO_2 and SO_2 emissions from power plants.	No, the Project does not include a power plant or other major source of combustion pollutants.
Protect stratospheric ozone by regulating ozone-depleting compounds (e.g., chlorofluorocarbons).	No, the Project would purchase refrigerants and other classes of products from a U.S. vendor.
Regulate major sources of air pollution by administrating a Federal operating permit program.	No, the Project is a minor source that does not require a Federal operating permit.

Source: (EPA, 2013).

3.1.3.2 Toxic Air Contaminants

California's comprehensive air toxics program was established in the early 1980s. The Toxic Air Contaminant Identification and Control Act (AB 1807, 1983) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987) requires a Statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

Under AB 1807, CARB is required to use certain criteria when prioritizing pollutants for control of air toxics. In selecting substances for review, CARB must consider criteria relating to "the risk of harm to public health, amount or potential amount of emissions, manner of, and exposure to, usage of the substance in California, persistence in the atmosphere, and ambient concentrations in the community." AB 1807 also requires CARB to use available information gathered from the AB 2588 program to include in the prioritization of compounds. The list of TACs includes all Federal HAPs plus the following pollutants: 1,2-dibromoethane, 1,2-dichloroethane, hexavalent chromium, cadmium, inorganic arsenic, nickel, inorganic lead, diesel particulate matter, and environmental tobacco smoke (17 CCR § 93000 and §93001).

Under AB 2588, industrial facilities are required to report air toxic emissions, ascertain health risks and notify nearby residents of significant risks. In September 1992, the Hot Spots Act was amended by Senate Bill 1731, which required facilities that pose a significant health risk to reduce their risk through a risk management plan. The emissions inventory and risk assessment methodologies from the AB 2588 Program are used in this Report as discussed in the methodology subchapter (Sections 0).

Diesel Emissions

In July 2007, CARB adopted an airborne toxic control measure (ATCM) for in-use off-road diesel vehicles (13 CCR § 2449 et seq.). This regulation requires that fleets meet requirements for NO_x and particulate matter emissions rates. Where fleet average requirements cannot be met, best available control technology (BACT) requirements apply. The regulation also includes recordkeeping and reporting requirements. In response to AB 8 2X, the regulation was revised in July 2009 (effective December 3, 2009) to postpone compliance in 2011 and 2012 for existing fleets. On December 17, 2010, CARB adopted additional revisions to further delay the compliance deadlines, reflect reductions in diesel emissions due to the poor economy, and rectify overestimates of diesel emissions that supported previous rulemaking. The 2010 revisions delayed the first compliance date until January 1, 2014 for large fleets, with final compliance by January 1, 2023. The compliance dates for medium fleets were delayed until January 1, 2017, and final compliance date of January 1, 2023. The compliance dates for small fleets were delayed until January 1, 2019, and final compliance date of January 1, 2028. The fleet average targets were made more stringent in future compliance years, to compensate for reductions that would not occur in early years. The revisions also accelerate the phase-out of equipment, preventing older equipment from being added to fleets over time.

On October 28, 2011 (effective December 14, 2011), the Executive Officer of CARB approved amendments to the ATCM regulation that included revisions to the applicability section, definitions, and fleet average schedule by combining the PM and NO_x fleet average targets. The amended fleet average targets are based on the NO_x fleet average emissions factors from previous versions of the rule with credit given for PM reduction. The PM

performance requirements were removed. The BACT requirements, which apply when a fleet cannot comply with the fleet average requirements, were restructured and clarified. Other amendments to the regulations included minor administrative changes.

Naturally Occurring Asbestos (NOA)

ATCMs for naturally-occurring asbestos (NOA) that have been adopted by CARB include the following:

- Asbestos ATCM for Surfacing Applications (17 CCR § 93106) restricts the asbestos content of material used in surfacing applications such as unpaved roads, parking lots, driveways, and walkways. The ATCM excludes "sand and gravel operations" from requirements except for those allowing the Air Pollution Control Officer (APCO) to require geologic evaluation or asbestos testing. "Sand and gravel operation" means any aggregate-producing facility operating in alluvial deposits.
- Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations (17 CCR § 93105) requires the implementation of mitigation measures to minimize emissions of asbestos-laden dust. Applicable to the Plant Site Project, the ATCM states that the "APCO may provide an exemption for crushing, screening and conveying equipment, stockpiles, and off-site material transport at a sand and gravel operation if the operation processes only materials from an alluvial deposit."

While previous mining took place only within alluvial deposits, on the Quarry Site, the Project proposes to mine underlying hard rock. It is possible that geologic evaluation or asbestos testing may be required by the APCO.

3.1.4 San Joaquin Valley Air Pollution Control District

The 1976 Lewis Presley Air Quality Management Act established the SJVAPCD and other air districts throughout the State. The Federal Clean Air Act Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the Federal standards in nonattainment areas of the state.

CARB coordinates and oversees both State and Federal air pollution control programs in California. CARB oversees activities of local air districts and is responsible for incorporating air quality management plans developed by each air district into the State Implementation Plan (SIP) for Federal EPA approval. CARB maintains air quality monitoring stations throughout the State in conjunction with local air districts. Data collected at these stations are used by CARB and EPA to classify areas as "attainment" or "nonattainment" with respect to each pollutant and to monitor progress towards attaining air quality standards. CARB has divided the State into 15 air basins. Significant authority for air quality control is delegated to local air districts that regulate emissions from stationary sources and develop attainment plans. In addition, the CCAA provides the SJVAPCD with the authority to manage transportation activities and regulate stationary source emissions. Indirect sources of pollution are those sources related to a stationary facility or development project (see Rule 9510) but otherwise outside District authority to regulate. An example of this would be the motor vehicles at an intersection, a mall, and on highways. As a State agency, CARB regulates motor vehicles and fuels for their emissions.

The SJVAPCD and Fresno Council of Governments (FCOG) are responsible for formulating and implementing the air quality and transportation plans for the Fresno County area of the SJVAB. The SJVAPCD has adopted several attainment plans to achieve State and Federal air quality standards. The SJVAPCD continuously monitors the region's progress implementing attainment plans and periodically reports to CARB and the EPA. Finally, SJVAPCD periodically revises attainment plans to reflect new conditions and requirements in accordance with schedules mandated by the CCAA and Clean Air Act Amendments (CAAA).

3.1.4.1 Attainment Plans

Attainment plans prepared by SJVAPCD are grouped by pollutant and each is discussed briefly in the following subsections.

Ozone Plans

2004 Extreme 1-Hour Ozone Attainment Demonstration Plan

This Plan, adopted by the SJVAPCD in 2004, sets forth measures and emission reduction strategies designed to attain the Federal 1-hour ozone standard by November 15, 2010. This Plan was approved by the EPA on March 8, 2010; however, the EPA's approval was subsequently withdrawn effective November 26, 2012, in response to a decision issued by the U.S. Court of Appeals for the Ninth Circuit (Sierra Club v. EPA, 671 F.3d 955) remanding EPA's approval of these State Implementation Plan revisions. Concurrent with EPA's final rule, CARB is withdrawing the Plan. On May 6, 2014, the SJVAPCD submitted a formal request to the U.S. EPA, asking that the EPA determine the SJVAB has attained the Federal 1-hour ozone standard which was revoked in 1997.

2007 8-Hour Ozone Plan

This Plan sets forth measures and a "dual path" strategy to attain the Federal 8-hour ozone standard in the SJVAB by reducing emissions of ozone and particulate matter precursors. The Plan includes provisions that improve pollution control technologies for mobile and stationary sources, and Federal funding for incentive-based measures that reduce emissions. Local measures were to be adopted by the SJVAPCD before 2012. This Plan was approved by the EPA on March 1, 2012. On November 26, 2012, however, the EPA withdrew its determination that the Plan satisfied the Clean Air Act requirements due to emission growth caused by growth in vehicle-miles traveled (VMT). Other determinations in the EPA's March 1, 2012 rule approving the Plan remain unchanged and in effect.

2016 Ozone Plan for 2008 8-Hour Ozone Standard

In order to meet the December 31st 2031 deadline for attainment, this plan incorporates emissions reduction strategies for stationary sources including regulatory actions; incentive programs; technology advancement programs; policy and legislative activities; public outreach, education, and communication; and undefined strategies under "black box" provisions. The Plan demonstrates that existing regulations go above and beyond the Federal Reasonably Available Control Technology (RACT) requirement. The Plan also emphasizes that mobile source emissions, which fall under State and Federal jurisdiction, make up over 85% of the

Valley's NOx emissions. For this reason, the District request that CARB and EPA adopt and implement strategies so that sources outside District authority would be controlled enabling the standard to be met without the need for "black box" provisions. Moreover, the plan states that CARB and EPA action will be essential to attainment with the AAQS.

2022 Ozone Plan for the 2015 8-Hour Ozone Standard

The 2022 Ozone Plan for the San Joaquin Valley establishes a comprehensive strategy to attain the Federal 2015 8-hour ozone standard of 70 ppb by the 2037 deadline. Developed using advanced air quality modeling and the best available science, the plan builds on decades of emission reduction efforts by the San Joaquin Valley Air Pollution Control District and CARB. It demonstrates that a 72% reduction in NOx emissions by 2037 will enable attainment as expeditiously as practicable. The plan integrates regulatory development, outreach, research, and incentive programs.

Particulate Matter Plans

2007 PM_{10} Maintenance Plan

On October 25, 2007, CARB approved the 2007 PM_{10} Maintenance Plan and Request for Re-designation with modifications to the transportation conformity budgets. On September 25, 2008, the EPA approved the PM_{10} maintenance plan.

2008 $PM_{2.5}$ Plan

The US EPA set the first $PM_{2.5}$ standard in 1997 and in 2005 designated the Valley as nonattainment for the 1997 standard. The 1997 standard has two metrics for attainment: an annual average of 15 µg/m³ and a 24-hour average of 65 µg/m³. The SJVAPCD adopted the 2008 $PM_{2.5}$ Plan in April 2008 to demonstrate how the Valley would come into attainment of the 1997 $PM_{2.5}$ standard by no later than April 2015. US EPA subsequently lowered the 24-hour standard to 35 µg/m³ in 2006 and re-issued the nonattainment designation for the Valley in 2009.

The 2008 Plan is designed to assist the SJVAB in attaining each $PM_{2.5}$ standard, including the ones adopted by EPA in 1997 and 2006, and the State standard. On July 13, 2011, the EPA issued a proposed rule partially approving and disapproving the 2008 $PM_{2.5}$ Plan. Subsequently, on November 9, 2011, the EPA issued a final rule approving most of the Plan with an effective date of January 9, 2012. However, the EPA disapproved the plan's contingency measures because they would not provide sufficient emission reductions.

2012 $PM_{2.5}$ Plan

The 2012 $PM_{2.5}$ Plan builds on the prior $PM_{2.5}$ plans and demonstrates attainment of the newer 2006 24-hour $PM_{2.5}$ standard by the Federal attainment deadline of 2019, with the majority of the Valley actually experiencing attainment before 2019. Using the SJVAPCD Governing Board's guiding principles adopted in February 2012, this plan emphasizes public health as the number one priority in meeting National ambient air quality standards (NAAQS).

The 2012 $PM_{2.5}$ Plan is a multifaceted strategy that utilizes a combination of conventional and innovative control strategies to reduce emissions of $PM_{2.5}$ and other pollutants that form $PM_{2.5}$. The SJVAPCD's successes in adopting regulations and other strategies that have improved air quality provide the foundation for the Plan. In developing the Plan, the SJVAPCD claims to have left "no stone unturned" in evaluating potential strategies to reduce emissions.

In addition to reducing direct emissions of $PM_{2.5}$, the 2012 $PM_{2.5}$ Plan focuses on reducing oxides of nitrogen (NO_x) emissions, which is a predominant pollutant not only in the formation of $PM_{2.5}$ but also ozone. This overlapping effect and emphasis on reducing NO_x emissions addresses the area's primary air quality challenges, $PM_{2.5}$ and ozone. Along with comprehensive efforts at the local level to reduce emissions, reducing mobile source emissions that are not under the direct authority of SJVAPCD are critical to attaining the standard. The 2012 $PM_{2.5}$ Plan includes State and Federal measures that will provide significant new emissions reductions in the coming years. As outlined below, the Plan's comprehensive control strategy includes regulatory actions, incentive programs, technology advancement, policy and legislative positions, public outreach, participation and communication, and additional strategies.

2015 Plan for the 1997 $PM_{2.5}$ Standard

The 2015 Plan for the 1997 $PM_{2.5}$ Standard was adopted on April 16, 2015, and addresses the EPA annual $PM_{2.5}$ standard of 15 µg/m3 as well as the EPA 24-hour $PM_{2.5}$ standard of 65 µg/m3 both of which were established in 1997. The plan's strategy focuses on attaining the standard quickly, as well as prioritizing $PM_{2.5}$ emissions that pose the most health risk to residents.

2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard

The 2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard was adopted by the District on September 15, 2016. This Plan addresses the $PM_{2.5}$ NAAQS of 12 µg/m^3 with an attainment deadline of December 31, 2021, established in 2012. This Plan demonstrates the impracticability of attainment before the deadline and requests the area be reclassified from moderate to serious nonattainment.

2018 Plan for the 1997, 2006 and 2012 $PM_{2.5}$ Standards

Adopted on November 15, 2018, the plan includes significant incentive based control measures as well as control measures for stationary and area industrial sources. The plan also calls on CARB to act in order to achieve reductions of mobile sources.

SB 656 Particulate Matter Control Measure Implementation Schedule

Senate Bill (SB) 656 was enacted in 2003 and codified as Health and Safety Code Section 39614. SB 656 seeks to reduce exposure to PM_{10} and $PM_{2.5}$ and make further progress toward attainment of the NAAQS and CAAQS for PM_{10} and $PM_{2.5}$. SB 656 required CARB, in consultation with local air districts, to develop and adopt lists of "the most readily available, feasible, and cost-effective" particulate matter control measures. Subsequently, air districts were required to adopt implementation schedules for relevant control measures.

In June 2005, The SJVAPCD adopted its SB 656 Particulate Matter Control Measure Implementation Schedule, and has adopted each relevant strategy into their rules.

2024 Plan for the 2012 Annual PM2.5 Standard

The 2024 Plan for the 2012 PM2.5 Standard was adopted to address the annual PM2.5 NAAQS of 12 µg/m³ established in 2012. The plan outlines BACM and BACT measures, incentive programs, and requests an attainment deadline extension due to the impracticability of meeting the standard on time. It emphasizes continued collaboration with CARB and EPA to reduce emissions from sources beyond District authority.

3.1.4.2 Rules and Regulations

The following SJVAPCD rules and regulations are applicable to Project sources. Rule summaries are provided to clarify applicability, and excludes rules that do not apply which are numerous and exhaustive.

Regulation I (General Provisions)

Rule 1160 (Emission Statements)

Rule 1160 requires owners/operators of stationary sources that emit NOX or ROG to submit annual emission inventories. More information can be found in the Air Resources Board's "Instructions for the Emission Data System Review and Update Report" document. (California Air Resources Board, 1988)

Regulation II (Permits)

Rule 2010 (Permits Required)

Rule 2010 requires newly proposed non-exempt sources of emissions to obtain an Authority to Construct prior to construction. Prior to operation of the new source, the SJVAPCD also requires that a Permit to Operate be obtained. Permits to Operate must be posted and maintained on or near the source of the air pollution.

Rule 2201 (New and Modified Stationary Source Review)

Rule 2201 establishes SJVAPCD's program to limit emissions at new and modified sources so that there is no net increase in emissions within the SJVAB. Rule 2201 uses BACT and mechanisms such as emissions offsets, to ensure that AAQS are met or maintained. Criteria pollutants are regulated under this Rule, including VOC, NO_x, SO_x, PM_{10}, $PM_{2.5}$, and CO. Under Rule 2201, BACT is required if the emissions of a regulated pollutant would exceed two (2) pounds per day. In addition, emission offsets to mitigate an increase in emissions from a new or modified stationary source would be required if the facility's emissions exceed the following amounts:

- 20,000 pounds per year of NO_x or VOC;

- 54,750 pounds per year of SO_x; or
- 29,200 pounds per year of PM_{10}.

Rule 2280 (Portable Equipment Registration)

Rule 2280 outlines the procedure and requirements associated with the registration of portable emissions units. Sand and gravel screening, rock crushing, and RAP crushing operations are among operations eligible for registration of portable equipment, if a portable diesel-fired engine will be used to power processing equipment. Rule 2280 would be applicable to the Project if temporary construction requires equipment (such as a generator set) under Rule 2280.

Rule 2530 (Federally Enforceable Potential to Emit)

The purpose of Rule 2530 is to restrict a facility's potential to emit so that the facility may be exempt from the requirements of Rule 2520 (Federally Mandated Operating Permits). This Rule applies to any stationary source that would be a major source of regulated air pollutants or of hazardous air pollutants if limitations were not imposed. Rule 2530 also includes recordkeeping and reporting requirements. Rule 2530 allows facilities to be excluded from the Title V program (see Rule 2520) by taking limits or keeping records to demonstrate that their emissions are below the applicable thresholds. This process is also referred to as a "synthetic minor" or Federally Enforceable State Operating Permit (FESOP).

Regulation III (Fees)

Regulation III contains rules related to District fees. The Project may be subject to fees related to permitting, air toxics, dust, ozone, as well as others.

Regulation IV (Prohibitions)

Rule 4001 (New Source Performance Standards)

Rule 4001 codifies the SJVAPCD's adoption and incorporation of Federal New Source Performance Standards (NSPS) as set forth in 40 CFR Part 60. NSPS apply to a variety of stationary sources, including asphalt plants and aggregate processing plants. The regulation imposes emissions standards for relevant pollutants and requires that specified emission performance standards, control equipment, and monitoring devices be installed at all new, modified, or reconstructed facilities to limit emissions. The regulation includes test methods, monitoring, notification, and recordkeeping requirements. The asphalt plant and aggregate plant are subject to 40 CFR Part 60, Subparts I and OOO, respectively; those regulations are discussed in previous sections.

Rule 4101 (Visible Emissions)

Rule 4101 prohibits emissions of visible air contaminants, other than water vapor, from resulting in greater than Number 1 on Ringelmann Chart (i.e. 20% opacity) for a combined period of more than 3 minutes in any hour.

Rule 4102 (Nuisance)

To protect the public health, Rule 4102 prohibits any person from discharging such quantities of air contaminants that cause injury, detriment, nuisance, or annoyance to a considerable number of persons or to the public.

Rule 4201 (Particulate Matter Concentration)

Rule 4201 establishes a particulate matter concentration standard governing release or discharge of dust, fumes, or total suspended particulate matter emissions into the atmosphere from any single-source operation exceeding 0.1 grains/dry standard cubic foot of gas (gr/dscf).

Rule 4202 (Particulate Matter Emission Rate)

Rule 4202 limits the weight rate of particulate matter emissions. The Rule specifies allowable emissions rates based on a process weight rate equation and calculations for various rates in an associated table within the rule.

Rule 4301 (Fuel Burning Equipment)

Rule 4301 limits the emission of air contaminants from fuel burning equipment. Included in this rule are requirements that fuel burning equipment not discharge:

- Combustion contaminants exceeding 0.1 gr/dscf at 12% carbon dioxide;
- Discharge greater than 200 lbs per hour of sulfur compounds;
- Discharge greater than 140 pounds per hour of nitrogen compounds; or,
- Discharge greater than 10 pounds per hour of combustion contaminants.

Rule 4307 (Boilers, Steam Generators, and Process Heaters)

Rule 4307 establishes NO_x and CO emissions limits for boilers, steam generators, and process heaters. This rule applies to units fired on gaseous or liquid fuel, having heat input of between 2.0 and 5.0 million British thermal units per hour (MMBtu/hr) or greater. The applicable limits for new units are 9 ppmv NO_x at 3% oxygen and 400 ppmv CO at 3% oxygen. The rule includes monitoring and recordkeeping requirements. Compliance with the emission limits must be determined by periodic source testing. This rule applies to the hot oil heater in the asphalt plant.

Rule 4309 (Dryers, Dehydrators, and Ovens)

Rule 4309 establishes NO_x and CO emissions limits for dryers, dehydrators, and ovens. This Rule applies to units fired on gaseous or liquid fuel, having a total rated heat input of 5.0 MMBtu/hr or greater. The applicable limits for burners at asphalt plants are 4.3 ppmv NO_x at 19% oxygen and 42 ppmv CO at 19% oxygen when fired on gaseous fuel. The Rule includes monitoring and recordkeeping requirements. Compliance with the emission limits must be determined by periodic source testing or an approved alternate emissions monitoring system.

Regulation VIII (Fugitive PM_{10} Prohibitions)

The rules under Regulation VIII are intended to reduce ambient concentrations of particulate matter (PM_{10} or larger) and were developed pursuant to EPA guidance for Serious PM_{10} Nonattainment Areas. These rules are applicable to specified anthropogenic sources. Applicability of each rule is discussed below and requirements are presented for rules that apply to the Project. Rule 8081 is omitted because it only applies to agricultural sources.

Rule 8021 (Construction, Demolition Excavation, Extraction, and Other Earthmoving Activities)

Rule 8021 prohibits construction, demolition, excavation, extraction, or other earthmoving activities unless the appropriate requirements are sufficiently implemented to limit visible dust emissions (VDE) to 20% opacity. Blasting emissions are exempt from this rule.

Rule 8031 (Bulk Materials)

Rule 8031 requires facilities that perform outdoor handling, storage, and transport of bulk materials to use prescribed methods to limit VDE to 20 percent opacity or to comply with the conditions for a stabilized surface as defined in Rule 8011 (General Requirements). Methods to limit VDE listed in Rule 8031 include:

- Applying water or chemical/organic stabilizers/suppressants;
- Constructing and maintaining sufficient barriers to obstruct wind;
- Maintaining stabilized surfaces on piles; covering bulk materials with tarps, plastic, or other suitable material; limiting on-site vehicle speed;
- Loading haul trucks to limit VDE;
- Applying water on the top of loads to limit VDE;
- Covering haul trucks with tarps or other covers to limit VDE; and
- Maintaining haul trucks to prevent spillage or loss of bulk materials.

Rule 8041 (Carryout and Trackout)

The purpose of Rule 8041 is to prevent or limit fugitive dust emissions from carryout and trackout on paved public roads or the paved shoulders of paved public roads. Facilities subject to Rules 8021, 8031,

8061, or 8071 must also comply with this rule. Rule 8041 requires that affected facilities prevent and/or clean up carryout and trackout at the end of each workday. Cleanup of carryout and trackout is accomplished by manually sweeping and picking up, operating a rotary brush or broom accompanied by sufficient wetting to limit VDE to 20% opacity, operating a PM_{10}-efficient street sweeper that has a pick-up efficiency of at least 80%, or flushing with water if curbs and gutters are not present and where the use of water will not result in a source of trackout material or other adverse impacts, such as a water quality violation under the National Pollutant Discharge Elimination System program. Rule 8041 requires that owners/operators of sites with paved interior roads use a trackout control device to reduce carryout and trackout. Rule 8041 prohibits the use of blower devices, dry rotary brushes, or brooms for removal of carryout and trackout on public roads.

Rule 8051 (Open Areas)

The purpose of Rule 8051 is to limit fugitive dust emissions from open areas. The rule applies to open areas 0.5 acre or more within urban areas, and 3.0 acres or more within rural areas, that contain at least 1,000 square feet of disturbed surface area. Whenever open areas are disturbed or vehicles are used in open areas, control measures are required to comply with the conditions of a stabilized surface and to limit VDE to 20% opacity. Control measures to be used include: applying and maintaining water or other chemical dust suppressants to unvegetated areas; establishing vegetation on previously disturbed areas; or paving, applying, and maintaining gravel. Where open areas are disturbed due to trespass, such activities should be prevented by posting “No Trespassing” signs or installing physical barriers such as fences.

Rule 8061 (Paved and Unpaved Roads)

The purpose of Rule 8061 is to limit fugitive dust emissions from paved and unpaved roads by implementing control measures and design criteria. This rule applies to any new or existing public or private paved or unpaved roads, road construction projects, and road modification projects. Rule 8061 requires that new or modified paved roads have certain specifications based on the road’s existing or projected annual average daily trips (AADT). Requirements include minimum paved or stabilized shoulder widths, as well as curbing, intersection, and median specifications. The Rule prescribes requirements for maintenance of public paved roads, including specifications for PM_{10}-efficient sweepers and road cleanup. Rule 8061 requires unpaved road segments with 26 or more AADT to stabilize surfaces by application of water, chemical dust suppressant, washed gravel, or similar measures. Unpaved roads with fewer than 26 AADT are exempt from some requirements of this rule.

Rule 8071 (Unpaved Vehicle/Equipment Traffic Areas)

This rule limits fugitive dust emissions from unpaved vehicle and equipment traffic areas with 50 or more AADT by stabilizing road surfaces with water, chemical dust suppressant, washed gravel, or similar measures. Unpaved vehicle and equipment traffic areas with less than 50 AADT are exempt from Rule 8071.

3.1.4.3 SJVAPCD CEQA Air Quality Analysis and Modeling Guidance

The SJVAPCD Air Quality Modeling: Permitting and CEQA webpage [3] links to documents prepared by the District and others and notes that modeling guidance provided by the District is dated and may not be the best approach if one is trying to use currently accepted methods such as those employed by OEHHA. For this reason, this Report has been written utilizing the Air Toxics Hotspots Program Guidance Manual for the Preparation of Risk Assessments (OEHHA, 2015).

3.1.4.4 Voluntary Emissions Reduction Agreement (VERA) Program

SJVAPCD creates ROG, NOx and PM_{10} emissions reductions by providing incentive funding primarily to owners of engines who volunteer to replace older, high polluting engines with lower emitting alternatives (e.g., new engine, electric/battery, etc.). Emissions reductions administered by the District satisfy requirements for banking emissions reduction credits (ERC) under Rule 2301 insofar as the emissions reductions are real, surplus, permanent, quantifiable, and enforceable. Some of the funding for these projects comes from VERAs between the District and developers of land use projects that require additional mitigation of these pollutants in order to reduce their project emissions impacts to less than the significance thresholds in the associated CEQA document (e.g., EIR). Section 9.2 in the GAMAQI (SJVAPCD, 2015) states:

> *"Design elements, mitigation measures, and compliance with District rules and regulations may not be sufficient to reduce project - related impacts on air quality to a less than significant level. In such situations, project proponents may enter into a Voluntary Emission Reduction Agreement (VERA) with the District to reduce the project related impact on air quality to a less than significant level. A VERA is a mitigation measure by which the project proponent provides pound - for - pound mitigation of air emissions increases through a process that funds and implements emission reduction projects. A VERA can be implemented to address impacts from both construction and operational phases of a project.*
>
> *To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate project specific emissions by providing funds to the District. The District's role is to administer the implementation of the VERA consisting of identifying emissions reductions projects, funding those projects and verifying that emission reductions have been successfully achieve. The VERA implementation process also provides opportunity for the project proponent to identify specific emission reduction projects to be administered by the District. The funds are disbursed by the District in the form of grants. Types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy - duty trucks with new, cleaner, more efficient heavy - duty trucks, and replacement of old farm tractors.*
>
> *The District verifies the actual emission reductions that have been achieved as a result of completed grant contracts, monitors the emission reduction projects, and ensures the*

[3] http://valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm#modeling_guidance

enforceability of achieved reductions. The initial agreement is generally based on the projected maximum emissions increases as calculated by a District approved air quality impact assessment, and contains the corresponding fiscal obligation. However, the District has designed flexibility into the VERA such that the final mitigation can be based on actual emissions related to the project as determined by actual equipment used, hours of operation, etc. After the project is mitigated, the District certifies to the Lead Agency that the mitigation is completed, providing the Lead Agency with an enforceable mitigation measure demonstrating that project specific emissions have been mitigated to less than significant. [Underline added].

To ensure all feasible mitigation measures are incorporated into the project to reduce project air quality impact to less than significant, the District recommends the project proponent (and/or Lead Agency) engage in discussion with the District to have the VERA adopted by the District prior to the finalization of the environmental document. This process will allow the environmental document to appropriately characterize the project emissions and demonstrate that the project impact on air quality will be mitigated to less than significant under CEQA as a result of the implementation of the adopted VERA.

The District has been developing and implementing VERA contracts with project proponents to mitigate project specific emissions since 2005. It is the District's experience that implementation of a VERA is a feasible mitigation measure, which effectively achieves the emission reductions required by a Lead Agency, including mitigation of project-related impacts on air quality by supplying real and contemporaneous emissions reductions.

Therefore, Lead Agencies should require the project proponent to negotiate a VERA with the District prior to the Lead Agency's final approval of the CEQA document. This allows the Lead Agency to disclose to the public the certainty that the VERA is assuring full mitigation of air quality impacts as specified in the environmental review document or equivalent documentation certified by the Lead Agency. The 2017 Annual Financial Report states:

Under a VERA, two mitigation approaches are available: "pollutant-by-pollutant" and "net zero". The mitigation of project emissions impacts "pollutant-by-pollutant" means that each NOx, VOC and PM_{10} project emission will be mitigated individually to their respective significance threshold level. The mitigation of project emissions impacts to "net zero" means that the sum of NOx, VOC and PM_{10} combined project emissions will be fully mitigated by the sum of NOx, VOC and PM_{10} combined emission reductions achieved under the VERA. The "net zero" concept is limited to the three pollutants NOx, VOC and PM_{10}, due to their strong interrelatedness. NOx is the driving pollutant for both the wintertime PM problem and the summertime ozone problem (in combination with VOC). The District considers "net zero" mitigation to result in a less than significant air quality impact for these three pollutants, even if VOC or PM_{10} emissions remain above their individual significance thresholds after mitigation, because this means that the mitigation has achieved excess reductions of NOx, the critical component to the Valley's air quality issues. [Underline added].

> *The District strongly recommends the "net-zero" approach. This method results in a significantly larger amount of NOx reduction, which is the primary driver to the formation of ozone and PM in the Valley."*

The 2017 Financial Report describes the amount of funding and emissions reductions that have occurred in the Program and during the last year as follows:

> *"The District has entered into thirty-two VERAs since 2005. One hundred percent (100%) of all off-site mitigation fees are used by the District to fund emission reduction projects through its Incentives Programs, achieving emission reductions on behalf of the project. Additionally, developers pay an administrative fee equal to four percent (4%) of the required off-site fees. This fee is to cover the District's cost of administering the off-site emission reduction projects.*
>
> *To date, in addition to avoiding approximately 12,500 tons of NOx and PM_{10} emissions from new development through the incorporation of on-site mitigation and clean-air design measures into projects subject to Rule 9510, the District has confirmed approximately 6,900 tons of reductions in NOx and PM_{10} emissions have been achieved through the investment of ISR and VERA funds in its emission reduction incentive programs.*
>
> *This year the District achieved emission reductions totaling 501 tons NOx and 102 tons PM_{10}, for a combined total of 603 tons at a cost effectiveness of $ 8,123 per ton of emissions reduced.*

Based on language in recent Governing Board approved VERAs, the applicant proposes to pre-pay for potential excess emissions of NOx, VOC, and/or PM_{10} (i.e., "criteria pollutants") should emissions from permit-exempt sources exceed an applicable ton per year significance threshold. Similarly, permitted sources would purchase emissions credits if they exceed applicable significance thresholds except that the emissions reductions would need to have been banked by another facility and issued certificates by the District as Emissions Reduction Credits (ERCs) under the District's stationary source permitting program.

Applicants that enter a VERA may pay up-front for potential excess emissions predicted for the entire project; or for shorter periods called "project phases." Project phases as short as three months or long as one year have been allowed in VERAs with the choice of duration left to the applicant's discretion. Project phases in context of a VERA are periods for which emissions are pre-paid and after which the actual excess emissions above the significance thresholds may be calculated by the applicant and reconciled with the amount of emissions reductions achieved by the District with applicant funds. If actual emissions during a project phase were less than the significance thresholds in the environmental document, then the emissions reductions purchased would roll-over to serve as a pre-payment for a future project phase. If actual emissions exceed one or more significance thresholds, then pre-paid emissions reductions equal to the actual excess project emissions for each pollutant would be deducted from the amount of emissions reductions achieved by the District. Remaining reductions achieved by the District after subtracting the actual excess emissions above the significance threshold would then roll-over to a future project phase. Alternatively, the applicant may

transfer emissions reductions to another project within the District that requires mitigation of emissions impacts under CEQA.

The Project would pay its fair share to mitigate the cumulative effects of ozone (VOC, NOx) and PM_{10} by complying with the existing in-use on- and off-road diesel engine regulations. In addition, it is likely that the maximum production amounts analyzed for the Project would first occur many years in the future after the diesel engine requirements are fully implemented potentially reducing emissions from those presented in this Report which follow conservative methodologies to ensure they represent the maximum reasonably foreseeable future condition with the project.

3.1.5 County of Fresno

General Plan

The County of Fresno General Plan contains numerous air quality policies and goals that are summarized in Appendix E for convenience. Policies OS-G.2 and OS-G.14 apply to the Project as they respectively identify the Project as subject to the CEQA review process, and require minimization of particulate emissions from industrial driveways.

Policy OS-G.2

The County shall ensure that air quality impacts identified during the CEQA review process are fairly and consistently mitigated. The County shall require projects to comply with the County's adopted air quality impact assessment and mitigation procedures. (County of Fresno, 2024)

The Project is consistent with this goal, as appropriate environmental analysis has been conducted in preparation of this report. Therefore, while this policy applies to the Project, its requirements are satisfied by the existence of this Report and compliance with Rule 8041.

Policy OS-G.14

The County shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use. (County of Fresno, 2024)

Because it would follow SJVAPCD particulate emissions control rules and ensure compliance with applicable Fresno County Ordinances, The Project would be consistent with this goal.

Policy EJ-A.3

The County shall during the development review land use process coordinate with local commercial and industrial developments to review and require incorporation into their projects the latest technologies and best practices to reduce emissions.

The county has reviewed feasible technologies and best practices for the Project and they are incorporated where appropriate.

Policy EJ-A.8

The County shall provide residents within disadvantaged communities the opportunity to review and comment on discretionary development projects within their communities.

A EIR has been prepared for the Project and communities within the County have had the opportunity to review and comment.

Policy EJ-A.12

New industrial development, which has the potential to create compatibility conflicts with surrounding sensitive uses, shall incorporate measures such as landscaped setbacks along road frontage, block walls, signage disclosing on-site emergency contact information, enclosed loading docks, and placement of loading docks and idling areas away from sensitive receptors in order to minimize potential impacts.

The Project has incorporated measures that minimize potential impacts. Mitigation measures include a dust control plan and other requirements that would minimize potential impacts to less than significant levels.

Policy EJ-A.13

Automobile parking areas for new industrial development shall be planted with trees in a manner to provide adequate shade cover of at least 35% of the parking area utilizing trees or a combination of trees and photovoltaic solar shade structures. Landscaping for new industrial development shall use drought tolerant species with low biogenic emissions.

The Project would have parking for employees and would provide adequate shade cover for those vehicles.

Policy EJ-A.15

Consistent with the provisions contained in the California Air Resources Board (CARB) Air Quality and Land Use Handbook, project applicants shall identify appropriate measures for projects with sensitive uses located within 500 feet of freeways, heavily traveled arterials (daily vehicle trips of 10,000 or more), railways, and other sources of diesel particulate matter (DPM) and other known carcinogens. The County shall require development projects that are located within 500 feet of freeways, heavily traveled arterials (daily vehicle trips of 10,000 or more), railways, and other sources of DPM and other known carcinogens to retain a qualified air quality consultant to prepare a health risk assessment

(HRA)in accordance with the CARB and the California Environmental Protection Agency's Office of Environmental Health and Hazard Assessment requirements to determine the exposure of nearby sensitive receptors to emission sources resulting from the project. Measures identified in the HRA shall be enforced by the County.

The referenced Handbook omits industrial development projects from consideration. It is unclear if this applies to the Project. Nevertheless, a HRA was prepared for this project.

Code of Ordinances

15.04.120 Public Nuisance in Construction and Demolition

Any person to whom a permit has been issued as provided herein for the repair, alteration, demolition or construction of any structure shall comply with each of the following:

A. Take reasonable precaution to prevent or control the movement of wind born dust created by such activities;

B. Promptly remove all dust and mud tracked into a public street by the movement of vehicles, equipment, materials and personnel;… (Fresno County, CA, 2026)

3.2 Environmental Setting

The environmental setting includes the existing physical setting that is compared to future conditions with the Project to determine the Project's impact. In addition to pollutant emissions, the air quality environment is affected by terrain and meteorology.

Terrain plays a role in air dispersion dynamics, and the resulting levels of air pollutants in a given area. Mountains that surround valley areas tend to retain air within the valley and limit the dispersion of pollutants. Meteorology causes year-to-year changes in air quality trends that can mask or overstate the benefits of emission reductions. Unlike terrain, meteorology affects pollutant concentrations differently depending upon the pollutant as discussed in the following examples:

- Ozone is formed in the atmosphere as sunlight initiates a complex set of chemical reactions. On hot sunny days, the abundant sunlight starts the ozone-forming processes and high temperatures promote fast chemical reactions. If the air is stagnant, the ozone formed is not dispersed or diluted by cleaner air from outside the area, thus, the highest ozone concentrations usually occur on hot and sunny days with light breezes or calm air. In some areas, high ozone levels may result from transport of pollutants from upwind regions. Since hot and sunny summer days typically lead to high ozone, it is un-surprising that cold and cloudy winter days have much lower ozone concentrations. (CARB, 2014).
- Ambient PM is comprised of primary PM that is directly emitted and secondary PM that forms in the atmosphere through chemical and physical processes. Primary PM includes dust and soot, while secondary PM includes particulate nitrates and sulfates. Some areas are subject to strong winds that

lift dust into the air resulting in high concentrations of primary PM. In other situations, cold, calm, and humid air can promote the buildup of secondary PM. Relatively high PM levels in valley areas usually occur in the winter under these meteorological conditions. The lowest PM concentrations often occur on rainy winter days when winds disperse PM and rain washes PM out of the air. (CARB, 2014).

3.2.1 Regional Setting

The Project site is located in the central portion of the San Joaquin Valley Air Basin (SJVAB or Basin). Air pollution is directly related to several factors including a region's topographic features. The SJVAB is defined by the Sierra Nevada mountain range in the east (8,000 to 14,000 feet in elevation), the Coast Range in the west (averaging 3,000 feet in elevation), and the Tehachapi Mountains in the south (6,000 to 8,000 feet in elevation). The valley is basically flat with a slight downward gradient to the northwest. The Valley opens to the Pacific Ocean at the Carquinez Strait, where the San Joaquin-Sacramento Delta discharges into San Francisco Bay.

Although marine air generally flows into the basin from the San Joaquin River delta, the region's topographic features restrict air movement within the basin. The Coast Range hinders wind access into the Valley from the west, the Tehachapi Mountains prevent southerly passage of air, and the Sierra Nevada mountain range to the east is a barrier to air movement. These topographic features result in weak air flow, which becomes blocked vertically by high barometric pressure over the Valley. As a result, the SJVAB is susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500 to 3,000 feet).

During the summer season, wind usually originates at the north end of the Valley, passing through Tehachapi Pass into the Mojave Desert Air Basin. During the winter, wind occasionally originates from the south end of the Valley and flows in a north-northwesterly direction. During the winter months, the Valley experiences light, variable winds, which are usually less than 10 miles per hour (mph). Low wind speeds combined with low inversion layers during the winter creates a climate conducive to the accumulation CO and PM_{10}.

According to Western Regional Climate Center, the Fresno Airport, located approximately 12 miles south of the Project Site, is the nearest meteorological station to the Project. Average monthly temperatures range from a minimum of 37°F to a maximum of 98°F. December and January are typically the coldest months with July and August the warmest in Fresno County. Annual rainfall totals approximately 11 inches and mostly occurs between November and April. Summer rainfall is minimal and generally limited to scattered thundershowers over the Sierra Nevada mountain range ((WRCC, 2016).

3.2.2 Project Site and Local Setting

The Modification Project consists of two sites both located east of the San Joaquin River and west of Friant Road. The approximately 122 acre Plant Site is located 2.0 miles north of the City of Fresno and the approximately 349 acre Quarry site is located 2.0 miles north of the Plant site. Activities were quantified using production/sales records, vehicle fleet information, and other site-specific data (Appendix C).

The SJVAPCD maintains ambient air quality monitoring stations throughout the SJVAB. Air pollutants monitored at each station may differ; thus, data from the closest representative station that monitors each pollutant is used as background concentrations for purposes of impact assessment. Air quality monitoring stations located within urban areas take ambient measurements which generally reflect community exposure levels. Air quality at the Project site is almost certain to be better than air quality in the Project vicinity because the Project site and surrounding lands are characterized as rural with few air emissions sources. Accordingly, the Project site is generally characterized as having lower concentrations of air pollutants than more urban areas where there are more emissions sources and where ambient measurements are often collected.

The closest ambient air quality monitoring station to the Project site is the Clovis North Villa Ave. station (AQS ID 06-019-5001). This station is located approximately 9 miles south of the Project site and measures O_3, CO, NO_2, CH_4, Total Hydrocarbons, Total NMHC, PM_{10}, $PM_{2.5}$, and select TACs. The Station is constructed to monitor at a neighborhood scale covering an area between 0.5 and 4.0 kilometers in range. Data is collected for the purpose of observing the highest concentration of pollutants in the area. (SJVAPCD, 2018)
SO_2 is recorded at the Fresno–Garland monitoring station located approximately 12 miles south of the Project site. The station is constructed to monitor at neighborhood and urban scales covering an area between 0.5 and 50 kilometers in range. Data is collected for the purpose of observing the concentration experienced by the population in the community. (SJVAPCD, 2018)

Ambient concentrations and number of days when the AAQS were exceeded in 2020-2024 are presented in Table 4 and Table 5. In summary, CO, SO2, and NO2 levels have not exceeded State or Federal standards over the past five years. O3 exceeded the State one-hour and eight-hour standards and the Federal eight-hour standard in each of the past five years. PM10 levels exceeded the 24-hour and annual State standard in each of the last five years and the 24-hour Federal standard in 2020. PM2.5 levels exceeded the 24-hour Federal standard in four of the last five years. Furthermore, PM2.5 exceeded the annual Federal standard in 2020 and 2021 and exceeded the annual State standard in only 2020.

Table 4 Number of Days Exceeding Air Quality Standards

Monitoring Site	Year	Days Exceeding State 1-Hour O_3	Days Exceeding State 8-Hour O_3	Days Exceeding Federal 8-Hour O_3	Days Exceeding State 24-Hour PM_{10}[a]	Days Exceeding Federal 24-Hour $PM_{2.5}$[a]
Clovis North Villa Ave	2020	12	41	36	117.5	40
	2021	9	37	34	112.4	22
	2022	3	26	23	73.8	4.3
	2023	3	23	21	44	0
	2024	16	51	45	66	7

Source: CARB iADAM Statistical Analysis Tool

a Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and 3 days, respectively. “Number of days exceeding the standards” are mathematical estimates.

Table 5 Ambient Air Quality in the Project Area

Concentration Averaging Period	Monitoring Station	Ambient Air Quality Standard	2020	2021	2022	2023	2024
Ozone (O_3)							
Max. 1-hr	Clovis North Villa Ave (site no. 5001)	0.090 ppm (state)	0.142	0.123	0.109	0.102	0.109
Max. 8-hr		0.070 ppm (state)	0.108	0.100	0.084	0.083	0.092
		0.075 ppm (fed.)	0.108	0.100	0.084	0.083	0.092
Nitrogen Dioxide (NO_2)							
Max. 1-hr	Clovis North Villa Ave (site no. 5001)	0.180 ppm (state)	0.060	0.060	0.050	0.050	0.050
		0.100 ppm (fed.)	0.051	0.046	0.043	0.041	0.040
Annual		0.030 ppm (state)	0.009	0.007	0.009	0.007	0.006
		0.053 ppm (fed.)	0.010	0.008	0.009	0.008	0.007
Carbon Monoxide (CO)							
Max. 1-hr	Clovis North Villa Ave (site no. 5001)	20 ppm (state) 35 ppm (fed.)	2.9	1.3	1.3	1.5	1.4
Max. 8-hr		9.0 ppm (state) 9.0 ppm (fed.)	2.6	1.2	1.1	1.3	1.0
Respirable Particulate Matter (PM_{10})							
Max. 24-hr	Clovis North Villa Ave (site no. 5001)	50 $\mu g/m^3$ (state)	296.0	208.8	120.0	103.1	119.1
Max. 24-hr		150 $\mu g/m^3$ (fed.)	180.9	125.0	127.0	104.7	122.7
Annual		20 $\mu g/m^3$ (state)	50.8	43.2	36.2	30.5	33.3
Fine Particulate Matter ($PM_{2.5}$)							
Max. 24-hr	Clovis North Villa Ave (site no. 5001)	35 $\mu g/m^3$ (fed.)	193.7	104.6	41.9	34.7	51.3
Annual		12 $\mu g/m^3$ (state)	18.4	ND	10.5	8.5	10.5
Annual		15 $\mu g/m^3$ (fed.)	18.4	15.1	10.5	8.5	10.6
Sulfur Dioxide							
Max. 1-hr	Fresno-Garland (site no. 14)	0.075 ppm (fed.) 0.25 ppm (state)	0.016	0.008	0.003	0.005	0.011
Max. 1-hr							
Max. 24-hr		0.04 ppm (state)	0.002	0.003	0.001	0.002	0.002

Sources: California Air Resources Board (CARB) iADAM Air Quality Data Analysis (California Air Resources Board, n.d.)
EPA Air Quality Data (Environmental Protection Agency, 2025)

As shown in Table 5, predicted concentrations of criteria pollutants are less than each AAQS and mitigated annual emissions are less than applicable significance thresholds. Therefore, the Project would not, by itself, cause an exceedance. When added to background concentrations reported for the closest air monitoring station, the cumulative concentration of each pollutant is less than the associated AAQS (Table 5).

3.2.3 Health Effects Setting

NAAQS/CAAQS and Reference Exposure Levels (REL) that are used for health risk assessment are designated for each pollutant at a level where no "adverse health effect" would occur to sensitive populations. The OEHHA relies upon the definition of "adverse health effect" published by American Thoracic Society (ATS). ATS published a definition in 1985 and then amended the definition in 2000 to address issues not covered by the 1985 definition. From the 1985 definition, "adverse respiratory health effect" means:

> *Medically significant physiologic or pathologic changes generally evidenced by one or more of the following:*
>
> 1. *Interference with the normal activity of the affected person or persons;*
> 2. *Episodic respiratory illness;*
> 3. *Incapacitating illness;*
> 4. *Permanent respiratory injury; and/or*
> 5. *Progressive respiratory dysfunction.* (OEHHA, 2004).

The 2000 ATS publication (see copy in Appendix D) recommends that the following "dimensions" of adverse effects be considered when determining whether an effect is an adverse health effect:

1. *Biomarkers: These should be considered, however it must be kept in mind that few biomarkers have been validated sufficiently to establish their use for defining a point at which a response becomes adverse, consequently, not all changes in biomarkers should necessarily be considered adverse.*
2. *Quality of life: In recent years, decreased health-related quality of life has become widely accepted as an adverse health effect. The review committee concluded that reduction in quality of life, whether in healthy persons or persons with chronic respiratory disease, should be considered as an adverse effect.*
3. *Physiological impact: The committee recommended that small, transient reductions in pulmonary function should not necessarily be regarded as adverse, although permanent loss of lung function should be considered adverse. The committee also recommended that reversible loss of lung function in conjunction with symptoms should be considered adverse.*
4. *Symptoms: Air pollution-related symptoms associated with reduced quality of life or with a change in clinical status (i.e., requiring medical care or a change in medications) should be considered adverse at the individual level. At the population level, the committee suggested that any detectable increase in symptom frequency should be considered adverse.*
5. *Clinical outcomes: Detectable effects of air pollution on clinical measures should be considered adverse. More specifically, the ATS committee cited as examples increases in emergency department visits for asthma or hospitalizations for pneumonia, at the population level, or an increased need to use bronchodilator medication, at the individual level. The committee recommended that: "no level of effect of air pollution on population-level clinical indicators can be considered acceptable."*

6. *Mortality: Increased mortality should clearly be judged as adverse.*
7. *Population health versus individual risk: The committee concluded that a shift in risk factor distribution, and hence the risk profile of an exposed population, should be considered adverse when the relationship between the risk factor and the disease is causal, even if there is no immediate occurrence of obvious illness*. (OEHHA, 6/2004).

Based on ATS recommendations above, many health outcomes found to be associated with criteria pollutants could be considered adverse, including pulmonary function changes accompanied by symptoms, pulmonary function changes and respiratory symptoms that reduce quality of life, large changes in pulmonary function, clinical outcomes such as emergency department visits for asthma, hospitalization for respiratory and cardiovascular disease, and mortality. In addition, outcomes such as increase in airway reactivity and inflammation may be considered adverse if they signify increases in the potential risk profile of the population.

> *With regard to sensitivity, the 1970 Clean Air Act recognized that some persons were so ill as to need controlled environments, e.g., persons in intensive care units or newborn infants in nurseries; the act stated that the standards might not necessarily protect such individuals. It further stated, however, that the standards should protect "particularly sensitive citizens such as bronchial asthmatics and emphysematics who in the normal course of daily activity are exposed to the ambient environment.* (ATS, 2000).

Finally, according to ATS, research now shows that some highly susceptible individuals may respond to common exposures at or close to natural background pollutant levels that are often unavoidable. A copy of the relevant ATS document, "WHAT CONSTITUTES AN ADVERSE HEALTH EFFECT OF AIR POLLUTION?" is provided in Appendix D.

3.3 Significance Thresholds

The CEQA Guideline Appendix G checklist was used along with the SJVAPCD CEQA Guidelines and the GAMAQI to determine whether the Project would result in a significant air quality impact. Project impacts represent the change between baseline and the future conditions associated with the proposed operations, and are the metrics compared to thresholds to determine significance.

3.3.1 CEQA Guidelines Appendix G

The Environmental Checklist Form in Appendix G of the CEQA Guidelines presents questions about projects that, if true for a particular project, would be considered a significant impact. This Report considers the following Environmental Checklist Form questions to be the Significance Thresholds against which Project air quality impacts are judged.

Would the project:

a) *Conflict with or obstruct implementation of applicable air quality plan?*

b) *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard?*

c) *Expose sensitive receptors to substantial pollutant concentrations?*

d) *Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?*

3.3.2 SJVAPCD CEQA Significance Criteria

Significance thresholds used when SJVAPCD is the lead agency under CEQA are presented in Table 6 and used by the County as criteria in evaluating the Environmental Checklist Form questions presented Section 3.3.1 above.

Table 6 SJVAPCD Air Quality Significance Thresholds

Criteria Pollutants			
Pollutant	Construction Phase [b] (ton/yr)	Operation Phase Permit-Required [c] (ton/yr)	Operation Phase Permit-Exempt [c] (ton/yr)
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15
Recommended Toxic Air Contaminants (TACs), Odor Thresholds[b]			
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 20 in 1 million Chronic & Acute Hazard Index ≥ 1.0 (project increment)		
Odor	More than one confirmed complaint per year averaged over a three-year period, or three unconfirmed complaints per year averaged over a three-year period. (Screening distance is one mile for HMA plants.)		
Ambient Air Quality Standards [d]			
Screening Criteria	100 lb/day of any criteria pollutant after implementation of mitigation measures.		
Modeling Criteria	If modeling is required because emissions exceed the screening criteria (100 lb/day), then the project would have a significant impact on an AAQS if the project concentration plus background concentration measured at the closest air monitoring station exceeds the most stringent AAQS (see Table 2 above) or Significant Impact Level (SIL, see Table 7 below) in cases where background concentration already exceeds or nearly exceeds the AAQS.		

a Based on SJVAPCD "Air Quality Thresholds of Significance – Criteria Pollutants". (San Joaquin Valley Air Pollution Control District, 2015)

b Based on SJVAPCD "Recommended Thresholds of Significant Impact". (San Joaquin Valley Air Pollution Control District, 2012)

c Based on SJVAPCD "Ambient Air Quality Standards & Valley Attainment Status" (San Joaquin Valley Air Pollution Control District, n.d.)

d Based on SJVAPCD "Guidance for Assessing and Mitigating Air Quality Impacts". (SJVAPCD, 2015)

Table 7 Significant Impact Level (SIL) Threshold Values

Pollutant [a]	Averaging Period	Class I (μg/m³)	Class II (μg/m³)	Class III (μg/m³)
$PM_{2.5}$	Annual	0.03	0.13	0.13
	24-hr	0.27	1.2	1.2
Fugitive $PM_{2.5}$	Annual	--	0.63	--
	24-hr	--	2.5	--
PM_{10}	Annual	0.32	1	--
	24-hr	0.2	5	--
Fugitive PM_{10}	Annual	--	2.08	--
	24-hr	--	10.4	--
Carbon Monoxide (CO)	Annual	--	500	--
	24-hr	--	2000	--
Nitrogen Dioxide (NO_2)	Annual	0.1	1	--
	24-hr	--	7.5	--
Sulfur Dioxide (SO_2)	Annual	0.08	1	--
	24-hr	0.2	5	--
	3-hr	1	25	--
	1-hr	--	7.8	--

a Based on SJVAPCD "APR-1925" (SJVAPCD, 2024). Classes refer to the type of receptor being protected and correspond to the primary and secondary AAQS standards presented in Table 2. Up to date as of 5/6/2024.

-- = No SIL exists.

** A court decision has vacated EPA's $PM_{2.5}$ SILs. Until such time as new SIL values are approved, the District will use the corresponding PM_{10} SILs for both PM_{10} and $PM_{2.5}$ analyses (as the appropriate surrogates for all $PM_{2.5}$ modeling).

3.4 Methodology

This analysis evaluates and reports historical and potential future emissions from on-site sources including aggregates mining, aggregates processing, ready mix concrete production, asphaltic concrete production, as well as off-site mobile source emissions.

3.4.1 Project Design Features and Assumptions

Impacts assessment incorporates the following general assumptions:

- The excavation and associated equipment would operate in compliance with applicable air quality regulations.
    - Diesel engines would continue to comply with applicable State regulations (e.g., ATCM) including establishment of an idling policy, and limiting idle time to less than five minutes (13 CCR §2449).
    - Fugitive dust emissions would continue to be controlled through implementation of controls and compliance measures within Rules 8011, 8021, 8031, 8041, 8051, 8061, and 8071. A formalized dust control plan has been provided, and the emissions reduction achieved as a result of the plan are included in the emissions calculations (See Appendix K, Dust Control Plan.)
- Permitted equipment would comply with Best Available Control Technology (BACT) requirements.
- The Project would not store hazardous substances or acutely hazardous substances in quantities that would trigger chemical accident prevention provisions of the CAA or the implementing regulation (40 CFR Part 68).

Design features of the Project include:

- Emissions characteristics of off-road vehicle engines in any particular year match those in CalEEMod. Specific assumptions with for vehicle engines are in Appendix C.
- Paving of roads on the Quarry Site prior to the year 30 of the project. CalEEMod was run in order to determine the emissions associated with construction of paved roads (Appendix F).

3.4.2 Emissions Calculations Methodologies

Emissions from combustion sources associated with the Project primarily consist of non-road diesel engines in off-road vehicles. Exceptions may include water and service trucks, which are on-road but assumed to have off-road engines for purposes of this analysis. This is a conservative assumption because on-road engines generally emit less pollutants as compared to off-road engines manufactured in the same calendar year (i.e., an on road 2010 model year engine is cleaner than a 2010 off-road engine). Emissions from dust sources associated with Project include windblown dust and other storage pile area emissions (e.g., loading and handling), dozer/quarrying emissions, drop emissions from material transfer, and processing plants. Figures 4, 5, and 6 (Appendix A) contain evidence for assumptions made regarding on-site stockpiles and haul roads. Emissions are calculated in Appendix G using the methods presented below.

Non-Road Engines

Emissions from off-road engines were calculated using the CalEEMod default method and emissions factors. Engine emissions rates decrease over time as the fleet is turned over and controls are implemented to comply with CARB regulations (i.e., In-Use Off-Road ATCM). Appendix A of the CalEEMod User's Guide contains the following equation for quantifying off-road engine emissions.

$$Emissions_{DieselEx} = \sum_{i} (EF_i \times Pop_i \times AvgHP_i \times Load_i \times Activity_i)$$

Where:

EF = Emission factor (g/bhp-hr) as processed from OFFROAD2011 or engine data.
Pop = Population, or the number of pieces of equipment.
AvgHP = Maximum rated average horsepower.
Load = Load factor.
Activity = Hours of operation.
i = Equipment type.

Blasting and Quarrying

Blasting emissions calculations used San Diego Air Pollution Control District (SDAPCD) standard emissions factors based on (ammonia nitrate fuel oil) ANFO used (see Appendix G.3). The factor assumed one pound ANFO per ton quarried. These emission factors were utilized in the absence of specific blasting emission factors from the SJVAPCD. Assuming one pound of explosive was used per ton of material quarried, emissions factors for NOx, CO, and SOx were 0.0085 lb/ton quarried, 0.0335 lb/ton quarried, and 0.001 lb/ton quarried respectively. Quarrying/mining emissions were calculated using the SDAPCD standard mining emissions factor (0.021 lbs fugitive dust per ton quarried). Moreover, SDAPCD Calculation Methods O20-D01, O29-B04 were utilized to account for PM-10 emissions from pre-blast drilling, as well as PM-10 emissions on a per-blast basis (Appendix G).

Storage Pile Emissions

Storage pile emissions were calculated using the SJVPCD SSP1610 emission factor (5.27 lb/acre-day). The factor of 0.2635 lb-PM10/acre/day was determined by applying 90% control to the uncontrolled emissions factor. Baseline stockpile acreage was determined to be 30 acres using Google Earth aerial imagery (Appendix A, Figure 4). Future stockpiles were scaled based on increases in materials handled. For more information see Appendix G.

Aggregates Handling

Each time aggregates are handled and then dropped dust emissions are generated in an amount predicted by the following equation (AP-42 Section 13.2.4). The mean wind speed variable in this report was assumed to be the CalEEMod default appendix value for the Project area.

$$EF = k(0.0032)\frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$$

Where: EF = emission factor (lb/ton).
k = particle size multiplier (dimensionless: 0.35 for PM_{10}).
U = mean wind speed, (miles per hour [mph]).
M = material moisture content (%).

Travel on Roads

Road dust emissions are calculated using AP-42 equations (Appendix E). AP-42 Section 13.2.2 (for unpaved roads) and Section 13.2.1 (for paved roads).

$$(Unpaved)\ EF = \ E_{ext} = \left[k\left(\frac{s}{12}\right)^{0.9} \times \left(\frac{W}{3}\right)^{0.45}\right]$$

Where for Unpaved Roads:
Eext = particulate emission factor (having units matching the units of k),
k = particle size multiplier units of interest (e.g. 1.5 lb/VMT for PM_{10}),
s = surface material silt content (%), and
W = average weight (tons) of the vehicles traveling the road

$$(Paved)\ \ EF\ (\frac{lb}{vmt}) = [k(sL)^{0.91} \times (W)^{01.02}]$$

Where for Paved Roads:
K = particle size multiplier (having units of lb/VMT),
sL = road surface silt loading (g/m^2), and
W = average truck weight.

A control factor of 90% was applied based on compliance with Rules 8061 and 8071 regarding road based fugitive dust emissions. All parameters for road dust calculations are available in the Appendix G (Dataset 19) and a completed Dust Control Plan is available in Appendix K.

See also Appendix J, Regional Increment Analysis, and Section 4.4.4 below, for additional discussion of on-road off-site emission calculation methods.

3.4.3 CEQA Baseline

Baseline consists of physical conditions prior to preparing this Report. Sespe calculated the Baseline emissions by analyzing fuel use data, engine information, and production records provided by Cemex (Appendix C).

Historical data for production, fuel use, and pollutant emissions were chosen to represent maximum activity levels onsite and utilized to determine the CEQA Baseline. Historical production data is summarized in Table 8. Baseline emissions calculations results are demonstrated below in Table 9, Table 10, and Table 11. Permitted and **permit-exempt equipment emissions are separated as they have separate significance thresholds. For detailed calculations of Baseline emissions, see Appendix G.**

Table 8 Historical Production Data

Material Produced	Max Hour	Max Day	Annual
Aggregate (tons)	475	6,000	1,580,413
Recycled Material (tons)	225	1,500	25,000
Asphalt (tons)	0	0	0
Ready Mix (cubic yards)	190	1,267	189,550

Source: Appendix C

Note: Values in table may differ slightly from those in Appendix C due to rounding.

Table 9 Baseline Maximum Hourly Emissions

Source	ROG (lb/hr)	CO (lb/hr)	NO_X (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_X (lb/hr)
Aggregates Plant	-	-	-	1.3	0.4	-
Ready Mix Plant	-	-	-	0.4	0.1	-
Asphalt Plant	-	-	-	-	-	-
Recycle Plant	-	-	-	0.4	0.0	-
Stockpiles	-	-	-	1.3	0.4	-
Total Stationary	**-**	**-**	**-**	**3.4**	**0.9**	**-**
Off-road Engines	1.7	9.5	22.7	0.9	0.8	0.0
On-road Vehicles (onsite)	0.2	0.5	2.3	84.1	17.9	0.0
On-road Vehicles (offsite)	0.2	0.6	1.6	0.3	0.1	0.0
Quarrying	-	-	-	10.0	2.9	-
Blasting	-	-	-	-	-	-
Material Handling	-	-	-	0.1	0.0	-
Total Permit-Exempt*	**2.1**	**10.6**	**26.6**	**95.4**	**21.7**	**0.0**

Source: Appendix G.

Dashes indicate source does not have emissions. "0.0" indicates values that are less than 0.05.
Note: Baseline on-road emission estimates used 2005 production data; however, Year 2018 emission factors from the current version of EMFAC were applied for on-road sources; this produces lower baseline values than if Year 2005 emissions were applied. Numbers in table may differ slightly from calculation results due to rounding. "0.0" refers to a number that is less than 0.05.
*Non-stationary source per SJVAPCD criteria pollutant thresholds.

Table 10 Baseline Maximum Daily Emissions

Source	ROG (lb/day)	CO (lb/day)	NOX (lb/day)	PM10 (total) (lb/day)	PM2.5 (lb/day)	SOX (lb/day)
Aggregates Plant	-	-	-	16.8	4.9	-
Ready Mix Plant	-	-	-	2.5	0.7	-
Asphalt Plant	-	-	-	-	-	-
Recycle Plant	-	-	-	4.3	0.6	-
Stockpiles	-	-	-	31.6	9.2	-
Total Stationary	**-**	**-**	**-**	**55.3**	**15.4**	**-**
Off-road Engines	39.2	216.7	501.0	20.6	19.0	0.5
On-road Vehicles (onsite)	2.1	5.3	22.8	917.7	194.9	0.0
On-road Vehicles (offsite)	2.7	5.6	20.2	3.3	1.0	-
Quarrying	-	-	-	25.5	7.4	-
Blasting	-	-	-	-	-	-
Material Handling	-	-	-	1.2	0.4	-
Total Permit-Exempt*	**44.0**	**227.6**	**544.0**	**968.2**	**222.8**	**0.5**

Source: Appendix G.
Notes: Baseline on-road emission estimates used 2005 production data; however, Year 2018 emission factors from the current version of EMFAC were applied for on-road sources; this produces lower baseline values than if Year 2005 emissions were applied. Dashes indicate source does not have emissions. "0.0" indicates numbers less than 0.05.
***Non-stationary source per SJVAPCD criteria pollutant thresholds.**

Table 11 Baseline Maximum Annual Emissions

Source	ROG (ton/year)	CO (ton/year)	NOX (ton/year)	PM10 (total) (ton/year)	PM2.5 (ton/year)	SOX (ton/year)
Aggregates Plant	-	-	-	2.2	0.6	-
Ready Mix Plant	-	-	-	0.2	0.1	-
Asphalt Plant	-	-	-	-	-	-
Recycle Plant	-	-	-	0.0	0.0	-
Stockpiles	-	-	-	5.8	1.7	-
Total Stationary	**-**	**-**	**-**	**8.2**	**2.4**	**-**
Off-road Engines	4.8	26.6	61.6	2.6	2.4	0.1
On-road Vehicles (onsite)	0.2	0.5	2.0	88.7	18.8	0.0
On-road Vehicles (offsite)	0.7	6.7	2.7	0.4	0.1	0.0
Quarrying	-	-	-	16.6	4.9	-
Blasting	-	-	-	-	-	-
Material Handling	-	-	-	0.1	0.0	-
Employee Trips	0.5	6.2	0.4	0.0	0.0	0.0
Total Permit-Exempt*	**6.2**	**40.0**	**66.6**	**108.4**	**26.2**	**0.1**

Source: Appendix G, Dataset 2a.

Note: Baseline on-road emission estimates used 2005 production data; however, Year 2018 emission factors from the current version of EMFAC were applied for on-road sources; this produces lower baseline values than if Year 2005 emissions were applied. Numbers in table may differ slightly from calculation results due to rounding, and have been converted into tons from lbs. "0.0" indicates values that are less than 0.05.

*Non-stationary source per SJVAPCD criteria pollutant thresholds. Dashes indicate source does not have emissions.

3.4.4 Construction Phase Emissions

Construction phase emissions are shown in Table 12**.** Construction consists of building the aggregate processing plant and preparing the site.

Table 12 Construction Phase Emissions

Units	ROG	CO	NO_X	PM_{10}	$PM_{2.5}$	SOx
Pounds per Day	4.8	5.04	4.87	1.23	0.64	0.01
Tons per Year	0.0478	0.92	0.89	0.22	0.12	0.00

Source: Appendix F.

Note: Numbers in table may differ slightly from calculation results due to rounding. "0.00" indicates values less than 0.005. NaN indicates that CalEEMod had no value for that pollutant.

3.4.5 Operation Phase Emissions

Maximum operation phase activity is outlined in Table 13. Emissions are quantified in Table 14, Table 15**,** and Table 16, and in Appendix G using the methodology and assumptions discussed above. Significance of the operation phase emissions is determined in Section 3.5.

Table 13 Operation Phase Maximum Activity

Material Produced	Max Hour	Max Day	Annual
Aggregate (tons)	1,100	14,000	3,000,000
Asphalt (tons)	500	3,333	500,000
Ready Mix (cubic yards)	190	1,266	300,000
Recycled Material (tons)	225	1,500	200,000

Table 14 Operation Phase Maximum Hour Emissions

Source	ROG (lb/hr)	CO (lb/hr)	NOX (lb/hr)	PM10 (Fugitive) (lb/hr)	PM10 (diesel) (lb/hr)	PM10 (total) (lb/hr)	PM2.5 (lb/hr)	SOX (lb/hr)
Asphalt Plant Dryer	4.1	65.0	4.4	1.2	-	1.2	0.4	1.7
Asphalt Plant Silos	8.1	1.3	-	0.0	-	0.0	0.0	-
Asphalt Plant Oil Heater	0.0	0.2	0.0	0.0	-	0.0	0.0	0.0
Asphalt Plant Fugitive Dust	-	-	-	0.5	-	0.5	0.1	-
Ready Mix Plant	-	-	-	0.4	-	0.4	0.1	-
Recycle Plant	-	-	-	0.4	-	0.4	0.0	-
Recycle Engine	0.2	1.2	2.6	-	0.1	0.1	0.1	0.0
Aggregates Processing	-	-	-	5.9	-	5.9	1.7	-
Aggregates Storage	-	-	-	2.5	-	2.5	0.7	-

Source	ROG (lb/hr)	CO (lb/hr)	NOX (lb/hr)	PM10 (Fugitive) (lb/hr)	PM10 (diesel) (lb/hr)	PM10 (total) (lb/hr)	PM2.5 (lb/hr)	SOX (lb/hr)
Total Stationary	**12.4**	**67.7**	**7.0**	**10.8**	**0.1**	**10.9**	**3.2**	**1.7**
Asphalt Plant Onsite Haul	0.1	1.2	0.4	14.2	0.0	14.2	3.0	0.0
Ready Mix Onsite Haul	0.0	0.0	0.1	9.7	0.0	9.7	2.1	0.0
Recycle Plant Onsite Haul	0.1	0.8	4.2	14.2	0.2	14.5	3.0	0.0
Quarrying	-	-	-	27.7	-	27.7	8.1	-
Offroad Engines	1.1	7.0	13.2	-	0.5	0.5	0.5	0.0
Blasting	-	36.9	9.4	-	-	-	-	1.1
Aggregate Drops	-	-	-	0.3	-	0.3	0.1	-
Aggregate Plant Onsite Haul	0.0	0.1	0.4	53.2	0.0	53.2	11.3	0.0
Visitors, Diesel Delivery	0.0	0.0	0.0	1.1	0.0	1.1	0.2	0.0
Vehicles Offsite	0.3	6.2	0.6	0.1	0.0	0.1	0.0	0.0
Total Permit-Exempt*	**1.6**	**52.1**	**28.2**	**120.6**	**0.8**	**121.4**	**28.3**	**1.1**

Source: Appendix H. Dashes indicate source does not have emissions.

Note: Project on-road emission estimates used Year 2026 emission factors from the current version of EMFAC; this update was applied in response to comments on the Draft EIR and produces more up to date on-road mobile source emissions for the proposed Project operations. Numbers in table may differ slightly from calculation results due to rounding. "0.0" indicates values less than 0.05. *Non-stationary source per SJVAPCD criteria pollutant thresholds.

Table 15 Operation Phase Maximum Day Emissions

Source	ROG (lb/day)	CO (lb/day)	NOX (lb/day)	PM10 (Fugitive) (lb/day)	PM10 (diesel) (lb/day)	PM10 (total) (lb/day)	PM2.5 (lb/day)	SOX (lb/day)
Asphalt Plant Dryer	27.3	433.3	29.1	8.3	-	8.3	2.4	11.3
Asphalt Plant Silos	53.7	8.4	-	0.2	-	0.2	0.2	-
Asphalt Plant Oil Heaters	0.3	3.8	1.2	0.3	-	0.3	0.3	0.0
Asphalt Plant Dust	-	-	-	3.1	-	3.1	0.9	-
Ready Mix Plant	-	-	-	2.5	-	2.5	0.7	-
Recycle Plant	-	-	-	4.3	-	4.3	0.6	-
Recycle Engine	3.2	15.1	34.8	-	1.0	1.0	1.0	0.1
Aggregates Processing	-	-	-	59.5	-	59.5	17.4	-
Aggregate Storage	-	-	-	60.0	-	60.0	17.5	-
Total Stationary	**84.5**	**460.6**	**65.1**	**138.2**	**1.0**	**139.3**	**41.1**	**11.4**
Asphalt Plant Onsite Haul	9.3	115.4	37.2	94.5	1.0	95.5	20.1	0.2
Ready Mix Onsite Haul	0.0	0.1	0.6	64.9	0.0	64.9	13.8	0.0
Recycle Plant Onsite Haul	0.0	0.1	0.7	104.3	0.1	104.4	22.1	0.0
Quarrying	-	-	-	88.9	-	88.9	26.1	-
Offroad Engines	42.0	263.5	489.9	-	20.0	20.0	18.3	0.8
Blasting	-	469.0	119.0	-	-	-	-	14.0

Source	ROG (lb/day)	CO (lb/day)	NOX (lb/day)	PM10 (Fugitive) (lb/day)	PM10 (diesel) (lb/day)	PM10 (total) (lb/day)	PM2.5 (lb/day)	SOX (lb/day)
Aggregate Drops	-	-	-	3.2	-	3.2	0.9	-
Aggregate Plant Onsite Haul	0.1	0.6	4.0	542.9	0.3	543.2	115.2	0.0
Visitors, Diesel Delivery	0.0	0.0	0.1	7.4	0.0	7.4	1.6	0.0
Vehicles Offsite	1.4	24.9	5.9	1.3	0.2	1.5	0.4	0.0
Total Permit-Exempt*	**52.7**	**873.7**	**657.4**	**907.5**	**21.6**	**929**	**218.5**	**15.1**

Source: Appendix H

Note: Project on-road emission estimates used Year 2026 emission factors from the current version of EMFAC; this update was applied in response to comments on the Draft EIR and produces more up to date on-road mobile source emissions for the proposed Project operations.

*Non-stationary source per SJVAPCD criteria pollutant thresholds. Dashes indicate sources do not have emissions. "0.0" indicates values less than 0.05.

Table 16 Operation Phase Maximum Year Emissions

Source	ROG (ton/year)	CO (ton/year)	NOX (ton/year)	PM10 (Fugitive) (ton/year)	PM10 (diesel) (ton/year)	PM10 (total) (ton/year)	PM2.5 (ton/year)	SOX (ton/year)
Asphalt Plant Dryer	2.1	32.5	2.2	0.6	-	0.6	0.1	0.9
Asphalt Plant Silos	4.0	0.6	-	0.0	-	0.0	0.0	-
Asphalt Plant Oil Heater	0.0	0.7	0.2	0.1	-	0.1	0.1	0.0
Asphalt Plant Dust	-	-	-	0.2	-	0.2	0.1	-
Ready Mix Plant	-	-	-	0.3	-	0.3	0.1	-
Recycle Plant	-	-	-	0.2	-	0.2	0.0	-
Recycle Engine	0.1	0.6	1.1	-	0.0	0.0	0.0	0.0
Aggregates Processing	-	-	-	5.6	-	5.6	1.6	-

Source	ROG (ton/year)	CO (ton/year)	NOX (ton/year)	PM10 (Fugitive) (ton/year)	PM10 (diesel) (ton/year)	PM10 (total) (ton/year)	PM2.5 (ton/year)	SOX (ton/year)
Aggregate Storage	-	-	-	11.0	-	11.0	3.2	-
Total Stationary	**6.2**	**34.4**	**3.5**	**17.9**	**0.0**	**18.0**	**5.3**	**0.9**
Asphalt Plant Onsite Haul	0.0	0.1	0.1	7.0	0.0	7.0	1.5	0.0
Ready Mix Onsite Haul	0.0	0.0	0.1	7.7	0.0	7.7	1.6	0.0
Recycle Plant Onsite Haul	0.0	0.0	0.0	7.0	0.0	7.0	1.5	0.0
Quarrying	-	-	-	6.9	-	6.9	2.0	-
Offroad Engines	5.0	31.6	58.2	-	2.3	2.3	2.2	0.1
Blasting	-	50.3	12.8	-	-	-	-	1.5
Aggregate Drops	-	-	-	0.3	-	0.3	0.1	-
Aggregate Plant Onsite Haul	0.0	0.1	0.4	52.2	0.0	52.2	11.1	0.0
Visitors, Diesel Delivery	0.0	0.0	0.0	0.5	0.0	0.5	0.1	0.0
Vehicles Offsite	0.5	5.7	1.0	0.2	0.0	0.2	0.1	0.0
Total Permit-Exempt*	**5.5**	**87.8**	**72.5**	**81.7**	**2.4**	**84.1**	**20.1**	**1.6**

Source: Appendix H. Dashes indicate source does not have emissions.

Note: Project on-road emission estimates used Year 2026 emission factors from the current version of EMFAC; this update was applied in response to comments on the Draft EIR and produces more up to date on-road mobile source emissions for the proposed Project operations. Numbers in table may differ slightly from calculation results due to rounding. "0.0" indicates values that are less than 0.05.

*Non-stationary source per SJVAPCD criteria pollutant thresholds.

3.4.6 Health Risk Assessment

HRA was performed using current best practices including methods from the HRA Guidelines (OEHHA, 2015). The four steps involved in the risk assessment process are: 1) hazard identification, 2) exposure assessment, 3) dose-response assessment, and 4) risk characterization. These four steps were used to assess health risk for the Project and each is discussed in the subchapters below.

Hazard Identification and Quantification

For air toxics sources, hazard identification involves the pollutant(s) of concern emitted by a facility, and the types of adverse health effects associated with exposure to the chemical(s), including whether a pollutant is a potential human carcinogen or is associated with other types of adverse health effects. Appendix A of the HRA Guidelines includes a list of TACs that are used for HRA in California.

Diesel particulate matter ("DPM") is the primary TAC emitted by off-road engines used in mining projects. DPM has an assigned cancer potency factor (CPF) and a non-cancer reference exposure level (REL) that are used to evaluate the health risk.

Soil Sampling

Fugitive dust is generally inert but does contain trace metals and RCS. In absence of site-specific soil data, local air district or ARB standard TAC speciation's are used to determine the health risk associated with fugitive dust emissions. These speciation's are intentionally conservative, and replacing them with data obtained via on-site sampling allows for a more accurate HRA. Table 17 shows TAC concentrations in soil assumed in this analysis. Concentrations are based on soil sample results available in Appendix C. It was conservatively assumed that TACs are present in soil onsite at the highest concentration reported by the laboratory throughout the samples taken. TACs that were not detected during sampling are assumed to be present at the Minimum Detection Level (MDL).

Table 17 Fugitive TAC Speciation Assumptions

Emission Source	Constituent (TAC)	SJVAPCD Standard Value (ppm)	Empirically Determined Value (ppm)
Road Dust	Arsenic	21.0	1.0*
Road Dust	Nickel	19.0	20.7
Road Dust	Hexavalent Chromium	0.0	0.25*
Aggregate Processing	Arsenic	22.0	1.0*
Aggregate Processing	Nickel	28.0	20.7
Aggregate Processing	Hexavalent Chromium	1.4	0.25*
Material Storage	Arsenic	20.0	1.0*
Material Storage	Nickel	20.0	20.7
Material Storage	Hexavalent Chromium	2.5	0.25*

Source: Appendix C Laboratory Sampling Data

*TAC was not detected, therefore MDL is assumed.

SJVAPCD standard speciation profiles and data determined via sampling were combined with calculated PM_{10} emissions to determine the mass of each TAC, and dispersion coefficients to quantitatively predict the ground level concentration (GLC) of each TAC, to which individuals may be exposed (see exposure assessment subsection below). The concentrations were then combined with exposure parameters to quantify the dose received by each receptor and for each exposure pathway. In the case of non-cancer risk, the exposures were then summed on a target organ by target organ basis using HARP2 to determine the maximum hazard index (HI) among the target organs in the body. The maximum target organ HI was then compared to the non-cancer significance criteria (i.e., 1.0 HI) as discussed in the following subsections.

The HRA considered whether health risk from asbestos should be quantified. It was determined based on review of available maps (California Department of Conservation, Division of Mines and Geology, 2000) and language in the Asbestos ATCM's (17CCR §93105 and §93106) that asbestos is unlikely to be a concern and so was not included as part of the HRA.

Exposure Assessment

The purpose of exposure assessment is to estimate the extent of public exposure to emitted substances. For the Hot Spots program, in practice this means estimating exposures for those emitted substances for which potential cancer risk or noncancer health hazards for acute, repeated 8-hour, and chronic exposures are required to be evaluated. This involves emission quantification, modeling of environmental transport, evaluation of environmental fate, identification of exposure routes, identification of exposed populations, and estimation of short-term (e.g., 1-hour maximum), 8-hour average, and long-term (annual) exposure levels.

Hot Spots Analysis and Reporting Program (HARP2) software developed by CARB can be used to model ground level concentrations at specific off-site locations. HARP2 incorporates the US EPA-approved dispersion model, American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD). AERMOD is a gaussian steady-state plume model based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain. CARB recommends AERMOD for HRA performed under Hot Spots risk assessments (OEHHA, 2015).

In this HRA, the air dispersion modeling was performed using AERMOD View by Lakes Environmental (Version 13.0.0 running AERMOD executable Version 24142). The HARP2 ADMRT version 22118 was used to determine health risk impacts based on ground level concentrations of TACs. Air dispersion modeling consisted of four steps:

:

1. Annual average and maximum one-hour GLCs are estimated. Air dispersion modeling results are expressed as concentration for each source receptor combination per amount of substance emitted per time in units of micrograms per cubic meter per gram per second, or $(\mu g/m^3)/(g/s)$. This value, referred to as Chi over Q and sometimes written as (X/Q) is referred to as the dilution factor.

2. When multiple substances are evaluated, the X/Q is normally utilized since it is based on an emission rate of one gram per second. The X/Q at the receptor point of interest is multiplied by the substance-specific emission rate (in g/s) to yield the substance-specific GLC in units of µg/m^3. The following equations illustrate this point.

$$GLC = \left(\frac{X}{Q}\right) \times Q_{Substance}$$

$$\frac{X}{Q} = (Chi\ over\ Q)\ in\ \left(\frac{{}^{\mu g}/_{m^3}}{{}^{g}/_{s}}\right), from\ model\ results\ with\ unit\ emission\ rate$$

$$Q_{Substance} = substance\ emission\ rate\ \left({}^{g}/_{s}\right)$$

3. The applicable exposure pathways (e.g., inhalation, soil contact, fish consumption) are identified for the emitted substances, and the receptor locations are identified. This determines which exposure algorithms are ultimately used to estimate dose. After the exposure pathways are identified, the fate and transport algorithms are used to estimate concentrations in the applicable exposure media (e.g., soil or water) and the exposure algorithms are used to determine the substance-specific dose.

4. The dose is used with cancer and noncancer health values to calculate the potential health impacts for the receptor. An example calculation using the high-end point-estimates for the inhalation (breathing) exposure pathway can be found in Appendix I of the HRA Guidelines (OEHHA, 2015).

Health risk assessments were conducted using the latest version of HARP2 for both residential and worker receptors. Variable emissions were modeled in AERMOD to capture differences in operating conditions and their influence on risk outcomes. Two distinct AERMOD projects were developed:

Chronic and Cancer Risk Modeling: Applied hourly variable emissions with a scaling factor of 2.0 during the operational hours. This approach provides a conservative evaluation of long-term exposure risks under typical operating conditions.

Acute Risk Modeling: Applied a uniform hourly scaling factor of 1.0 during operational hours to represent short-term exposure scenarios, consistent with OEHHA acute risk guidance.

AERMOD was used as described above to calculate a X/Q for each source-receptor combination by setting the emission rate for each source in the model to one gram per second (1 g/s). Other parameters used in AERMOD describe overall control of the model domain and functionality (e.g., coordinate system, terrain, non-default options, etc.), receptors (e.g., location, height), sources (e.g., size, location, exhaust velocity, temperature, operating schedule), meteorology (hourly wind speed and direction, surface and upper air files provided by SJVAPCD), and output file options. The Control Pathway of AERMOD was set to provide output in concentration units of µg/m^3; and both wet and dry plume depletion were disabled. Terrain Options within AERMOD were set to "Flat & Elevated" and digital terrain files were downloaded through AERMOD from the National Elevation

Database in geotiff format "NED GEOTIFF". Averaging options were set to 1-hour and the period of the meteorological data file (i.e., five years) as provided by SJVAPCD. The ADJ_U* setting was used pursuant to current EPA Guidelines in Appendix W of 40 CFR Part 51 (82 FR 5182, 1/17/2017), and as included in the AQMD meteorological file. Figure 3 (Appendix A) contains a wind-rose representation of the meteorological data. The rural dispersion coefficient was used. Algorithms to include deposition, exponential decay and low wind (beta) were not used.

Receptors were modeled at ground level (i.e. no flagpole height). 26 discrete receptors and 6857 fence-line grid receptors were modeled. Residential and worker receptors can be found in Table 18**.** Potentially sensitive, non-residential receptors that were considered are identified in Figure 7. The modeled receptors, sources that existed in the Baseline, and sources proposed by the Project are illustrated in Figures 8, 9, and 10 (Appendix A). Source parameters are summarized in Table 19. Project sources were assigned positive emissions values and Baseline sources were assigned negative values (i.e., to represent sink) so that the HRA results represent the change in health risk with the Project. In order to obtain the most conservative possible health risk assessment, the model assumes mining takes place as close as possible to residential receptors, meaning that only two (2) of the nine (9) mining model volume objects were utilized. Concentration of mining emissions into a small area near receptors allows the model to demonstrate potential risk in the worst-case scenario. Chronic and cancer risks were evaluated at locations where long-term occupancy is reasonably expected (≥1 year), while maximum acute risk was assessed at the Project fence line, with risk attenuation documented as distance increases.

The model was segmented into 2 (two) intervals based on the Project specifications, consolidating on the Quarry Site after 30 years. The segments of the HRA model were chosen to coincide with onsite activity changes and represent years 1 – 70 for Phase 1 (years 1-30) and parts of Phase 2 (years 31-70); and years 31-100 for Phase 2 when operations occur only at the quarry site. Each HRA phase was evaluated separately to reflect changes in onsite activities and emission locations. To capture the full Project duration, the risks from each phase were combined by summing the risks from both phases, resulting in a cumulative risk estimate that reflects continuous exposure over a 70-year operational period (Phase 2). Although the Project represents 100 years of operation, the preparation of two 70-year HRA models meets SJVAPCD guidance to use a 70-year analysis.

Output of the dispersion model in the form of plot files, one for each combination of source and averaging period, containing X/Q values were combined with pollutant emissions rate by the AERMOD View multichemical batcher. Exposure parameters discussed below were assigned to HRACalc.exe input file (HRAInput.hra) that was used with the GLC plot files to predict the cancer and non-cancer risk at each receptor. Modeling files are provided in electronic format, **Appendix I**.

Table 18 Representative Discrete Receptors

ID Number	UTM Coordinates (meters E, meters N)	Description
1	255689.96, 4093487.83	Residence
2	256073.51, 4094416.89	Residence
3	256874.72, 4094260.62	Residence
4	257235.55, 4094021.97	Residence
5	257490.51, 4093429.13	Residence
6	257403.27, 4093258.13	Residence
7	257349.18, 4093104.59	Residence
8	254725.51, 4093870.93	Residence
9	254945.37, 4093801.13	Residence
10	255187.92, 4093694.69	Residence
11	255139.06, 4093483.55	Residence
12	255231.54, 4093326.5	Residence
13	255360.67, 4093200.87	Residence
14	255217.33, 4093080.85	Residence
15	255226.16, 4092933.34	Residence
16	255233.13, 4092694.78	Residence
17	255251.35, 4092534.02	Residence
18	255211.69, 4092374.34	Residence
19	256529.1, 4092278.58	Residence
20	256802.27, 4092213.79	Worker
21	257050, 4092412.58	Residence
22	256651.97, 4089957.62	Residence
23	256719.07, 4090084.22	Residence
24	255848.31, 4089996.82	Residence
25	255348.95, 4090263.9	Residence
26	257314.69, 4090596.03	Residence

Note: Project is in UTM Zone 11N.

Table 19 Model Source Object Parameters

AERMOD ID	Project Segment	Emissions Description	Type
SSNK	Baseline	Plant Site Baseline Sink	Volume Source
NSNK	Baseline	Quarry Site Baseline Sink	Volume Source
SRD1	Future	Plant Site Road Emissions	Volume Line Source
SPILE	Future	Plant Site Storage Emissions	Area Source
SPLNT	Future	Plant Site Plant Emissions	Volume Source
NRD1	Future	Quarry Site Asphalt Plant Road Emissions	Volume Line Source
NRD2	Future	Quarry Site Ready Mix Road Emissions	Volume Line Source
NRD3	Future	Quarry Site Full Loop Road Emissions	Volume Line Source
NASTK	Future	Quarry Site Asphalt Plant Stack Emissions	Point Source
NAPLNT	Future	Quarry Site Asphalt Plant Emissions	Volume Source
NMPLNT	Future	Quarry Site Ready Mix Plant Emissions	Volume Source
NPLNT	Future	Quarry Site Aggregate Plant Emissions	Volume Source
NPILE	Future	Quarry Site Storage Emissions	Area Source
NMINE1	Future	Quarry Site Mining Emissions	Volume Source
NMINE2	Future	Quarry Site Mining Emissions	Volume Source
NMINE3	Future	Quarry Site Mining Emissions	Volume Source
NMINE4	Future	Quarry Site Mining Emissions	Volume Source
NMINE5	Future	Quarry Site Mining Emissions	Volume Source
NMINE6	Future	Quarry Site Mining Emissions	Volume Source
NMINE7	Future	Quarry Site Mining Emissions	Volume Source
NMINE8	Future	Quarry Site Mining Emissions	Volume Source
NMINE9	Future	Quarry Site Mining Emissions	Volume Source
SMINE	Future	Plant Site Mining Emissions	Volume Source
SRMPT	Future	Plant Site Ready Mix Plant Emissions	Volume Source
SAPLT	Future	Plant Site Asphalt Plant Emissions	Volume Source
SASTK	Future	Plant Site Asphalt Stack Emissions	Point Source

Note: The model divided mining emissions equally between NMINE8 and NMINE9 volume sources, and other mine sources were assigned zero emissions. The result of this approach is a more concentrated plume in an area that is most impactful to receptors, which is conservative.

After emissions exit the source, the substances are dispersed in the air. In addition to being inhaled, particulates deposit on vegetation, on soil, and in water at a rate that is dependent on the particle size. A controlled deposition rate of 0.02 m/s was used for the Project HRA and the Mitigated Project HRA. Other model pathways used to estimate concentrations in environmental media include air, soil, water, vegetation, and animal products.

The concentration of the substance in soil (Cs) is a function of the deposition, accumulation period, chemical specific soil half-life, mixing depth, and soil bulk density. Concentrations in vegetation, animal products, and mother's milk are predicated on the concentrations estimate to be in the air, water, and soil. The Project HRA includes air, soil ingestion, home grown produce, and mother's milk as pathways of exposure. Detailed discussion of the methodologies used to determine the concentrations in various media to which receptors may be exposed is located in Subchapter 5.3 of the HRA Guidelines.

Once the concentrations of substances are estimated in air, soil, water, plants, and animal products, they are used to evaluate estimated exposure to people. Exposure is evaluated by calculating the daily dose in milligrams per kilogram of body weight per day (mg/kg/d). The HRA Guidelines describe the algorithms used by HARP2 to calculate this dose for exposure through inhalation, dermal absorption, and ingestion pathways. All chemicals are assessed for exposure through inhalation. Semi and non-volatile multi-pathway substances (e.g., earth metals in fugitive dust), the soil ingestion pathway, and the dermal soil exposure pathway are assessed. The mother's milk pathway is used depending on the multi-pathway substance released. The Project HRA assessed each of these four pathways.

Inhalation Dose

The dose through the inhalation route is estimated for cancer risk assessment and noncancer hazard assessment. Both residential and off-site worker exposures are considered. Since residential exposure includes near-continuous long-term exposure at a residence and workers are exposed only during working hours (i.e., 8 hours/day), treating all receptors as residential results in a conservative assessment of health risk.

Exposure through inhalation is a function of the breathing rate, the exposure frequency, and the concentration of a substance in the air. For residential exposure, the breathing rates are determined for specific age groups, so inhalation dose (Dose-air) is typically calculated for each of these age groups: 3rd trimester, 0<2, 2<9, 9<16, 16<30 and 30<70 years though short projects may not affect all age groups. OEHHA used the mother's breathing rates to estimate dose for the 3rd trimester fetus assuming the dose to the fetus during the 3rd trimester is the same as the mother's dose. These age-specific groupings are needed in order to properly use the age sensitivity factors for cancer risk assessment. Tier 1 evaluations and the Project HRA use the high-end point estimate (i.e., the 95th percentiles) breathing rates for the inhalation pathway in order to avoid underestimating cancer risk to the public, including children. The following equation is used to determine dose for the inhalation pathway.

$$Dose_{Air} = C_{Air} \times \left\{\frac{BR}{BW}\right\} \times A \times EF \times 10^{-6}$$

Where:

$Dose_{Air}$ = Dose through inhalation (mg/kg/d)
C_{Air} = Concentration in air (µg/m^3)
{BR/BW} = Daily breathing rate normalized to body weight (L/kg body weight-day)
A = Inhalation absorption factor (unitless)
EF = Exposure frequency (unitless), days/365 days
10^{-6} = Micrograms to milligrams conversion, liters to cubic meters conversion

The breathing rate normalized to body weight term, {BR/BW}, has several values used to assess cancer risk for each age bin designated in the HRA Guidelines (i.e., third trimester, 0 to 2, 2 to 16 and 16 to 70 years). These values and the parametric model distributions from which they are derived are provided in the HRA Guidelines. The inhalation absorption factor, A, is recommended to be assigned a value of one (i.e., 100% of dose is absorbed) but may also be assigned the value determined by the toxicological study upon which the CPF for the substance is based. Exposure frequency is recommended to be 350 days for residential exposures. Table 20 presents the mean and high-end point estimates for intake rates that were assumed in the Project HRA.

Table 20 Point Estimates of Residential Daily Breathing Rates by Age Group

Estimate	3rd Trimester[1] (L/kg BW-day)[2]	0<2 Years (L/kg BW-day)	2<16 Years (L/kg BW-day)	16<70 Years (L/kg BW-day)
Mean (65%ile)[3]	225	658	452	210
High-End (95%ile)	361	1090	745	335

Source: (OEHHA, 2015, pp. 5-25).

1 3rd trimester breathing rates based on breathing rate of pregnant women using the assumption that the dose to the fetus during the 3rd trimester is the same as that to the mother.

2 Values are in units of liters of air per kilogram of body weight per day.

3 Mean values were not used in the HRA and are provided for informational purposes only.

Non-cancer health risks were unaffected by age and determined in HARP2 by dividing the GLC of each pollutant at each receptor by the corresponding reference exposure level (REL, units of $\mu g/m^3$) resulting in a hazard index (HI). The HIs for pollutants affecting each target organ were then summed to determine the total HI for each target organ. The target organ with the greatest HI is reported as the non-cancer health risk at each receptor.

Annual residential dose was calculated by HARP2 using the GLC (mg/m^3), the intake rate (L/kg-day), 350 days/yr exposure frequency, and an assumption that the entire mass of pollutants inhaled is absorbed into the body of the individual exposed (i.e., no pollutants are exhaled). A fraction of time at home (FAH) was not applied for individuals of any age, and therefore the conservative assumption of 100% of time at home was used for risk determination.

Inhalation dose of each pollutant at each receptor was then multiplied in HARP2 by the inhalation cancer slope factor for the pollutant to estimate annual cancer risk in units of excess cancer cases per million individuals exposed. The total cancer risk from inhalation was then calculated by summing the annual risk from each pollutant and year of exposure. Residential cancer risk assumed exposure duration of 70 years total and exposure was assessed using OEHHA Derived Method.

The Derived Method of dose calculation in HARP2 was used. It consists of the high-end point estimate (i.e., 95th percentile) for the two driving (dominant) exposure pathways (e.g., soil and breast milk) and the mean (65th percentile) point estimate for the remaining pathways. In non-cancer chronic assessments, the inhalation pathway is always considered a driving pathway, the next two risk driving pathways use the 95th percentile, and the remaining pathways use the mean intake rate.

Ingestion Pathway

The average concentration of pollutants in soil is a function of the deposition, accumulation period, chemical specific half-life, mixing depth, and soil bulk density. As discussed above, the controlled deposition rate (0.02 m/s) was applied. Equations and parameters used to estimate the concentration of pollutant in the soil from the GLC can be found in the HRA Guidelines (p. 5-6 to 5-8).

The dose from residential soil ingestion was calculated for each age group. The dose is calculated by HARP2 based on the concentration in soil, pollutant specific gastrointestinal relative absorption fraction (GRAF, unitless), soil ingestion rate (mg/kg-day), and exposure frequency using the equation presented in the HRA Guidelines (p. 5-43). For simplicity, GRAF was assigned a value of one which represents the entire mass of pollutant being absorbed. Soil ingestion rates estimates are shown in Table 21**.**

Table 21 Soil Ingestion Rate Point Estimates by Age Group

Estimate	3rd Trimester[1] (mg/kg BW-yr)[2]	0<2 Years (mg/kg BW-yr)	2<16 Years (mg/kg BW-yr)	16<70 Years (mg/kg BW-yr)
Mean (65%ile)[3]	0.7	20	3	0.7
High-End (95%ile)	3	40	10	3

Source: (OEHHA, 2015, pp. 5-44).

1 3rd trimester is assumed to be the mother's soil ingestion rate.

2 Values are in units of milligrams of pollutant ingested per kilogram of body weight per year.

3 Geometric mean (GM) values were not used in the HRA and are provided for informational purposes only.

Dermal Pathway

Exposure through dermal absorption (dose-dermal) is a function of the soil or dust loading of the exposed skin surface, the amount of skin surface area exposed, and the concentration and availability of the pollutant. The annual dermal load (ADL) is a composite of the body surface area per kg body weight, exposure frequency, and soil adherence to the skin. High-end point estimates of ADL for individuals located in a mixed climate were used.

Table 22 Annual Dermal Loading Point Estimates by Age Group

Estimate	3rd Trimester[1] (mg/kg BW-yr)[2]	0<2 Years (mg/kg BW-yr)	2<16 Years (mg/kg BW-yr)	16<70 Years (mg/kg BW-yr)
Mean (65%ile)[3]	1,100	2,200	5,700	1,100
High-End (95%ile)	2,400	2,900	8,100	2,400

Source: (OEHHA, 2015, pp. 5-37).

1 3rd trimester based on ADL of mother normalized to body weight assuming exposure to the mother and feus are the same.

2 Values are in units of milligrams of pollutant on skin per kilogram of body weight per year.

3 Mean values were not used in the HRA and are provided for informational purposes only.

High-end ADL was combined with the concentration of pollutant in soil, the fraction absorbed across skin (pollutant-specific factor), the exposure duration (i.e., 70-year residency) using equations presented in the HRA Guidelines (pg. 5-41) to estimate the dermal dose for each residential receptor. Worker receptors used the adult ADL and a 40-year exposure duration for the health risk calculation.

Mother's Milk Pathway

Estimates of the concentration of pollutants in mother's milk require the use of the air, water, and soil environmental fate evaluations. Infants would be exposed to the pollutants in concentrations equal to the concentrations at which the mother is exposed from birth up to 25 years of age when the infant is assumed to be born. The exposed infant is assumed to be fully breastfed for the first year of life. The summed average dose daily dose (mg/kg-day) from each pathway is calculated for the nursing mother using equations in the HRA Guidelines (p. 5-59). Breast milk intake rates of 101 and 139 g/kg-day are used by HARP2.

Dose-Response Assessment

Dose-response assessment is the process of characterizing the relationship between exposure to an agent and incidence of an adverse health effect in exposed populations. The health database applied in this modeling containing risk factors was developed by OEHHA (Version 25268, September 2025).

In quantitative carcinogenic risk assessment, the dose-response relationship is expressed in terms of a potency slope that is used to calculate the probability or risk of cancer associated with intensity of the exposure. Cancer potency factors (CPF) are expressed as the 95^{th} percent upper confidence limit of the slope of the dose response curve estimated assuming continuous lifetime exposure to a substance. Typically, potency factors are expressed as units of inverse dose (e.g., $(mg/kg\ BW/day)^{-1}$) and as a Unit Risk Factor (URF) for a 70-year lifetime exposure in units of inverse concentration (e.g., $(\mu g/m3)^{-1}$). It is assumed in cancer risk assessments that risk is directly proportional to dose and that there is no threshold for carcinogenesis. (OEHHA, 2015).

For noncarcinogenic effects, dose-response data developed from animal or human studies are used to develop acute, repeated 8-hour, and continuous exposure Reference Exposure Levels (RELs). The non-cancer RELs are defined as the concentration at which no adverse noncancer health effects are anticipated even in sensitive members of the general population, with infrequent one-hour exposures, repeated 8-hour exposures over a significant fraction of a lifetime, or continuous exposure over a significant fraction of a lifetime, respectively. The most sensitive health effect is chosen to develop the REL when the chemical affects multiple organ systems. Unlike cancer health effects, noncancer health effects are generally assumed to have thresholds for adverse effects. In other words, injury from a pollutant would not occur until exposure to that pollutant has reached or exceeded a certain concentration (i.e., threshold) and/or dose. The acute, 8-hour, and chronic RELs are air concentrations intended to be less than the threshold for health effects in the general population. (OEHHA, 2015).

The actual threshold for health effects in the general population is generally not known with precision. Uncertainty factors are applied to the Lowest Observed Adverse Effects Level (LOAEL) or No Observed Adverse Effects Level (NOAEL) or Benchmark Concentration values from animal or human studies ensure that the RELs

are set lower than the threshold for health effects in nearly all individuals. Table H.1 in Appendix H summarizes the health values (CPFs, RELs) that were used in the dose-response assessment.

Risk Characterization

Risk characterization is the final step of the HRA. In this step, information developed through the exposure assessment is combined with information from the dose-response assessment to characterize risks at each receptor. OEHHA conducts the dose-response assessment during the development of CPFs and RELs. These are used in conjunction with the exposure estimates to assess cancer risk and hazard from noncancer toxicity of emitted chemicals. Under the Hot Spots program, risk characterizations present both individual and population-wide health risks.

A general summary of the risk characterization components includes the following:

- The locations of the point of maximum impact (PMI), the maximum exposed individual receptor (MEIR), and the maximum exposed individual worker (MEIW) are identified. The PMI, MEIW, and MEIR for cancer risk and for noncancer hazard indices may not occur at the same location; and should be identified.
- The location of any specified sensitive receptors (e.g., schools, hospitals, daycare, or eldercare facilities) are identified.
- Estimates of population-wide cancer burden are assessed.

Cancer Risk

Cancer risk is calculated by multiplying the daily inhalation or oral dose, by a CPF, the age sensitivity factor (ASF), the frequency of time spent at home (FAH) (for residents only), and the exposure duration divided by averaging time, to yield the excess cancer risk. As described below, excess cancer risk is calculated separately for each age grouping and summed to yield cancer risk at the receptor location. A brief description of the age sensitivity factors, exposure duration, and frequency of time spent at home are included below. These factors are discussed in various technical support documents to the HRA Guidelines.

OEHHA has determined that young animals are more sensitive than adult animals to exposure to many carcinogens. Therefore, OEHHA developed age sensitivity factors (ASFs) to take into account the increased sensitivity to carcinogens during early-in-life exposure. In the absence of chemical-specific data, OEHHA recommends a default ASF of 10 for the third trimester to age 2 years, and an ASF of 3 for ages 2 through 15 years to account for potential increased sensitivity to carcinogens during childhood. These values manifest in the intake parameters presented below.

FAH during the day can be used to adjust exposure duration and cancer risk from a specific facility's emissions, based on the assumption that exposure to the facility's emissions are not occurring away from home. From the third trimester to age <2 years, 85% of time is spent at home. From age 2 through <16 years, 72% of time is spent at home. From age 16 years and greater, 73% of time is spent at home. Facilities with a school within the 1×10^{-6} (or greater) isopleth are directed to use FAH = 1 for the child age groups (3rd Trimester, 0<2 years, and 2<16 years). FAH was not applied for Project cancer risk modeling, conservatively assuming 100% of time at home.

For residential inhalation exposure, cancer risk must be separately calculated for specified age groups because of age differences in sensitivity to carcinogens and age differences in intake rates (per kg body weight). Separate risk estimates for these age groups provide a health-protective estimate of cancer risk by accounting for greater susceptibility in early life, including both age-related sensitivity and amount of exposure. The following equation illustrates the formula for calculating residential inhalation cancer risk.

$$RISK_{inh-res} = DOSE_{air} \times CPF \times ASF \times \frac{ED}{AT} \times FAH$$

Where:

$RISK_{inh-res}$ = Residential inhalation cancer risk
$DOSE_{air}$ = Daily inhalation dose (mg/kg-day)
CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for a specified age group (unitless)
ED = Exposure duration (in years) for a specified age group
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Cancer risks calculated for individual age groups are summed to estimate the total cancer risk over the exposure duration. Cancer risk is expressed in "chances per million" (cancer risk × 10^{-6}) but may also be expressed in other ways, such as "chances per 100,000" or "chances per 10 million" (cancer risk × 10^{-7}).

Residential exposure was modeled using a 70-year duration, and worker exposure was modeled using a 40-year duration, with a worker adjustment factor of 2.33, consistent with regulatory guidance.

For assessment of off-site worker cancer risk at the MEIW, the default assumes working age begins at 16 years. The daily inhalation dose ($DOSE_{air}$) is based on the adjusted 8-hour concentration at the MEIW (for non-continuous sources) and amount of time the off-site worker's schedule overlaps with the facility's emission schedule. Additional consideration for off-site worker cancer risk assessment is whether there are women of child bearing age at the MEIW location and whether the MEIW has a daycare center. Under most circumstances, cancer risk accumulated by inhalation is calculated using the following equation:

$$RISK_{inh-work} = DOSE_{air} \times CPF \times ASF \times \frac{ED}{AT}$$

Where:

$RISK_{inh-work}$ = Worker inhalation cancer risk
$DOSE_{air}$ = Daily inhalation dose (mg/kg-day)
CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for a specified age group (one for working age 16 to 70)
ED = Exposure duration (in years) for a specified age group (40 years)
AT = Averaging time for lifetime cancer risk (70 years)

As discussed previously, some substances (e.g., semi-volatile organics and metals) are carcinogenic regardless of how they enter the body. Exposures to these substances are called multi-pathway. HRA for a facility that emits a multi-pathway pollutant must, at a minimum, evaluate doses from soil ingestion and dermal exposure. If polycyclic aromatic hydrocarbons, lead, dioxins, furans, or polychlorinated biphenyls are emitted, then the breast-milk consumption pathway becomes mandatory for residential receptors. OEHHA has developed transfer coefficients for these chemicals from the mother to breast milk. The other exposure pathways (e.g., ingestion of homegrown produce or fish) are only evaluated for if the facility impacts that exposure medium and the receptor under evaluation can be exposed to that medium or pathway. For example, if the facility does not impact a fishable body of water, or the impacted water body does not sustain fish that are consumed by anglers, then the fish pathway will not be considered for that facility or receptor.

Non-inhalation residential cancer risk is calculated using the same steps as inhalation cancer risk. The pathway under evaluation (e.g., soil ingestion) is multiplied by the substance-specific oral slope factor, expressed in units of inverse dose (i.e., $(mg/kg/day)^{-1}$), the appropriate ASF, and exposure duration divided by averaging time to yield the cancer risk for a specified age grouping. Cancer risk for each age group is summed as appropriate for the exposure duration.

If multiple substances are emitted, the substance-specific cancer risks for each exposure pathway are summed to give the (total) multi-pathway cancer risk at the receptor location. HARP2 displays the multi-pathway risk for each carcinogenic substance and a breakdown of the cancer risk from each exposure pathway.

This HRA evaluates mother's milk due to the presence of lead in fugitive dust. The default assumption inherent in the intake rate is that the infant's only source of food is breast milk for the first year (e.g., is fully breastfed), which is one-half of the 0<2 year age group used in the Hot Spots program. Thus, the cancer risk by the mother's milk pathway is calculated with a slightly modified equation using a different exposure duration. Once the cancer risk is determined for the mother's milk pathway then it is summed with the other risks to calculate the total cancer risk for the receptor.

For facilities with large emission footprints (e.g., refineries, ports, or rail yards, etc.), population-based health impacts provide a better illustration of the potential population-wide impacts of emissions since large numbers of people may be exposed to the emissions. The individual cancer risk approach discussed up to this point has some inherent limitations in terms of protecting public health. A small facility with a single stack can impact a few individuals with an individual cancer risk that is unacceptable, whereas a large facility may have an individual cancer risk that is less than the acceptable limit for individual risk but exposes many more people. Thus, the population-wide impacts are larger for the large facility. Population-wide risk is independent of individual risk and assumes that a population (not necessarily the same individuals) will live in the impacted zone over a 70-year period.

To evaluate population risk, the cancer burden method accounts for the number of excess cancer cases that could occur in a population. The cancer burden is calculated by multiplying the cancer risk at a census block centroid by the number of people who live in the census block, and adding up the estimated number of potential cancer cases across the zone of impact. The result of this calculation is a single number that is

intended to estimate of the number of potential cancer cases within the population that was exposed to the emissions.

Cancer burden is independent of how many people move in or out of the vicinity of an individual facility. For example, if 10,000 people are exposed to a carcinogen at a concentration with a 1×10^{-5} cancer risk for a lifetime the cancer burden is 0.1, and if 100,000 people are exposed to a 1×10^{-5} risk the cancer burden is 1.

OEHHA recommends that exposure from projects longer than 2 months but less than 6 months be assumed to last 6 months (e.g., a 2-month project would be evaluated as if it lasted 6 months). Exposure from projects lasting more than 6 months should be evaluated for the duration of the project. In all cases, for assessing risk to residential receptors, the exposure should be assumed to start in the third trimester to allow for the use of the ASFs. Thus, for example, if one is evaluating a proposed 10-year project, the cancer risks for the residents would be calculated based on exposures starting in the third trimester through the first ten years of life.

HRA performed for the Project follows the methodology described above for the Operation Phase which was modeled for 70 years per SJVAPCD policy. Emissions calculated for the Baseline (see Section 3.4.3) and Project (see Section 3.4.5) were determined for each time segment during the Project's life corresponding to cancer risk age bins. Cancer risk results for each time segment were then summed to determine the Project cancer risk impact at each receptor.

Non-Cancer Risk

Estimates of noncancer inhalation health impacts are determined by dividing an airborne concentration at the receptor by the appropriate REL. This is termed the Hazard Index (HI) Approach. A REL is used as an indicator of potential noncancer health impacts and is defined as the concentration at which no adverse noncancer health effects are anticipated. When a health impact calculation is performed for a single substance, then it is called the hazard quotient (HQ). Each REL for a substance will have one or more target organ systems (e.g., respiratory system, nervous system, etc.) where the substance can have a noncancer health impact. Thus, all HQs have specified target organ systems associated with them. The sum of the HQs of all chemicals emitted that impact the same target organ is the HI. Inhalation RELs for noncancer health impacts have been developed for acute, 8-hour chronic, and continuous chronic exposures to a number of substances.

Acute RELs are designed to protect against the maximum 1-hour ground level concentration at a receptor. Chronic RELs protect against long-term exposure to the annual average air concentration spread over 24 hours/day, 7 days/week. 8-hour RELs are designed to protect people with daily 8-hour schedules, such as off-site workers, in an impacted zone. The 8-hour RELs are used for typical daily work shifts of 8 hours and represent concentrations at or below which health impacts would not be expected even for sensitive subpopulations in the general population with repeated chronic daily 8-hour exposures. The 8-hour RELs can be used to evaluate the potential for health impacts (including effects of repeated exposures) in off-site workers, and to children and teachers exposed during school hours.

Acute, 8-hour, and chronic RELs are needed because the dose metrics and even the health impact endpoints may be different with the different exposure durations of acute, daily 8-hour, and chronic exposures. Also,

although chronic REL values are lower or set the same as 8-hour RELs, there are some cases such as special meteorological situations (e.g., significant diurnal-nocturnal meteorological differences) or intermittent exposures where the 8-hour REL may be more protective than the chronic REL.

As discussed above, in order to calculate the acute, 8-hour, or chronic HQ, the maximum ground-level concentration (in units of µg/m^3) during the appropriate period of time (i.e., 1-hour acute, 8-hour, and 1-year chronic) is divided by the corresponding REL (in µg/m^3) for the substance. If a receptor is exposed to multiple substances that target the same organ system, then the HQs for the individual substances are summed to obtain a Hazard Index (HI) for that target organ as shown in the following equations.

$$HI_{Organ1} = \frac{C_{air,1}}{REL_1} + \frac{C_{air,2}}{REL_2} + \cdots + \frac{C_{air,n,}}{REL_n}$$

or

$$HI_{Organ1} = HQ_1 + HQ_2 + \cdots + HQ_n$$

A HI of 1.0 or less indicates that adverse health effects are not expected to result from exposure to emissions of that substance. As the HI increases above one, the probability of human health effects increases by an undefined but relative amount. However, HI above one is not necessarily indicative of health impacts due to the application of uncertainty factors in deriving the RELs.

There are non-cancer multi-pathway pollutants that are assessed for inhalation, ingestion, and other non-inhalation pathways. Nickel and arsenic are two that are found in fugitive dust and so the non-inhalation exposures to these metals are assessed for the corresponding target organs. Specifically, nickel effects the respiratory, hematologic, and alimentary systems while arsenic affects development, the skin, the nervous system, and the cardiovascular system.

3.5 Project-Level Impacts and Mitigation Measures

Project impact is compared to each threshold of significance (Section 3.3) and is evaluated in the following subsections. Mitigation measures are proposed for impacts where Project impact is predicted to exceed a threshold. Mitigated impact is then assessed to evaluate the effect of the mitigation and determine if additional mitigation is necessary.

3.5.1 Conflict With or Obstruction to the Implementation of an Air Quality Plan

Impact Statement

Impact AQ-1: *Would the Project conflict with or obstruct implementation of the applicable air quality plan?* **(CEQA Appendix G Threshold Criteria (a))**

Impact Analysis

The SJVAPCD AQMPs are discussed above in Section 3.1.4.1. Potential control measures that may be pursued to reduce emissions are described in the AQMP. These measures would be implemented as rules and therefore would undergo the associated public rulemaking process, which allows for a discussion of their compliance with applicable requirements. Thus, it is unlikely that such a process would result in a requirement that the Project could not comply with. In the end, the Project would be required to comply with regional air quality rules promulgated by the SJVAPCD and participate in reducing air pollutant emissions. Aggregates production is proportional to population growth, which is a factor that is accounted for in AQMPs. Therefore, the Project would not obstruct implementation of an air quality plan because growth in the emissions would be an amount proportional to population growth, thus, growth in the regional aggregates market is included in the air quality plans.

In summary, the Project would not conflict with or obstruct specific control measures and is therefore consistent with attainment goals in an air quality plan. The AQMPs represent a broader legislative agenda which can be represented in the form of district rules and thresholds such as the ones which are analyzed in this Report. See report sections 3.1.4.2 Rules and Regulations and 3.3 Significance Thresholds.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less than significant.

3.5.2 Net Increase of any Criteria Pollutant

Impact Statement

Impact AQ-2: *Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable Federal or State ambient air quality standard?* **(CEQA Appendix G Threshold Criteria (b))**

Impact Analysis

CEQA defines cumulative impacts as two or more individual effects which, when considered together, are either significant or "cumulatively considerable", meaning they add considerably to a significant environmental impact. An adequate cumulative impact analysis considers a project over time and in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed.

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development. Future attainment of State and Federal ambient air quality standards is a function of successful implementation of the SJVAPCD's attainment plans. Consequently, the SJVAPCD's application of thresholds of significance for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

A Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including but not limited to an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (CCR §15064(h)(3)).

Thus, if project emissions (change from baseline) exceed thresholds for NOx, ROG, SOx, CO, PM_{10} or $PM_{2.5}$, then the project would result in a cumulatively considerable net increase of a criteria pollutant for which the SJVAPCD is in non-attainment under applicable Federal or State ambient air quality standards. This does not imply that if the project impact is less than those significance criteria, it cannot be cumulatively significant. SJVACPD attainment significance criteria are presented in Table 6 alongside non-attainment pollutants for disclosure purposes. Thresholds are applied separately to construction and operation phases of a project. Project emissions are summarized and compared to significance criteria in Table 23 and Table 24.

Table 23 Construction Phase Criteria Pollutant Annual Emissions

	ROG (ton/yr)	CO (ton/yr)	NO_X (ton/yr)	PM_{10} (ton/yr)	$PM_{2.5}$ (ton/yr)	SOx (ton/yr)
Construction	0.0478	0.92	0.89	0.22	0.12	0.00
Threshold	10	100	10	15	15	27
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Appendix F.

Note: Numbers in table may differ slightly from calculation results due to rounding.

Table 24 Operation Phase Criteria Pollutant Annual Emissions

Criteria Pollutant	Permit – Required Sources (tons/yr)			Permit - Exempt Sources (tons/yr)		
	Project	Significance Criteria	Project Exceeds?	Project	Significance Criteria	Project Exceeds?
ROG	6.2	10	No	-0.1	10	No
CO	34.3	100	No	49.4	100	No
NO_X	3.4	10	No	5.2	10	No
PM_{10}	9.8	15	No	-25.4	15	No
$PM_{2.5}$	2.9	15	No	-6.3	15	No
SO_X	0.9	27	No	1.4	27	No

Source Appendix G

Notes: Negative values in this table result in part from the fact that off-road engines will be replaced or retrofit, resulting in lower emissions. Max hour was assumed to represent 15% of max day. Numbers in table may differ slightly from calculation results due to rounding.

Impact analysis for a project's potential to exceed or contribute to exceedance of an ambient air quality standard (AAQS) normally involves modeling emissions to predict the concentration of pollutant(s) off-site. SJVAPCD has established a screening level of 100 lb/day that may be used to avoid modeling impacts that are unlikely to result in exceedances. Baseline emissions from sources located at Rockfield properties were subtracted from future emissions at the Rockfield properties to determine the Project increase in emissions on-site for comparison to the 100 lb/day screening level as shown in Table 25.

Table 25 Project On-site Daily Emissions and Model Screening Level Comparison

Scenario	CO (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	SO_X (lb/day)
On-Site Baseline	228.4	544.0	1,023.5	238.2	0.5
On-Site Future	1,323.4	669.4	1,057.8	257.1	26.6
On-Site Project	1,095.0	125.4	34.3	18.8	26.1
Screening Criteria	**100**	**100**	**100**	**100**	**100**
Exceeds Criteria?	**Yes**	**Yes**	**No**	**No**	**No**

Source Appendix G

Notes: Negative values are a result of lower future emissions. Max hour was assumed to represent 15% of max day. Numbers in table may differ slightly from calculation results due to rounding.

Level of Significance Before Mitigation

As shown in Table 24 and Table 25, the total on-site Project emissions increase. Regional effects are less-than-significant as shown in Table 24. The localized effects of the Project surrounding the Project site are potentially significant as shown in Table 25,because they exceed the screening level for CO and NOx. Table 25 findings lead to the requirement for additional criteria air pollutant dispersion modeling for each criteria pollutant. The additional analysis is presented below in Table 28.

Mitigation Measures

The Mitigated Project incorporates newer engines to reduce off-road engine PM_{10} emissions, and an increase in the level of control on sources of fugitive dust (roads, stockpiles) using the control methods described in the Fugitive Dust Control Plan, Appendix K.

Mitigation Measure AQ-1: Off-road Engines

Off-road engines shall be retrofitted or upgraded in order to meet the Tier 4i Particulate Emissions standard of 0.008 grams of PM_{10}/horsepower-hour.

Mitigation Measure AQ-2: Fugitive Dust Control

Implement control for fugitive dust as described in the FDCP (Appendix K). Unpaved roads shall be controlled at a level of 90% by application of chemical dust suppressants or other equivalent methods. Stockpiles shall be controlled at a level of 90% by application water or other equivalent methods.

Level of Significance After Mitigation

Table 26 presents mitigated Project annual emissions for each criteria pollutant and the associated significance criteria established by SJVAPCD which are applied to total emissions from permit-required stationary sources

and permit-exempt sources separately though the significance criteria for each are equivalent. As shown in Table 26**,** mitigated Project emissions for each criteria pollutant do not exceed the significance criteria.

Table 26 Mitigated Criteria Pollutant Annual Emissions

Criteria Pollutant	Permit – Required Sources (tons/yr)			Permit - Exempt Sources (tons/yr)		
	Project	Significance Criteria	Project Exceeds?	Project	Significance Criteria	Project Exceeds?
ROG	6.2	10	No	-0.1	10	No
CO	34.3	100	No	49.4	100	No
NO_X	3.4	10	No	5.2	10	No
PM_{10}	4.3	15	No	-67.4	15	No
$PM_{2.5}$	1.3	15	No	-17.1	15	No
SO_X	0.9	27	No	1.4	27	No

Source: Appendix H.

Notes: Negative values represent emissions reductions due to newer technology and lower emission equipment as would be expected from phase in of existing engine regulations and implementation of Mitigation Measures AQ-1 through AQ-3 that are discussed in the Report.

Impact analysis for a project's potential to exceed or contribute to exceedance of an ambient air quality standard (AAQS) normally involves modeling emissions to predict the concentration of pollutant(s) at the property line. SJVAPCD has established a screening level of 100 lb/day that is used to screen out of modeling for impacts that are unlikely to exceed a threshold. Baseline emissions from sources located at the Rockfield properties were subtracted from future emissions at the property to determine the Project increase in emissions on-site for comparison to the 100 lb/day screening level. The impact of mitigation on daily criteria pollutant emissions is demonstrated in Table 27.

Table 27 Mitigated On-site Daily Emissions and Model Screening Level Comparison

Scenario	CO (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	SO_X (lb/day)
On-Site Baseline	228.4	544.0	1,010.9	234.5	0.5
On-Site Future	1,323.4	669.4	573.4	136.7	26.6
On-Site Project	1,095.0	125.4	-437.5	-97.8	26.1
Screening Criteria	**100**	**100**	**100**	**100**	**100**
Exceeds Criteria?	**Yes**	**Yes**	**No**	**No**	**No**

Source: Appendix H

Notes: Negative values in this table result in part from the fact that off-road engines will be replaced or retrofit, resulting in lower emissions. Max hour was assumed to represent 15% of max day. Numbers in table may differ slightly from calculation results due to rounding.

As demonstrated in Table 27, Project increases in emissions of CO and NOx from sources remain greater than the screening level after mitigation. In accordance with SJVAPCD Policy APR-2030, when any one of the criteria pollutants surpasses its established screening threshold, air dispersion modeling is required for all criteria pollutants. Therefore, the off-site concentration of each criterion pollutant was modeled, and results are presented in Table 28.

Air dispersion modeling was performed using the latest version of AERMOD to ensure accurate and reliable air quality predictions. Short term effects of blasting were modeled separately from other sources because mining and related operations cease during blasting. Long term effects of blasting are assessed in a separate model that includes only sources related to blasting and are presented in the next section.

Table 28 Mitigated Criteria Pollutant Concentrations and AAQS Comparison

Pollutant	Period	Background (ug/m^3)[a]	Project Contribution[b] (ug/m3)		Proposed Project + Background (ug/m^3)	NAAQS[c] (ug/m^3)	CAAQS[c] (ug/m^3)	SJVAPCD SIL[e] (ug/m^3)	Significant?
NO2	1-hour	25.46	H1H	79.93	105.39	—	339	NA	No
	1-hour	25.46	H8H	69.29	94.75	188	—	NA	No
	Annual	11.31	H1H	5.17	16.48	100	57	NA	No
SO2	1-hour	1.59	H1H	9.96	11.55	196	655	NA	No
	Annual	1.59	H1H	1.09	2.68	26	—	NA	No
CO	1-hour	301	H1H	231	533	40,000	23,000	NA	No
	8-hour	308	H1H	255	563	10,000	10,000	NA	No
PM10	24-hour	—[d]	H8H	0.2365	N/A	150	50	10.4	No
	Annual	—[d]	H1H	-0.1101	N/A	—	20	2.08	No
PM2.5	24-hour	—[d]	H8H	-0.015	N/A	35	—	2.5	No
	Annual	—[d]	H1H	0.0825	N/A	9	12	0.63	No
Pb	3-month	0.003	Max Ave	0.003	0.006	0.15	—	NA	No

Source: Appendix I

a) Background concentration is obtained from Site No. 11.

b) HIH = 1st Highest High (highest modeled result). Where a pollutant and averaging period has a NAAQS and CAAQS standard, the most stringent standard is selected.

c) San Joaquin Valley APCD is in attainment for these pollutants (excluding PM10 and PM2.5) and averaging periods; therefore, the most stringent AAQS (CAAQS or NAAQS) is used for the significant determination.

d) San Joaquin Air Basin is classified as "non-attainment" for PM10 and PM2.5. Therefore, San Joaquin Valley APCD Significant Impact Level (SIL) is used for determining significance and does not require background concentrations (APR 1925) (SJVAPCD, 2024).
e) SIL is defined as "a concentration threshold used to determine whether a proposed source's emissions will have a "significant impact on air quality in an area" (APR 1925) (SJVAPCD, 2024).

As shown in Table 26, mitigated annual emissions are below applicable significance thresholds. As shown in Table 28**,** future concentrations of criteria pollutants (Project + Background) would be less than each AAQS and PM10 and PM2.5 emissions are less than the applicable SJVAPCD SILs. Therefore, the Project would not contribute to an exceedance of an AAQS and the impact is less than significant with implementation of Mitigation Measures AQ-1 and AQ-2.

Blasting

To evaluate the environmental impact of above-ground blasting at the Rockfield Quarry, a separate blasting model was conducted. Meteorological and blasting data were collected and analyzed. Five years of temperature, barometric pressure, and wind speed data (2018-2022) from Fresno County were used to model atmospheric conditions. Explosive parameters, including the maximum weight per blast and fuel heat content, were sourced from the DEIR, with conservative values selected to ensure safety. A maximum weight of 2,925 lbs per delay was calculated for a vibration analysis prepared for the DEIR.

Dispersion modeling was conducted exclusively for the quarry site, where nine emission sources were placed around the perimeter to simulate blasting events. Receptors were distributed throughout the surrounding area, with higher density near the site boundary to improve accuracy. Background NO_2 concentrations (17.7 ppb) were incorporated. **Figure 11** (see **Appendix A**) illustrates the AERMOD modeling scenario for this project. Green markers indicate receptor locations, while blue squares represent potential blasting areas within the Project site. Modeling focused on designated blasting hours (10:00 a.m. to 2:00 p.m. PST), during which no other emission sources were considered.

Table 29 summarizes the dispersion modeling results from blasting for NO_2. The 98th percentile of 1-hour maximum concentrations was compared to the National standard, while the highest 1-hour concentration was compared to the state standard, reflecting the different regulatory approaches. The National criterion is based on the 98th percentile of daily maximum 1-hour values, whereas the state standard uses the single highest 1-hour concentration. Across all nine scenarios, modeled NO_2 concentrations ranged from 56 to 216 $\mu g/m^3$, which are well below both National and State 1-hour limits. These findings confirm that blasting operations at the Rockfield Quarry would comply with current air quality regulations.

Table 29 Maximum Nitrogen Dioxide Dispersion Concentration Values at Different Blasting Sites

Quarry Blasting	NO_2 Concentrations
1st Highest Max Daily 1-hr Average of NO_2 Concentration (µg/m^3)	216
CAAQS Threshold	339
Exceeded	**NO**
8th Highest Max Daily 1-hr Average of NO_2 Concentration (µg/m^3)	134
NAAQS Threshold	188
Exceeded	**NO**

Note: The model conservatively accounted for various areas of mining throughout the Quarry Site that were possible and chose the highest NO_2 concentration. Modeling files are provided in Appendix I.

Overall, the Project would not result in a cumulative net increase of any criteria pollutant for which the Project region is designated non-attainment. In addition, emissions from the Project's blasting activities would not contribute to an exceedance of an applicable Ambient Air Quality Standard (AAQS).

3.5.3 Exposure of Sensitive Receptors to Substantial Pollutant Concentrations

Impact Statement

Impact AQ-3: *Would the Project expose sensitive receptors to substantial pollutant concentrations?* **(CEQA Appendix G Threshold Criteria (c))**

Project Impact Analysis at Project Site

Determination of whether project emissions would expose sensitive receptors to substantial pollutant concentrations is a function of assessing potential health risks. Sensitive receptors are facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors. When evaluating whether a development proposal has the potential to result in localized impacts, the nature of the air pollutant emissions, the proximity between the emitting facility and sensitive receptors, the direction of prevailing winds, and local topography must be considered. Figures 7 and 8 in Appendix A contain non-residential sensitive receptors and receptors modeled in this HRA respectively.

A Health Risk Assessment was performed as discussed in Section 3.4.6 to evaluate the effects of TACs including DPM from vehicles and various substances found in fugitive dust emissions (i.e., metals and crystalline silica). Health risks from operation of the Project are presented in Table 30.

Table 30 Project Health Risk Impacts

Model Receptor # – Type	Excess Cancer Cases per Million People Exposed (Year 1-70)	Excess Cancer Cases per Million People Exposed (Year 31-100)	Max Chronic Hazard Index	Max Acute Hazard Index
23 – Residence (MEIR – Cancer, Chronic)	5.05	2.17	0.01	0.106
25 – Residence (MEIR – Acute)	0.41	-0.007	0.003	0.18
20 – Worker (MEIW – Cancer, Chronic)	-2.39	-2.10	<0.001	0.05
6772 – Fence-line Receptor (PMI-Acute)	N/A	N/A	N/A	0.85
Significance Threshold	**20**	**20**	**1.0**	**1.0**
Threshold Exceeded?	**No**	**No**	**No**	**No**

Source: Appendix I

Note: These receptors represent locations of highest exposure. Discrepancies between table and appendix values may exist due to rounding. Off-site receptors were assessed as worker receptors under the conservative assumption that residences may be used as workplaces and agricultural workers may be present in fields surrounding the site.
See Figure 8b for locations of receptors in this Table
MEIR: Maximum Exposed Individual Receptor occurs for non-cancer chronic hazard and cancer risk at the same receptor (#23).
MEIW: Maximum Exposed Individual Worker occurs for non-cancer chronic hazard and cancer risk at the same receptor (#20).
Acute hazard is evaluated for the PMI: Point of Maximum Impact. The Acute MEIR is presented for informational purposes.

Negative numbers in Table 30 are the result of the Future condition having lower health risk impact than the Baseline condition. Project emissions reductions occur as a result of CARB regulations and standards that mandate in cleaner engines over time, as well as the facility-wide incorporation of new technologies generally that are more efficient and result in lower emissions.

Level of Significance Before Mitigation

Less than significant.

Mitigated Project Analysis

As previously detailed, a mitigated analysis was performed, which approximated the health risk impact levels of the Project that would result from mitigation of off-road engine PM_{10} emissions, increasing the level of control on sources of fugitive dust (roads, stockpiles), as those measures are stated in Mitigation Measures AQ-1 and AQ-2.

Level of Significance Post Mitigation

Table 31 demonstrates health risk impacts that result from the Mitigated Project would be less than significant with the mitigation measures.

Table 31 Mitigated Impact Analysis Health Risk Impacts

Model Receptor # – Type	Excess Cancer Cases per Million People Exposed (Year 1-70)	Excess Cancer Cases per Million People Exposed (Year 31-100)	Max Chronic Hazard Index	Max Acute Hazard Index
23 – Residence (MEIR – Cancer, Chronic)	5.03	2.12	0.008	0.104
25 – Residence (MEIR – Acute)	0.41	0.01	0.002	0.18
20 – Worker (MEIW – Cancer, Chronic)	-2.39	-3.29	<0.000	0.05
6772 – Fence-line Receptor (PMI-Acute)	N/A	N/A	N/A	0.84
Significance Threshold	20	20	1.0	1.0
Threshold Exceeded?	**No**	**No**	**No**	**No**

Source: Appendix I

Note: These receptors represent locations of highest exposure. Discrepancies between table and appendix values may exist due to rounding. Off-site receptors were assessed as worker receptors under the conservative assumption that residences and may be used as a workplaces and agricultural workers may be present in fields surrounding the site.
See Figure 8b for locations of receptors in this Table
MEIR: Maximum Exposed Individual Receptor occurs for non-cancer chronic hazard and cancer risk at the same receptor (#23).
MEIW: Maximum Exposed Individual Worker occurs for non-cancer chronic hazard and cancer risk at the same receptor (#20).
Acute hazard is evaluated for the PMI: Point of Maximum Impact. The Acute MEIR is presented for informational purposes.

As demonstrated by Table 31, impacts are less than significant cancer, chronic, and acute health risk. Therefore, the Mitigated Project would not expose sensitive receptors to substantial pollutant concentrations. Negative numbers in Table 31 represent reduced risk in the future compared to the Baseline.

In this scenario, each offsite receptor experienced reduced cancer risk compared to the Baseline. This decrease in risk associated with the Project is primarily due to increased control on fugitive dust, as well as cleaner off-road engines which result in reductions of diesel particulate matter emissions. Moreover, in many cases, receptors are farther from emissions given the larger Project mine area compared to the Baseline facility. Cancer Burden analysis is available below. Modeling results related to the mitigated analysis are available in Appendix H.

Cancer Burden

To evaluate potential health impacts, population data from HARP2 census records was used to identify nearby communities, which were modeled as sensitive receptors in AERMOD View. Terrain data from AERMAP and meteorological data from Fresno Station (2018-2022) were incorporated to support accurate dispersion modeling. Emission sources were standardized to 1 g/s for proper health risk analysis, and modeled emissions were processed through HARP2 to assess cancer risk over a 70-year exposure period. This analysis was done for both mitigated and unmitigated emissions results. When cancer burden is equal to or greater than 0.5, mitigation strategies must be employed to reduce the cancer burden.

Cancer burden is measured using census receptors, which represent a community of individuals living in an area, based on census data. The locations of census receptors are determined based on census data.

The final cancer burden analysis for unmitigated emissions resulted in a total cancer risk sum of -0.258. Each of the 3,643 census receptors showed a negative cancer risk, indicating that the cumulative cancer burden on the population of approximately 253,997 located in a radius of 10 miles from the center of the project from unmitigated emission increases is effectively zero. While risk at individual receptors was above zero in the initial health risk modeling, the aggregated risk at each census receptor location was less than zero. Similarly, the analysis for mitigated emissions produced a total cancer risk sum of -0.259, with each receptor again showing negative values. Because the calculated cancer risk is negative for both scenarios, the overall cancer burden would be negative and less than the 0.5 threshold. These results confirm that, under the modeled conditions and with the proposed mitigation measures, the Project does not present a measurable cancer risk to the surrounding population and therefore does not pose a significant health concern for nearby communities. Full cancer burden results are provided in Appendix G for non-mitigated results and Appendix H for mitigated results.

On-Road Vehicle Emissions HRA

To evaluate the potential health impacts of increased heavy duty tractor class vehicles for product haulage on off-site roads leading into and out of Fresno, CA, on-road emissions were calculated for these heavy class vehicles along with the paved road dust that results from their haulage. To do this, three separate emissions sources were considered; the on road exhaust emissions from Tier 7 Tractor Class 8 vehicles, the fugitive paved road dust, and the idling emissions of the Tier 7 Tractor Class 8 vehicles spent at intersections controlled by traffic lights. These emission sources were modeled in AERMOD as one long strip of roadway, with receptors included 25 meters away from the roadway sources to simulate emission data from and near the road.

For idling and exhaust emissions, data was gathered from EMFAC's database to determine emission factors specific to Fresno County. Fugitive road dust emission factors were determined using SJVAPCD estimation methods for paved roads. Total number of trips and vehicle miles traveled (VMT) were estimated using information from the DEIR in tandem with the updated yearly throughput for the Project.

The road segment chosen for analysis was a short segment of Friant Rd and Willow Rd. A total length of 9.94 miles of road was modeled, with 7 intersections included. The intersections included can be found in Table 32

below. Percentages of vehicle traffic and idling times at intersections were taken from the DEIR to determine the estimated number of haul trucks travelling on the segmented Fresno roads. This roadway was selected as a conservative worst-case scenario for the health risk analysis, as it represents the segment of road anticipated to experience the highest throughput of haul vehicles as the result of the Project.

Table 32 List of the Project Intersections Chosen for Haul Truck Trip Modeling

Traffic Intersections
North Fork x Friant Road
Quarry Site x Friant Road
Plant Site x Friant Road
Friant Road x Willow Ave
Copper River x Friant Road
Copper Ave x Friant Road
Copper Ave x Willow Ave

This information was combined to conduct a health risk assessment on this road, assessing cancer, chronic, and acute risks using the OEHHA method and the inhalation only pathway with no control. The results for these health risks can be seen summarized in Table 33 and Table 34 below.

Table 33 On-Road Vehicle Emissions Health Risk Summary for Phase 1 (2.0 million Tons Per Year)

Risk Analysis	Max 70 Year Cancer Risk in One Million	Max Chronic Hazard Index	Max Acute Hazard Index
Individual Resident Exposure	3.19	0.009	0.007
Significance Threshold	20	1.0	1.0
Threshold Exceeded?	No	No	No

Source: Appendix I.

Table 34 On-Road Vehicle Emissions Health Risk Summary for Phase 2 (3.0 million Tons Per Year)

Risk Analysis	Max 70 Year Cancer Risk in One Million	Max Chronic Hazard Index	Max Acute Hazard Index
Individual Resident Exposure	3.86	0.013	0.013
Significance Threshold	20	1.0	1.0
Threshold Exceeded?	No	No	No

Source: Appendix I.iu

Table 33 and Table 34 show that during the two different production phases of the project, health risk caused

by on-road haul truck traffic off-site would not exceed significant thresholds established by the SJVAPCD anywhere along the 9.94 mile road from the North Fork Rd. and Friant Rd. intersection down to the Friant Rd. and Copper Avenue intersection.

3.5.4 Odors Affecting a Substantial Number of People

Impact Statement

Impact AQ-4: *Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?* **(CEQA Appendix G Threshold Criteria (d))**

Impact Analysis

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact and the variety of odor sources, there are no quantitative or formulaic methodologies to determine the presence of a significant odor impact. SJVAPCD screening thresholds state that receptors greater than one mile from asphalt plant sites screen out of analysis, however local residences exist less than one mile from the project. SJVAPCD Significance Thresholds state that a significant impact would occur if the Project receives "More than one confirmed complaint per year averaged over a three-year period, or three unconfirmed complaints per year averaged over a three-year period."

The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions Odor intensity would decrease rapidly with distance and is not expected to be frequently (or at all) detectable at locations outside of the Project site boundary. The asphalt plant that would be installed as part of the Project would be newer and cleaner than the previous plant. Blue smoke controls indicates that the Project results in less odor causing emissions. The new asphalt plant would also be fired on natural gas in the long-term (and initially there may be propane used, which has equivalent emissions characteristics to natural gas on a heat content basis). Given the large site upon which the odors will dissipate, and the fact that the existing facility has not generated an odor that generated complaints; objectionable odors affecting a substantial number of people are unlikely to result from the Project.

Blue smoke control efficiency of 95% was chosen based on manufacturer specifications outlined in "Blue Smoke Control Permitting Parameters" (Appendix H). Blue smoke control collectors are designed for controlling blue smoke that typically comes from in-plant transferring and loading hot mix asphalt. The collectors are high efficiency cartridge mist collectors. Constructed with a steel housing, the filtration is accomplished in cells with each cell having multiple stages; each more efficient than the previous. The first few stages are metal and designed to be cleaned when necessary. Other later stages may be disposable and replaced when they become plugged.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

Mitigation Measure AQ-3: Asphalt Plant Emissions Controls

The following design features will mitigate VOC, SVOC, and/or SO2 emissions:

1. The type of asphaltic cement produced by on-site plants affects odorous emissions. Some asphaltic cements have lower VOC/SVOC emissions than others. Therefore, asphaltic cements with lower VOC/SVOC emissions will be used to the extent feasible.
2. In accordance with SJVAPCD Rule 4309, the Project will implement "periodic burner tune-ups" that may reduce VOC emissions from the asphalt plant.
3. Mixing drum vapors will be routed back to the dryer burner.

Level of Significance After Mitigation

Less than significant.

4.0 GREENHOUSE GASES

This section of the Report assesses GHG impacts of the Project. The methodologies used and the information provided in this section are supported by calculations in Appendix G.

4.1 Regulatory Setting

4.1.1 Characteristics of Climate Pollutants

The accumulation of GHGs in the atmosphere contributes to the regulation of the earth's temperature. Some GHGs can remain in the atmosphere for long periods of time (i.e., long-lived). The following six GHGs are recognized under the Kyoto Protocol and have been found by the International Panel on Climate Change (IPCC) to have an effect on global climate change. In addition, California has identified "short-lived" climate pollutants.

Long-Lived Climate Pollutants

In general, there are six (6) compounds/classes of GHGs that are counted when emissions are inventoried. Each GHG exhibits a different global warming potential (GWP). The mass of emissions of each GHG is multiplied by its GWP to determine the carbon dioxide equivalent (CO_2e) potential for global warming. GWPs have changed over time by the Intergovernmental Panel on Climate Change (IPCC) which is considered an authority on GHGs and their effects. The CAP and CARB emissions inventories and plans use GWPs that are an iteration or two behind and the most recent IPCC publication. Characteristics of each long-lived GHG and the associated GWP is presented below.

Carbon Dioxide (CO_2) is an odorless, colorless natural GHG. CO_2 is emitted from natural and anthropogenic sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources include burning coal, oil, natural gas, and wood. By definition, CO_2 has a GWP equal to one (1).

Methane (CH_4) is a flammable GHG. A natural source of CH_4 is from the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain CH_4, which is extracted for fuel. Other sources include landfills, fermentation of manure, and ruminants such as cattle. CH_4 has a GWP equal to 25.

Nitrous Oxide (N_2O) is a colorless GHG. N_2O is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. N_2O has a GWP equal to 298.

Hydrofluorocarbons (HFCs) are synthetic chemicals that are used as a substitute for chlorofluorocarbons (CFCs). Of all the GHGs, they are one of three groups with the highest global warming potential. HFCs are human made for applications such as air conditioners and refrigerants. HFCs have GWPs that range from 124 (HFC 125a) to 14,300 (HFC 23).

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere; therefore, PFCs have long atmospheric lifetimes, between 10,000 and 50,000 years. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing. PFCs have GWPs that range from 7,390 (PFC 14) to 12,200 (PFC 116).

Sulfur Hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection. SF_6 has a GWP equal to 22,800.

Short-Lived Climate Pollutants

Short-lived climate pollutants are climate forcers that remain in the atmosphere for a much shorter period of time than longer-lived climate pollutants, such as carbon dioxide (CO_2). Their relative potency, when measured in terms of how they heat the atmosphere, can be tens, hundreds, or even thousands of times greater than that of CO_2. The impacts of short-lived climate pollutants are especially strong over the short term. Reducing these emissions can make an immediate beneficial impact on climate change.

Black carbon is a component of fine particulate matter, which has been identified as a leading environmental risk factor for premature death. It is produced from the incomplete combustion of fossil fuels and biomass burning, particularly from older diesel engines and forest fires. Black carbon warms the atmosphere by absorbing solar radiation, influences cloud formation, and darkens the surface of snow and ice, which accelerates heat absorption and melting. Diesel particulate matter emissions are a major source of black carbon and are also toxic air contaminants that have been regulated and controlled in California for several decades in order to protect public health.

Fluorinated gases (F-gases) are the fastest growing source of greenhouse gas emissions in California and globally. They include ozone-depleting substances that are being phased out globally under the Montreal Protocol, and their primary substitute, hydrofluorocarbons (HFCs). Most F-gas emissions come from leaks of these gases in refrigeration and air-conditioning systems. Emissions also come from aerosol propellants, fire suppressants, and foam-expansion agents.

Methane (CH_4) is the principal component of natural gas. Its emissions contribute to background ozone in the lower atmosphere (troposphere), which itself is a powerful greenhouse gas and contributes to ground level air pollution. The atmospheric concentration of methane is growing as a result of human activities in the agricultural, waste treatment, and oil and gas sectors. Capturing methane from these sources can improve pipeline safety, and provide fuel for vehicles and industrial operations that displaces fossil natural gas use.

4.1.2 Federal

In 2007 the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act, and the EPA Endangerment Findings concluded the elements CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6 threatened public health for both current and future generations. Since, 04 CFR Part 98 has been amended to require collection of GHG data to inform future policy decision. Additional Federal actions have included the implementation of

standards for vehicles, biofuel production, and power generation. Federal actions relating to GHG emissions are summarized in Appendix E, Table E.2.

4.1.3 State

The following tables were copied from the California government website for climate change (climatechange.ca.gov) and California Air Resources Board (ww2.arb.ca.gov) and list the California legislation (Table 35), regulations, (Table 36), and executive orders (Table 37) through the end of 2022. More recent developments are discussed immediately following the tables.

Table 35 California Climate Change Legislation

Date	Legislation	Description
September 16, 2022	Assembly Bill 1279 (Muratsuchi, Chapter 337, Statutes of 2022)	The California Climate Crisis Act AB 1279 establishes the policy of the state to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045 statewide anthropogenic GHG emissions are reduced at least 85 percent below 1990 levels. The bill requires CARB to ensure that Scoping Plan updates identify and recommend measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable CO_2 removal solutions and carbon capture, utilization, and storage (CCUS) technologies.
September 16, 2022	Senate Bill 905 (Caballero, Chapter 359, Statutes of 2022)	Carbon Capture, Removal, Utilization, and Storage Program SB 905 requires CARB to create the Carbon Capture, Removal, Utilization, and Storage Program to evaluate, demonstrate, and regulate CCUS and carbon dioxide removal (CDR) projects and technology. The bill requires CARB, on or before January 1, 2025, to adopt regulations creating a unified state permitting application for approval of CCUS and CDR projects. The bill also requires the Secretary of the Natural Resources Agency to publish a framework for governing agreements for two or more tracts of land overlying the same geologic storage reservoir for the purposes of a carbon sequestration project.
September 2, 2022	Senate Bill 846 (Dodd, Chapter 239, Statutes of 2022)	Diablo Canyon Powerplant: Extension of Operations SB 846 extends the Diablo Canyon Power Plant's sunset date by up to five additional years for each of its two units and seeks to make the nuclear power plant eligible for federal loans. The bill requires that the California Public Utilities Commission (CPUC) not include and disallow a load-serving entity from including in their adopted resource plan, the energy, capacity, or any attribute from the Diablo Canyon power plant.

Date	Legislation	Description
September 16, 2022	Senate Bill 1020 (Laird, Chapter 361, Statutes of 2022)	Clean Energy, Jobs, and Affordability Act of 2022 SB 1020 adds interim renewable energy and zero carbon energy retail sales of electricity targets to California end-use customers set at 90 percent in 2035 and 95 percent in 2040. It accelerates the timeline required to have 100 percent renewable energy and zero carbon energy procured to serve state agencies from the original target year of 2045 to 2035. This bill requires each state agency to individually achieve the 100 percent goal by 2035 with specified requirements. This bill requires the CPUC, California Energy Commission (CEC), and CARB, on or before December 1, 2023, and annually thereafter, to issue a joint reliability progress report that reviews system and local reliability. The bill also modifies the requirement for CARB to hold a portion of its Scoping Plan workshops in regions of the state with the most significant exposure to air pollutants by further specifying that this includes communities with minority populations or low-income communities in areas designated as being in extreme federal non-attainment.
September 16, 2022	Senate Bill 1137 (Gonzales, Chapter 365, Statutes of 2022)	Oil & Gas Operations: Location Restrictions: Notice of Intention: Health protection zone: Sensitive receptors SB 1137 prohibits the development of new oil and gas wells or infrastructure in health protection zones, as defined, except for purposes of public health and safety or other limited exceptions. The bill requires operators of existing oil and gas wells or infrastructure within health protection zones to undertake specified monitoring, public notice, and nuisance requirements. The bill requires CARB to consult and concur with the California Geologic Energy Management Division (CalGEM) on leak detection and repair plans for these facilities, adopt regulations as necessary to implement emission detection system standards, and collaborate with CalGEM on public access to emissions detection data.

Date	Legislation	Description
September 16, 2022	Senate Bill 1075 (Skinner, Chapter 363, Statutes of 2022)	Hydrogen: Green Hydrogen: Emissions of Greenhouse Gases SB 1075 requires CARB, by June 1, 2024, to prepare an evaluation that includes: policy recommendations regarding the use of hydrogen, and specifically the use of green hydrogen, in California; a description of strategies supporting hydrogen infrastructure, including identifying policies that promote the reduction of GHGs and short-lived climate pollutants; a description of other forms of hydrogen to achieve emission reductions; an analysis of curtailed electricity; an estimate of GHG and emission reductions that could be achieved through deployment of green hydrogen through a variety of scenarios; an analysis of the potential for opportunities to integrate hydrogen production and applications with drinking water supply treatment needs; policy recommendations for regulatory and permitting processes associated with transmitting and distributing hydrogen from production sites to end uses; an analysis of the life-cycle GHG emissions from various forms of hydrogen production; and an analysis of air pollution and other environmental impacts from hydrogen distribution and end uses.
September 16, 2022	Assembly Bill 1757 (Garcia, Chapter 341, Statutes of 2022)	California Global Warming Solutions Act of 2006: Climate Goal: Natural and Working Lands AB 1757 requires the California Natural Resources Agency (CNRA), in collaboration with CARB, other state agencies, and an expert advisory committee, to determine a range of targets for natural carbon sequestration, and for nature-based climate solutions, that reduce GHG emissions in 2030, 2038, and 2045 by January 1, 2024. These targets must support state goals to achieve carbon neutrality and foster climate adaptation and resilience. This bill also requires CARB to develop standard methods for state agencies to consistently track GHG emissions and reductions, carbon sequestration, and additional benefits from natural and working lands over time. These methods will account for GHG emissions reductions of CO_2, methane, and nitrous oxide related to natural and working lands and the potential impacts of climate change on the ability to reduce GHG emissions and sequester carbon from natural and working lands, where feasible.
September 30, 2022	Senate Bill 1206 (Skinner, Chapter 884, Statutes of 2022)	Hydrofluorocarbon gases: sale or distribution SB 1206 mandates a stepped sales prohibition on newly produced high-global warming potential (GWP) HFCs to transition California's economy toward recycled and reclaimed HFCs for servicing existing HFC-based equipment. Additionally, SB 1206 also requires CARB to develop regulations to increase the adoption of very low-, i.e., GWP < 10, and no-GWP technologies in sectors that currently rely on higher-GWP HFCs.

Date	Legislation	Description
September 23, 2021	Senate Bill 27 (Skinner, Chapter 237, Statutes of 2021)	Carbon Sequestration: State Goals: Natural and Working Lands: Registry of Projects SB 27 requires CNRA, in coordination with other state agencies, to establish the Natural and Working Lands Climate Smart Strategy by July 1, 2023. This bill also requires CARB to establish specified CO_2 removal targets for 2030 and beyond as part of its Scoping Plan. Under SB 27, CNRA is to establish and maintain a registry to identify projects in the state 48 that drive climate action on natural and working lands and are seeking funding. CNRA also must track carbon removal and GHG emission reduction benefits derived from projects funded through the registry. This bill is reflected directly in this Scoping Plan as CO_2 removal targets for 2030 and 2045 in support of carbon neutrality.
September 23, 2021	Senate Bill 596 (Becker, Chapter 246, Statutes of 2021)	Greenhouse Gases: Cement Sector: Net zero Emissions Strategy SB 596 requires CARB, by July 1, 2023, to develop a comprehensive strategy for the state's cement sector to achieve net-zero-emissions of GHGs associated with cement used within the state as soon as possible, but no later than December 31, 2045. The bill establishes an interim target of 40 percent below the 2019 average GHG intensity of cement by December 31, 2035. Under SB 596, CARB must: • Define a metric for GHG intensity and establish a baseline from which to measure GHG intensity reductions. • Evaluate the feasibility of the 2035 interim target (40 percent reduction in GHG intensity) by July 1, 2028. • Coordinate and consult with other state agencies. • Prioritize actions that leverage state and federal incentives. • Evaluate measures to support market demand and financial incentives to encourage the production and use of cement with low GHG intensity.

Date	Legislation	Description
September 27, 2019	Senate Bill 576 (Umberg, Chapter 374, Statutes of 2019)	Coastal Resources: Climate Ready Program and Coastal Climate Change Adaptation, Infrastructure and Readiness Program Sea level rise, combined with storm-driven waves, poses a direct risk to the state's coastal resources, including public and private real property and infrastructure. Rising marine waters threaten sensitive coastal areas, habitats, the survival of threatened and endangered species, beaches, other recreation areas, and urban waterfronts. SB 576 mandates that the Ocean Protection Council develop and implement a coastal climate adaptation, infrastructure, and readiness program to improve the climate change resiliency of California's coastal communities, infrastructure, and habitat. This bill also instructs the State Coastal Conservancy to administer the Climate Ready Program, which addresses the impacts and potential impacts of climate change on resources within the conservancy's jurisdiction.
September 27, 2019	Assembly Bill 65 (Petrie-Norris, Chapter 347, Statutes of 2019)	Coastal Protection: Climate Adaption: Project Prioritization: Natural Infrastructure: Local General Plans This bill requires the State Coastal Conservancy, when it allocates any funding appropriated pursuant to the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018, to prioritize projects that use natural infrastructure in coastal communities to help adapt to climate change. The bill requires the conservancy to provide information to the Office of Planning and Research on any projects funded pursuant to the above provision to be considered for inclusion into the clearinghouse for climate adaption information. The bill authorizes the conservancy to provide technical assistance to coastal communities to better assist them with their projects that use natural infrastructure.

Date	Legislation	Description
September 10, 2018	Senate Bill 100 (De León, Chapter 312, Statutes of 2018)	California Renewables Portfolio Standard Program: emissions of greenhouse gases SB 100 mandates that the CPUC, CEC, and CARB plan for 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero carbon resources by December 31, 2045. This bill also updates the state's Renewables Portfolio Standard (RPS) to include the following interim targets: • 44% of retail sales procured from eligible renewable sources by December 31, 2024. • 52% of retail sales procured from eligible renewable sources by December 31, 2027. • 60% of retail sales procured from eligible renewable sources by December 31, 2030. Under SB 100, the CPUC, CEC, and CARB shall use programs under existing laws to achieve 100 percent clean electricity. The statute requires these agencies to issue a joint policy report on SB 100 every four years. The first of these reports was issued in 2021.
September 13, 2018	Assembly Bill 2127 (Ting, Chapter 365, Statutes of 2018)	Electric Vehicle Charging Infrastructure: Assessment This bill requires the CEC, working with CARB and the CPUC, to prepare and biennially update a statewide assessment of the electric vehicle charging infrastructure needed to support the levels of electric vehicle adoption required for the state to meet its goals of putting at least 5 million zero-emission vehicles on California roads by 2030 and of reducing emissions of GHGs to 40% below 1990 levels by 2030. The bill requires the CEC to regularly seek data and input from stakeholders relating to electric vehicle charging infrastructure.
September 21, 2018	Senate Bill 30 (Lara, Chapter 614, Statutes of 2018)	Insurance: Climate Change This bill requires the Insurance Commissioner to convene a working group to identify, assess, and recommend risk transfer market mechanisms that, among other things, promote investment in natural infrastructure to reduce the risks of climate change related to catastrophic events, create incentives for investment in natural infrastructure to reduce risks to communities, and provide mitigation incentives for private investment in natural lands to lessen exposure and reduce climate risks to public safety, property, utilities, and infrastructure. The bill requires the policies recommended to address specified questions.

Date	Legislation	Description
September 20, 2018	Assembly Bill 2061 (Frazier, Chapter 580, Statutes of 2018)	Near-zero-emission and Zero-emission Vehicles Existing state and federal law sets specified limits on the total gross weight imposed on the highway by a vehicle with any group of two or more consecutive axles. Under existing federal law, the maximum gross vehicle weight of that vehicle may not exceed 82,000 pounds. AB 2061 authorizes a near-zero emission vehicle or a zero-emission vehicle to exceed the weight limits on the power unit by up to 2,000 pounds.
July 26, 2017	Assembly Bill 617 (Christina Garcia, Chapter 136, Statutes of 2017)	Companion to Cap-and-Trade Extension Establishes a groundbreaking program to measure and reduce air pollution from mobile and stationary sources at the neighborhood level in the communities most impacted by air pollutants. Requires the Air Resources Board to work closely with local air districts and communities to establish neighborhood air quality monitoring networks and to develop and implement plans to reduce emissions. The focus on community-based air monitoring and emission reductions will provide a national model for enhanced community protection.
July 25, 2017	Assembly Bill 398 (Eduardo Garcia, Chapter 135, Statutes of 2017)	Cap-and-Trade Extension Extends and improves the Cap-and-Trade Program, which will enable the state to meet its 2030 emission reduction goals in the most cost-effective manner. Furthermore, extending the Cap-and-Trade Program will provide billions of dollars in auction proceeds to invest in communities across California.
September 19, 2016	Senate Bill 1383 (Lara, Chapter 395, Statutes of 2016)	Short-lived Climate Pollutants Establishes statewide reduction targets for short-lived climate pollutants.
September 8, 2016	Assembly Bill 197 (Eduardo Garcia, Chapter 250, Statutes of 2016)	Greenhouse gas regulations Prioritizes direct emission reductions from large stationary sources and mobile sources.
September 8, 2016	Senate Bill 32 (Pavley, Chapter 249, Statutes of 2016)	Greenhouse Gas emission reduction target for 2030 Establishes a statewide greenhouse gas (GHG) emission reduction target of 40 percent below 1990 levels by 2030.
October 7, 2015	Senate Bill 350 (De León, Chapter 547, Statutes of 2015)	Clean Energy and Pollution Reduction Act of 2015 Establishes targets to increase retail sales of renewable electricity to 50 percent by 2030 and double the energy efficiency savings in electricity and natural gas end uses by 2030.
September 21, 2014	Senate Bill 605 (Lara, Chapter 523, Statutes of 2014)	Short-lived climate pollutants Requires the State Air Resources Board to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants by January 1, 2016.

Date	Legislation	Description
September 21, 2014	Senate Bill 1275, (De León, Chapter 530, Statutes of 2014)	Charge Ahead California Initiative Establishes a State goal of 1 million zero-emission and near-zero-emission vehicles in service by 2020. Amends the enhanced fleet modernization program to provide a mobility option. Establishes the Charge Ahead California Initiative requiring planning and reporting on vehicle incentive programs, and increasing access to and benefits from zero-emission vehicles for disadvantaged, low-income, and moderate-income communities and consumers.
September 21, 2014	Senate Bill1204 (Lara, Chapter 524, Statutes of 2014)	California Clean Truck, Bus, and Off-Road Vehicle and Equipment Technology Program Creates the California Clean Truck, Bus, and Off-Road Vehicle and Equipment Technology Program funded by the Greenhouse Gas Reduction Fund for development, demonstration, precommercial pilot, and early commercial deployment of zero- and near-zero emission truck, bus, and off-road vehicle and equipment technologies, with priority given to projects benefiting disadvantaged communities.
September 28, 2013	Assembly Bill 8 (Perea, Chapter 401, Statutes of 2013)	Alternative fuel and vehicle technologies: funding programs Extends until January 1, 2024, extra fees on vehicle registrations, boat registrations, and tire sales in order to fund the AB 118, Carl Moyer, and AB 923 programs that support the production, distribution, and sale of alternative fuels and vehicle technologies and air emissions reduction efforts. The bill suspends until 2024 ARB's regulation requiring gasoline refiners to provide hydrogen fueling stations and appropriates up to $220 million, of AB 118 money to create a hydrogen fueling infrastructure in the State.
September 28, 2013	Assembly Bill 1092 (Levine, Chapter 410, Statutes of 2013)	Building standards: electric vehicle charging infrastructure Requires the Building Standards Commission to adopt mandatory building standards for the installation of future electric vehicle charging infrastructure for parking spaces in multifamily dwellings and nonresidential development.
September 30, 2012	Senate Bill 535 (De León, Chapter 830, Statutes of 2012)	Greenhouse Gas Reduction Fund and Disadvantaged Communities Requires the California Environmental Protection Agency to identify disadvantaged communities; requires that 25% of all funds allocated pursuant to an investment plan for the use of moneys collected through a cap-and-trade program be allocated to projects that benefit disadvantaged communities and 10 those 25% be use within disadvantaged communities; and requires the Department of Finance to include a description of how these requirements are fulfilled in an annual report.
September 30, 2012	Assembly Bill 1532 (J. Perez, Chapter 807, Statutes of 2012)	Greenhouse Gas Reduction Fund in the Budget Requires the Department of Finance to develop and submit to the Legislature an investment plan every three years for the use of the Greenhouse Gas Reduction Fund; requires revenue collected pursuant to a market-based compliance mechanism to be appropriated in the Annual Budget Act; requires the department to report annually to the Legislature on the status of projects funded; and specifies that findings issued by the Governor related to "linkage" as part of a market-base compliance mechanism are not subject to judicial review.

Date	Legislation	Description
April 12, 2011	Senate Bill X1-2 (Simitian, Chapter 1, Statutes of 2011)	Governor Edmund G. Brown, Jr. signed Senate Bill X1-2 into law to codify the ambitious 33 percent by 2020 goal. SBX1-2 directs California Public Utilities Commission's Renewable Energy Resources Program to increase the amount of electricity generated from eligible renewable energy resources per year to an amount that equals at least 20% of the total electricity sold to retail customers in California per year by December 31, 2013, 25% by December 31, 2016 and 33% by December 31, 2020. The new RPS goals applies to all electricity retailers in the State including publicly owned utilities (POUs), investor-owned utilities, electricity service providers, and community choice aggregators. This new RPS preempts the California Air Resources Boards' 33 percent Renewable Electricity Standard.
September 29, 2011	Assembly Bill 1504 (Skinner, Chapter 534, Statutes of 2010)	Forest resources and carbon sequestration. Bill requires Department of Forestry and Fire Protection and Air Resources Board to assess the capacity of its forest and rangeland regulations to meet or exceed the State's greenhouse goals, pursuant to AB 32.
September 30, 2008	Senate Bill 375 (Steinberg, Chapter 728, Statutes of 2008)	Sustainable Communities & Climate Protection Act of 2008 requires Air Resources Board to develop regional greenhouse gas emission reduction targets for passenger vehicles. ARB is to establish targets for 2020 and 2035 for each region covered by one of the State's 18 metropolitan planning organizations. For more information on SB 375, see the ARB Sustainable Communities page (https://ww2.arb.ca.gov/our-work/topics/sustainable-communities).
October 14, 2007	Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007)	Alternative Fuels and Vehicles Technologies The bill would create the Alternative and Renewable Fuel and Vehicle Technology Program, to be administered by the Energy Commission, to provide funding to public projects to develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the State's climate change policies.
August 24, 2007	Senate Bill 97 (Dutton, Chapter 187, Statutes of 2007)	Directs Governor's Office of Planning and Research to develop CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions." For more information see the OPR CEQA and Climate Change page (https://lci.ca.gov/ceqa/ceqa-climate-change.html).
July 18. 2006	Assembly Bill 1803 (Committee on Budget, Chapter 77, Statutes of 2006)	Greenhouse gas inventory transferred to Air Resources Board from the Energy Commission.
August 21, 2006	Senate Bill 1 (Murray, Chapter 132, Statutes of 2006)	California's Million Solar Roofs plan is enhanced by PUC and CEC's adoption of the California Solar Initiative. SB1 directs PUC and CEC to expand this program to more customers, and requiring the State's municipal utilities to create their own solar rebate programs. This bill would require beginning January 1, 2011, a seller of new homes to offer the option of a solar energy system to all customers negotiating to purchase a new home constructed on land meeting certain criteria and to disclose certain information.

Date	Legislation	Description
September 26, 2006	Senate Bill 107 (Simitian, Chapter 464, Statutes of 2006)	SB 107 directs California Public Utilities Commission's Renewable Energy Resources Program to increase the amount of renewable electricity (Renewable Portfolio Standard) generated per year, from 17% to an amount that equals at least 20% of the total electricity sold to retail customers in California per year by December 31, 2010.
September 27, 2006	Assembly Bill 32 (Núñez, Chapter 488, Statutes of 2006)	California Global Warming Solutions Act of 2006. This bill would require Air Resources Board (ARB) to adopt a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions levels in 1990 to be achieved by 2020. ARB shall adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this program. AB 32 directs Climate Action Team established by the Governor to coordinate the efforts set forth under Executive Order S-3-05 to continue its role in coordinating overall climate policy. See more information on AB 32 at ARB (https://ww2.arb.ca.gov/resources/fact-sheets/ab-32-global-warming-solutions-act-2006).
September 12, 2002	Senate Bill 1078 (Sher, Chapter 516, Statutes of 2002)	This bill establishes the California Renewables Portfolio Standard Program, which requires electric utilities and other entities under the jurisdiction of the California Public Utilities Commission to meet 20% of their renewable power by December 31, 2017 for the purposes of increasing the diversity, reliability, public health and environmental benefits of the energy mix.
September 7, 2002	Senate Bill 812 (Sher, Chapter 423, Statutes of 2002)	This bill added forest management practices to the California Climate Action Registry members' reportable emissions actions and directed the Registry to adopt forestry procedures and protocols to monitor, estimate, calculate, report and certify carbon stores and carbon dioxide emissions that resulted from the conservation-based management of forests in California.
July 22, 2002	Assembly Bill 1493 (Pavley, Chapter 200, Statutes of 2002)	The "Pavley" bill requires the registry, in consultation with ARB, to adopt procedures and protocols for the reporting and certification of reductions in greenhouse gas emissions from mobile sources for use by the ARB in granting the emission reduction credits. This bill requires the ARB to develop and adopt, by January 1, 2005, regulations that achieve the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks. For more information on AB 1493 Pavley I, see the ARB Clean Car Standards page (https://ww2.arb.ca.gov/californias-greenhouse-gas-vehicle-emission-standards-under-assembly-bill-1493-2002-pavley).
October 11, 2001	Senate Bill 527 (Sher, Chapter 769, Statutes of 2001)	This bill revises the functions and duties of the California Climate Action Registry and requires the Registry, in coordination with CEC to adopt third-party verification metrics, developing GHG emissions protocols and qualifying third-party organizations to provide technical assistance and certification of emissions baselines and inventories. SB 527 amended SB 1771 to emphasize third-party verification.

Date	Legislation	Description
September 30, 2000	Senate Bill 1771 (Sher, Chapter 1018, Statutes of 2000)	SB 1771 establishes the creation of the non-profit organization, the California Climate Action Registry and specifies functions and responsibilities to develop a process to identify and qualify third-party organizations approved to provide technical assistance and advice in monitoring greenhouse gas emissions, and setting greenhouse gas (GHG) emissions baselines in coordination with CEC. Also, the bill directs the Registry to enable participating entities to voluntarily record their annual GHG emissions inventories. Also, SB 1771 directs CEC to update the State's greenhouse gas inventory from an existing 1998 report and continuing to update it every five years.
September 28, 1988	Assembly Bill 4420 (Sher, Chapter 1506, Statutes of 1988)	The California Energy Commission (CEC) was statutorily directed to prepare and maintain the inventory of greenhouse gas emissions (GHG) and to study the effects of GHGs and the climate change impacts on the State's energy supply and demand, economy, environment, agriculture, and water supplies. The study also required recommendations for avoiding, reducing, and addressing related impacts - and required the CEC to coordinate the study and any research with federal, state, academic, and industry research projects.

Source: (climatechange.ca.gov, 2017) (CARB, 2022 Scoping Plan for Achieving Carbon neutrality, 2022) Up to date as of 1/7/2026.

Table 36 California Climate Change Regulations

Regulations	Description
Greenhouse Gas Reduction Fund	State program allocating proceeds from cap-and-trade auctions to support investments and projects that reduce greenhouse gas emissions throughout California.
General Plan Guidelines Update	The update addresses greenhouse gas emissions in CEQA or a Climate Action Plan. The update contains a new chapter on Climate Change. The Safety Element requires adaptation.
Cap & Trade Amendments	The September 2016 amendments to the cap-and-trade regulation included: Emission caps for the post-2020 program Post-2020 continuation of the allowance price containment reserve Linking with Ontario's cap-and-trade program Compliance with the federal Clean Power Plan Modifications to allowance allocation
Low Carbon Fuel Standard (LCFS)	In September 2015, the Air Resources Board re-adopted the Low Carbon Fuel Standard, to settle issues arising from lawsuits. The requirement is still a 10 percent reduction in the carbon intensity of transportation fuels. The regulations are designed to reduce the carbon intensity (CI) of transportation fuels used in California by at least 10 percent by the year 2020. The Air Resources Board approved the LCFS regulation for adoption on April 23, 2009. The regulation entered into full effect on April 15, 2010. Amendments were approved in 2011, 2019, 2024, 2025 and 2026.

Regulations	Description
Cap & Trade Offset Protocols	The Air Resources Board has adopted five protocols for offset compliance projects. In addition to the original four protocols adopted in 2011, ARB has adopted: Mine Methane Capture (MMC) Projects Compliance Offset Protocol, adopted April 2014 (https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2013/capandtrade13/ctmmcprotocol.pdf)
Cap & Trade Link with Quebec	California linked its cap-and-trade program with Quebec's program in January 2014. Linkage allows for the use of compliance instruments from Quebec's greenhouse gas emission trading system to meet compliance obligations pursuant to the California Cap-and-Trade Regulation, and the reciprocal approval of compliance instruments issued by California to meet compliance obligations in the external trading program.
Building Energy Efficiency Standards	The Energy Commission's 2013 Building Energy Efficiency Standards are 25 percent more efficient than previous standards for residential construction and 30 percent better for nonresidential construction. The Standards, which took effect on January 1, 2014, offer builders better windows, insulation, lighting, ventilation systems and other features that reduce energy consumption in homes and businesses.
Advanced Clean Cars Standard	The Advanced Clean Cars Program, approved in January 2012, will achieve additional GHG reductions from passenger vehicles for model years 2017-2025. This Program represents a new approach to passenger vehicles – cars and light trucks -- by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards known as Low Emission Vehicles (LEV) III. The new approach also includes efforts under the Zero-Emission Vehicle Program to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California.
Water Appliance Standards	The Energy Commission's 2015 Water Appliance Standards are projected to save 10 billion gallons in the first year, increasing over time to 100 billion gallons of water per year. The energy efficiency and water standards require water appliances to consume less water thereby using less energy while performing the same function. The standards apply to: toilets and urinals; residential lavatory faucets; kitchen faucets; public lavatory faucets.
Cap & Trade Rulemaking Activities	A proposed California cap on greenhouse gas emissions and a market-based compliance mechanisms, including compliance offset protocols. OAL approved the rulemaking and filed it with the Secretary of State on December 13, 2011. The regulation will become effective on the January 1, 2012.
33% Renewable Portfolio Standard	On May 5, 2011, the Commission adopted the Order Instituting Rulemaking (R.) 11-05-005 to open a new proceeding for the implementation and administration of the 33% RPS Program. The primary focus of the R.11-05-005 proceeding was the implementation of the new 33% RPS law, Senate Bill (SB) 2 (1X) (Simitian), stats. 2011.
Mandatory Commercial Recycling	This regulation addresses recycling requirements for businesses that generate 4 or more cubic yards of commercial solid waste per week and multifamily residential dwellings with 5 or more units, regardless of the amount of waste generated; local jurisdiction requirements for education, outreach, monitoring and reporting; and CalAsphalt and concrete recycling review. The regulations were approved on May 7, 2012.

Source: (Climate Change | California Air Resources Board, 2021).

Table 37 California Climate Change Executive Orders

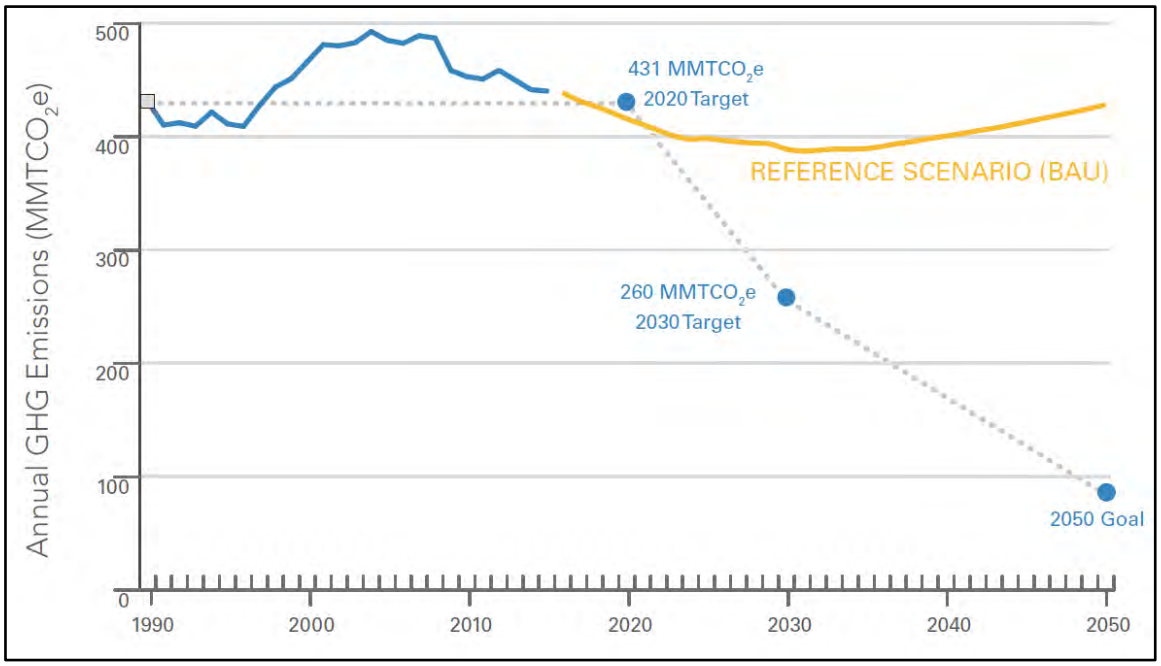
Date	Executive Order	Description
October 7, 2020	N-82-20	Governor Newsom signed Executive Order N-82-20 in October 2020 to combat the climate and biodiversity crises by setting a statewide goal to conserve at least 30 percent of California's land and coastal waters by 2030. The Executive Order also instructed the CNRA, in consultation with other state agencies, to develop a Natural and Working Lands Climate Smart Strategy that serves as a framework to advance the state's carbon neutrality goal and build climate resilience. In addition to setting a statewide conservation goal, the Executive Order directed CARB to update the target for natural and working lands in support of carbon neutrality as part of this Scoping Plan, and to take into consideration the Natural and Working Lands Climate Smart Strategy.
September 23, 2020	N-79-20	EO-N-79-20 requires all California vehicles to be emissions free; cars and passenger trucks by 2035, medium and heavy duty trucks by 2045.
September 20, 2019	N-19-19	Governor Newsom signed Executive Order N-19-19 in September 2019 to direct state government to redouble its efforts to reduce GHG emissions and mitigate the impacts of climate change while building a sustainable, inclusive economy.
September 10, 2018	B-55-18	Governor Brown signed Executive Order B-55-18 in September 2018 to establish a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net negative emissions thereafter.
July 17, 2015	B-32-15	EO-B-32-15 directs State agencies to develop an integrated freight action plan by July 2016. Among other things, the plan calls for targets for transportation efficiency and a transition to near-zero-emission technologies.
April 29, 2015	B-30-15	EO-B-30-15 sets a greenhouse gas (GHG) emissions target for 2030 at 40 percent below 1990 levels.
April 25, 2012	B-18-12	EO-B-18-12 calls for significant reductions in State agencies' energy purchases and GHG emissions. The Executive Order included a Green Building Action Plan, which provided additional details and specific requirements for the implementation of the Executive Order. (https://archive.gov.ca.gov/archive/gov39/wp-content/uploads/2017/09/Green_Building_Action_Plan_B.18.12.pdf)
March 23, 2012	B-16-12	EO-B-16-12 orders State agencies to facilitate the rapid commercialization of zero-emission vehicles (ZEVs). The Executive Order sets a target for the number of 1.5 million ZEVs in California by 2025. Also the Executive Order sets as a target for 2050 a reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels.
November 14, 2008	S-13-08	EO-S-13-08 directs State agencies to plan for sea level rise and climate impacts through coordination of the State Climate Adaptation Strategy.
January 18, 2007	S-01-07	EO-S-01-07 establishes the 2020 target and Low Carbon Fuel Standard. The EO directs the Secretary of Cal/EPA as coordinator of 2020 target activities and requires the Secretary to report back to the Governor and Legislature biannually on progress toward meeting the 2020 target.
October 18, 2006	S-20-06	EO-S-20-06 establishes responsibilities and roles of the Secretary of Cal/EPA and State agencies in climate change.
April 25, 2006	S-06-06	EO-S-06-06 directs Secretary of Cal/EPA to participate in the Bio-Energy Interagency Working Group and addresses biofuels and bioenergy from renewable resources.

Date	Executive Order	Description
June 1, 2005	S-03-05	EO-S-3-05 establishes greenhouse gas emission reduction targets, creates the Climate Action Team and directs the Secretary of Cal/EPA to coordinate efforts with meeting the targets with the heads of other State agencies. The EO requires the Secretary to report back to the Governor and Legislature biannually on progress toward meeting the GHG targets, GHG impacts to California, Mitigation and Adaptation Plans.
December 14, 2004	S-20-04	EO-S-20-04 (Green Buildings) directs State agencies to reduce energy use in State owned buildings by 20% by 2015 and increase energy efficiency.

Source: (climatechange.ca.gov, 2017) (CARB, 2022 Scoping Plan for Achieving Carbon neutrality, 2022) Up to date as of 1/7/2026.

On December 14, 2017, CARB approved the 2017 Climate Change Scoping Plan Update (Scoping Plan) which aims to reduce GHG emissions according to the following graphic. The Scoping Plan "is a package of economically viable and technologically feasible actions to not just keep California on track to achieve its 2030 target, but stay on track for a low- to zero-carbon economy by involving every part of the state. Every sector, every local government, every region, every resident is part of the solution. The Plan underscores that there is no single solution but rather a balanced mix of strategies to achieve the GHG target. This Plan highlights the fact that a balanced mix of strategies provides California with the greatest level of certainty in meeting the target at a low cost while also improving public health, investing in disadvantaged and low-income communities, protecting consumers, and supporting economic growth, jobs and energy diversity. Successful implementation of this Plan relies, in part, on long-term funding plans to inform future appropriations necessary to achieve California's long-term targets." (2017 Scoping Plan, p. ES4).

Chart 1 2030 Target Scoping Plan Reference Scenario



Source: Figure 6 (2017 Scoping Plan, p. 24)

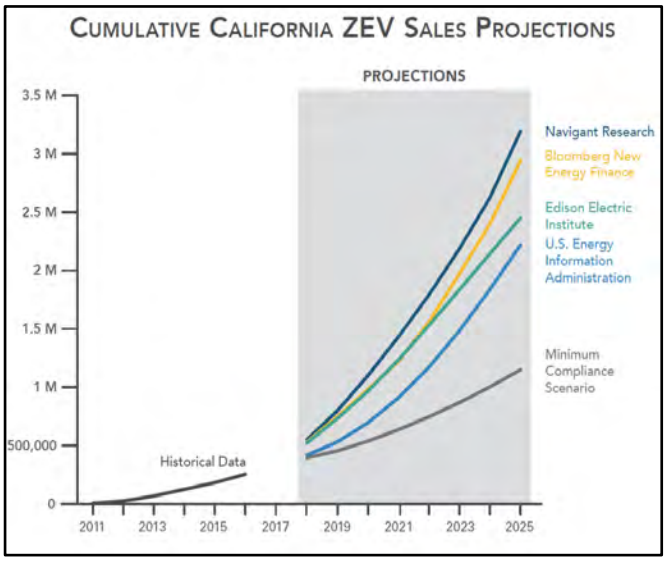
> *The development of the Scoping Plan began by first modeling a Reference Scenario (BAU). The Reference Scenario is the forecasted statewide GHG emissions through 2030 with existing policies and programs, but without any further action to reduce GHGs. [2017 Scoping Plan] Figure 6 [above] provides the modeling results for a Reference Scenario for this Scoping Plan. The graph shows the State is expected to reduce emissions below the 2020 statewide GHG target, but additional effort will be needed to maintain and continue GHG reductions to meet the mid- (2030) and long-term (2050) targets. Figure 6 depicts a linear, straight-line path to the 2030 target. It should be noted that in any year, GHG emissions may be higher or lower than the straight line. That is to be expected as periods of economic recession or increased economic activity, annual variations in hydropower, and many other factors may influence a single or several years of GHG emissions in the State. CARB's annual GHG reporting and inventory will provide data on progress towards achieving the 2030 target.*
> (2017 Scoping Plan, p. 23).

The Scoping Plan states that the California Legislature has shaped the State's climate change program, setting out clear policy objectives over the next decade including:

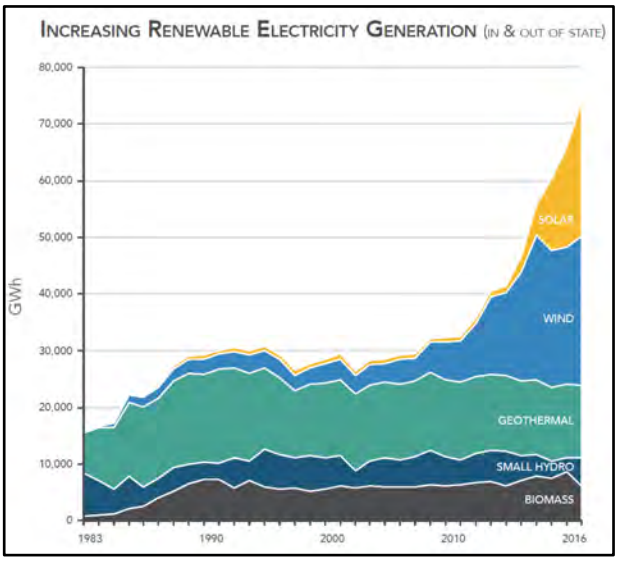
> - *40% reduction in GHG emissions by 2030;*
> - *50% renewable electricity;*
> - *Double energy efficiency savings;*
> - *Support for clean cars;*
> - *Integrate land use, transit, and affordable housing to curb auto trips;*
> - *Prioritize direct reductions;*
> - *Identify air pollution, health, and social benefits of climate policies;*
> - *Slash "super pollutants" (i.e., hydrofluorocarbons or HFCs);*
> - *Protect and manage natural and working lands;*
> - *Invest in disadvantaged communities; and*
> - *Strong support for Cap-and-Trade.*
>
> (2017 Scoping Plan, p. ES6).

Illustrations from the Scoping Plan that pertain to future emissions from the sectors representing the greatest GHG emissions, transportation and electricity use, are reproduced below.

Chart 2 2017 Scoping Plan GHG Exhibits



Source: **(2017 Scoping Plan, p. ES5)**



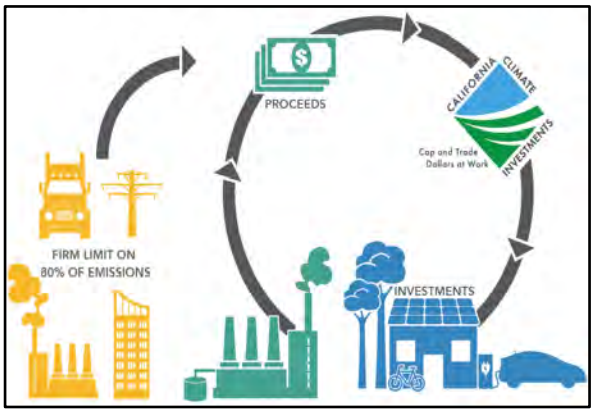
Source: (2017 Scoping Plan, p. ES9)

In addition to technology forcing and incentivizing regulations, the Cap-and-Trade Program is critical to meeting the Scoping Plan objectives. CARB states:

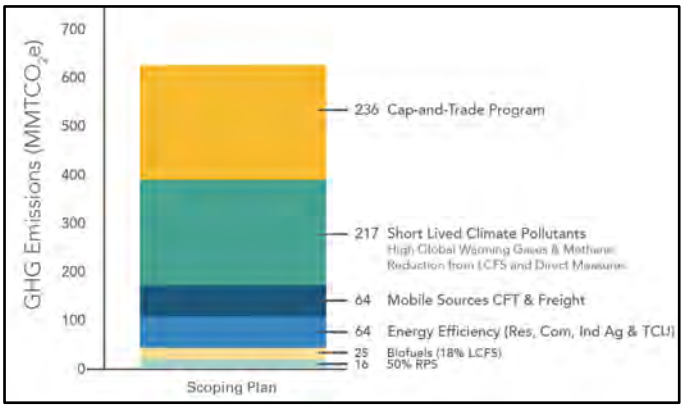
> *The Cap-and-Trade Program is fundamental to meeting California's long-range climate targets at low cost. The Cap-and-Trade Program includes GHG emissions from transportation, electricity, industrial, agricultural, waste, residential and commercial sources, and caps them while complementing the other measures needed to meet the 2030 GHG target. Altogether, the emissions covered by the Cap-and-Trade program total 80 percent of all GHG emissions in California. California's response to climate change has led to many innovative programs designed to reduce GHG emissions, including the Renewable Portfolio and Low Carbon Transportation Standards, but the Cap-and-Trade Program guarantees GHG emissions reductions through a strict overall emissions limit that decreases each year, while trading provides businesses with flexibility in their approach to reducing emissions. The Cap-and-Trade Program also generates revenue when the allowances to emit pollution are auctioned. Some of the revenue is returned directly to electricity ratepayers, and the rest is dedicated to reducing GHG emissions by making Legislatively directed investments in California with an emphasis on programs or projects that benefit disadvantaged and low-income communities.* (2017 Scoping Plan, p. ES16).

The following illustrations presents how CARB believes money will flow from the Cap-and-Trade program to enable state-funded investments and the amount of GHG emissions reduction that will be achieved overall and from Cap-and-Trade which is required to cover the gap between reductions from other measures in the Scoping Plan and the 2030 Target.

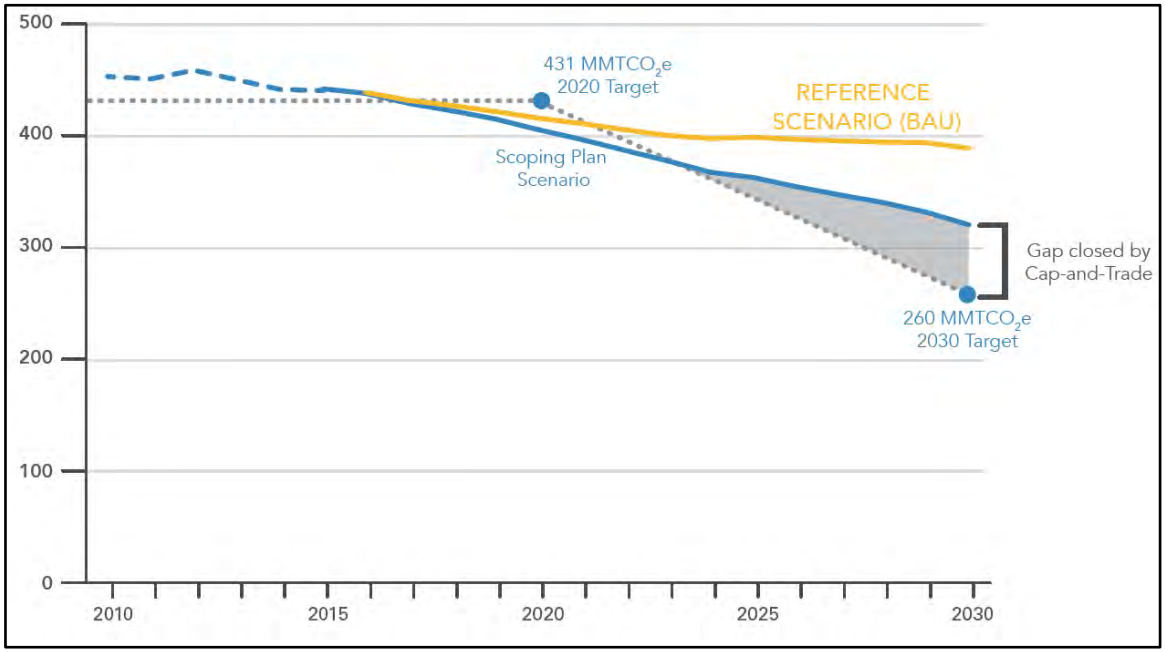
Chart 3 2017 Scoping Plan Cap-and-Trade Exhibits



Source: California's Carbon Pricing and Investment Overview (2017 Scoping Plan, p. ES16).



Source: Scoping Plan Scenario – Estimated Cumulative GHG Reductions by Measure (2021 – 2030) (2017 Scoping Plan, p. 28).



Source: 2017 Scoping Plan Reference Scenario (2017 Scoping Plan, p. 24).

Reference Scenario 2030 emissions estimate of 389 $MMTCO_2e$ to the 2030 target of 260 $MMTCO_2e$ and the level of 2030 emissions with the known commitments, estimated to be 320 $MMTCO_2e$. The known commitments are expected to result in emissions that are 60 $MMTCO_2e$ above the target in 2030, and have a cumulative emissions reduction gap of about 236 $MMTCO_2e$. This means the known commitments do not decline fast enough to achieve the 2030 target. The remaining 236 $MMTCO_2e$ of estimated GHG emissions reductions would not be achieved unless further action is taken to reduce GHGs. Consequently, for the Scoping Plan Scenario, the Post-2020 Cap-and-Trade Program would need to deliver 236 $MMTCO_2e$ cumulative GHG emissions reductions from 2021 through 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

Table 38 Climate Change Policies and Measures, Actions from the 2017 Scoping Plan

Recommended Action	Applies to Project?
Implement SB 350 by 2030: • Increase the Renewables Portfolio Standard to 50 percent of retail sales by 2030 and ensure grid reliability. • Establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030. • Reduce GHG emissions in the electricity sector through the implementation of the above measures and other actions as modeled in IRPs to meet GHG emissions reductions planning targets in the IRP process. Load-serving entities and publicly- owned utilities meet GHG emissions reductions planning targets through a combination of measures as described in IRPs.	No, Project will purchase grid electricity, not administrate it.
Implement Mobile Source Strategy (Cleaner Technology and Fuels): • At least 1.5 million zero emission and plug-in hybrid light-duty electric vehicles by 2025. • At least 4.2 million zero emission and plug-in hybrid light-duty electric vehicles by 2030. • Further increase GHG stringency on all light-duty vehicles beyond existing Advanced Clean Cars regulations. • Medium- and heavy-duty GHG Phase 2. • Innovative Clean Transit: Transition to a suite of to-be-determined innovative clean transit options. Assumed 20 percent of new urban buses purchased beginning in 2018 will be zero emission buses with the penetration of zero-emission technology ramped up to 100 percent of new sales in 2030. Also, new natural gas buses, starting in 2018, and diesel buses, starting in 2020, meet the optional heavy-duty low-NO_X standard. • Last Mile Delivery: New regulation that would result in the use of low NO_X or cleaner engines and the deployment of increasing numbers of zero-emission trucks primarily for class 3-7 last mile delivery trucks in California. This measure assumes ZEVs comprise 2.5 percent of new Class 3–7 truck sales in local fleets starting in 2020, increasing to 10 percent in 2025 and remaining flat through 2030. • Further reduce VMT through continued implementation of SB 375 and regional Sustainable Communities Strategies; forthcoming statewide implementation of SB 743; and potential additional VMT reduction strategies not specified in the Mobile Source Strategy but included in the document “Potential VMT Reduction Strategies for Discussion.”	No, Project vehicles are heavy-heavy duty and were not subject to heavy-duty GHG Phase 1 regulations. Thus, they would be unlikely to be subject to these measures.
Increase stringency of SB 375 Sustainable Communities Strategy (2035 targets).	No, Project does not affect SB 375 targets.
By 2019, adjust performance measures used to select and design transportation facilities. • Harmonize project performance with emissions reductions, and increase competitiveness of transit and active transportation modes (e.g. via guideline documents, funding programs, project selection, etc.).	No, Project does not affect viability of transit or active modes.

Recommended Action	Applies to Project?
By 2019, develop pricing policies to support low-GHG transportation (e.g. low-emission vehicle zones for heavy duty, road user, parking pricing, transit discounts).	No, Project does not affect government pricing policies.
Implement California Sustainable Freight Action Plan: • Improve freight system efficiency. • Deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize both zero and near-zero emission freight vehicles and equipment powered by renewable energy by 2030.	No, Project does not affect whether Freight Action Plan can be implemented.
Adopt a Low Carbon Fuel Standard with a CI reduction of 18 percent.	No, Project does not affect CARB's ability to adopt standards.
Implement the Short-Lived Climate Pollutant Strategy by 2030: • 40 percent reduction in methane and hydrofluorocarbon emissions below 2013 levels. • 50 percent reduction in black carbon emissions below 2013 levels.	No, Project does not affect whether SLCP strategy can be implemented.
By 2019, develop regulations and programs to support organic waste landfill reduction goals in the SLCP and SB 1383.	No, Project does not affect CARB's ability to adopt regulations.
Implement the post-2020 Cap-and-Trade Program with declining annual caps.	No, Project does not affect CARB's ability to implement Cap-and-Trade.
By 2018, develop Integrated Natural and Working Lands Implementation Plan to secure California's land base as a net carbon sink: • Protect land from conversion through conservation easements and other incentives. • Increase the long-term resilience of carbon storage in the land base and enhance sequestration capacity • Utilize wood and agricultural products to increase the amount of carbon stored in the natural and built environments • Establish scenario projections to serve as the foundation for the Implementation Plan	No, Project does not affect ability to develop such a plan.
Establish a carbon accounting framework for natural and working lands as described in SB 859 by 2018.	No, Project does not affect ability to establish such a framework.

Recommended Action	Applies to Project?
Implement Forest Carbon Plan	No, Project does not affect ability to implement such a plan.
Identify and expand funding and financing mechanisms to support GHG reductions across all sectors.	No, Project does not affect whether CARB can identify and expand funding.

Source: (CARB, 2017, pp. 103-104).

Table 39 shows the amount of change in GHG emissions by Scoping Plan sector. Note that Project sources mainly fall into the electric power and transportation sectors with exception of the portable generator which would be in the industrial sector but is likely to be owned and operated by a contractor.

Table 39 Estimated Change in GHG Emissions by Sector

Scoping Plan Category	1990 ($MMTCO_2e$)	2030 Scoping Plan Ranges ($MMTCO_2e$)
Agriculture	26	24–25
Residential and Commercial	44	38–40
Electric Power	108	30–53
High GWP	3	8–11
Industrial	98	83–90
Recycling and Waste	7	8–9
Transportation (Including TCU)	152	103–111
Natural Working Lands Net Sink*	-7***	TBD
Sub Total	431	294–339
Cap-and-Trade Program	n/a	34–79
Total	**431**	**260**

Source: (2017 Scoping Plan, p. 31).

* Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.

** The SLCP will reduce emissions in this sector by 40 percent from 2013 levels. However, the 2030 levels are still higher than the 1990 levels as emissions in this sector have grown between 1990 and 2013.

*** This number reflects net results and is different than the intervention targets discussed in Chapter 4.

The 2022 Scoping plan outlines updates that build on the successes of the previous 2017 Scoping Plan. As the updated plan notes, “Meeting the AB 32 2020 GHG emissions reduction target several years earlier than mandated demonstrated that developing mitigation strategies through a public process, where all

stakeholders have a voice, leads to effective actions that address climate change and yields a series of additional economic and environmental co-benefits to the state."

The relationship between Statewide and local action is a major topic of the 2022 Scoping Plan. "When a local CAP complies with CEQA requirements, individual projects that comply with the CAP are allowed to streamline the project-specific GHG analysis… Jurisdictions without formal CAPs also have important opportunities within this context. These jurisdictions can still take actions that effectively translate key State plans, goals, and targets, including those articulated in this Scoping Plan for local action."

The proposed plan emphasizes that lead agencies are tasked with a large part of the CEQA process when it comes to GHG emissions but are able to use State priorities as a guide. "One challenge local jurisdictions have faced is how to evaluate and adopt quantitative, locally appropriate goals that align with statewide goals. An effective response to this challenge is to focus on goals that can help implement overall State priorities—enabling the key transformations California needs."

It is also clear that the scoping plan places authority with the lead agency with regards to GHG emissions and mitigation, stating, "When a lead agency determines that a proposed project would result in potentially significant GHG impacts due to its GHG emissions or a conflict with State climate goals, the lead agency must impose feasible mitigation measures to minimize the impact." The 2022 Scoping Plan Update assesses progress towards achieving the SB 32 2030 target of a 40% GHG reduction and lay out a path to achieve carbon neutrality by 2045.

The 2022 Scoping Plan integrates ongoing efforts to transition away from fossil fuels by identifying and planning for the phase in of clean technologies and sustainable fuels. This comprehensive plan outlines a technologically feasible and cost-effective path to achieve carbon neutrality by 2045, aligning with California's goal to reduce GHG emissions by at least 40 percent below 1990 levels by 2030. The plan emphasizes the critical importance of the coming decade for transformative action and introduces new strategies, including the consideration of Natural and Working Lands as both emission sources and carbon sinks. It outlines specific actions, evaluates their impact on air quality and the economy, and emphasizes the importance of partnerships to drive investment in a low-carbon economy.

The 2022 Scoping Plan involves the following principles which inform the approach to addressing the climate challenge (CARB, 2022):

1. *Unprecedented Investments in a Sustainable Future*

   The California Climate Commitment is an initiative aimed at using investment as a tool to achieve 2030 and carbon neutrality goals. It allocates $10 billion for zero-emission vehicles, focusing on electric school buses and an accessible charging network, emphasizing heavy-duty vehicles and port electrification to reduce emissions in low-income communities. Additionally, it earmarks $2.1 billion for clean energy, $13.8 billion for transportation sector emissions reduction, over $720 million for climate innovation in higher education, nearly $1 billion for sustainable housing, and $9 billion for wildfire risk reduction and resilience. These investments incentivize emission

reduction strategies and align with federal and state programs while ensuring market stability for automakers transitioning to zero-emission vehicles.

2. *Centering Equity*

   The plan aligns with the governor's Executive Order to embed equity considerations, focusing on historically underserved and marginalized communities. The plan emphasizes climate and air initiatives with the focus of prioritizing equity by reducing air pollution disparities, reducing costs for low-income residents, and fostering high-quality jobs. Per AB32, the development of the Scoping plan involves the convening of an Environmental Justice Advisory Committee comprised of representatives from communities with the most significant exposure to air pollution, including communities with minority populations and/or low-income populations. Moreover, the Plan reaffirms a commitment to partnering with the 109 federally recognized tribes and over 60 non-federally recognized tribes in California. Laws like Senate Bill 535 and AB 1550 guide investments to assist vulnerable communities, further reinforcing the state's commitment to a resilient, just, and equitable future while addressing the climate crisis.

3. *Maximizing Air Quality and Health Benefits*

   The Scoping Plan outlines actions that offer both immediate air quality improvements for communities with the highest exposure to pollution and long-term greenhouse gas (GHG) benefits. Many of these actions align with the 2022 State Strategy for the State Implementation Plan, which focuses on meeting federal air quality standards and reducing harmful air pollution.

4. *Economic Resilience*

   The State is investing in workforce training and supporting workers transitioning from fossil fuel industries. A $1 billion investment aims to create new jobs and assist communities during this transition. The Community Economic Resilience Fund Program focuses on sustainable job creation. To ensure a smooth shift, ongoing dialogue with workers and affected communities is a priority. Additionally, California is updating funding guidelines to reinforce job creation and workforce development within clean energy through Assembly Bill 680.

5. *Partnering Across Government*

   The federal government's Inflation Reduction Act of 2022 allocates $369 billion to bolster domestic energy production and manufacturing, with an expected 40 percent reduction in U.S. greenhouse gas emissions by 2030. This legislation includes incentives for clean vehicles, ENERGY STAR appliances, and enhancements in transportation and clean energy accessibility for underserved communities. State agencies are encouraged to use the Scoping Plan to assess and update their own programs and policies to align with the identified actions.

6. *Partnering with the Private Sector*

   The plan emphasizes that Public funds and clear policies should drive private-sector efforts in emissions reduction and community resilience. Governor Newsom aims to collaborate with businesses, including small ones, to leverage their innovation and resources in tackling climate challenges. The plan describes public private partnerships such as the Catalyst Fund, which has areas of investment including forest biomass management and utilization, climate-smart

agriculture, and clean energy transmission.

7. *Supporting Innovation*

   The plan outlines the need for innovation in non-combustion technologies, clean energy, CO_2 removal options, and alternatives to short lived climate pollutants. The plan emphasizes the impact of AB32 policies and programs which support both the supply and demand side to build new markets in California, especially in the fields of zero emissions vehicles, low carbon fuels, and small scale energy storage.

8. *Engagement with Partners to Develop, Coordinate, and Export Policies*

   The plan outlines cases in which California has collaborated with other states, tribal governments, the federal government, and international jurisdictions to develop effective strategies for reducing greenhouse gases (GHGs) and to manage GHG control programs. The goal is to create integrated and cost-effective GHG reduction initiatives at regional, national, and international levels.

9. *Working Toward Carbon Neutrality*

   The 2022 scoping plan has been expanded to include new sources and sinks within the context of achieving carbon neutrality. While natural and working lands have a crucial role in sequestering carbon, modeling indicates that they alone cannot achieve carbon neutrality by 2045. Therefore, the plan also explores the role of carbon capture and sequestration, along with biological and mechanical carbon sequestration processes outlined in the IPCC Sixth Assessment Report.

10. *Supporting Healthy and Resilient Lands*

    The plan focuses on the impact of natural and working lands. Healthy lands, including forests, grasslands, soils, and wetlands, can store carbon dioxide and reduce emissions. The plan addresses the need for climate-smart land management, which promotes healthy ecosystems and supports carbon neutrality, emission reduction, and climate resilience.

11. *Maintaining the Focus on Methane and Short-Lived Climate Pollutants*

    The plan identifies efforts to reduce short-lived climate pollutants (SLCPs) as a crucial part of the plan. SLCPs, such as methane, black carbon, and fluorinated gases (including hydrofluorocarbons or HFCs), are highly detrimental to both human health and the global climate. They have a more potent and immediate impact on climate change than CO_2, despite having a shorter atmospheric lifespan. This makes them significant contributors to near-term climate change and global warming.

Actions identified in the 2022 Scoping plan are outlined in Table 40 below, and Project applicability to each action is determined.

Table 40 Actions for the 2022 Scoping Plan Scenario: AB 32 GHG Inventory Sectors

Sector	Action	Statues, Executive Orders, Other Direction, Outcome	Does the Project Conflict with this element of the Scoping plan?
GHG Emissions Reductions Relative to the SB 32 Target	40% below 1990 levels by 2030	SB 32: Reduce statewide GHG emissions. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory	No, the Project will follow rules and regulations promulgated by SB 32 and AB 197 to reduce statewide GHG emissions.
Smart Growth / Vehicle Miles Traveled (VMT)	VMT per capita reduced 25% below 2019 levels by 2030, and 30% below 2019 levels by 2045	SB 375: Reduce demand for fossil transportation fuels and GHGs, and improve air quality. In response to Board direction and EJ Advisory Committee recommendations	No, the Project will not impact CARB's ability to work with local officials and municipalities to implement GHG reductions as outlined in SB 375.
Light-duty Vehicle (LDV) Zero Emission Vehicles (ZEVs)	100% of LDV sales are ZEV by 2035	EO N-79-20: Reduce demand for fossil transportation fuels and GHGs, and improve air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory 2035 target aligns with the EJ Advisory Committee recommendation.	No, the Project will not impact ZEV sales.
Truck ZEVs	100% of medium-duty (MDV)/HDV sales are ZEV by 2040 (AB 74 University of California Institute of Transportation Studies [ITS] report)	EO N-79-20: Reduce demand for fossil transportation fuels and GHGs, and improve air quality. AB 197: direct emissions reductions for sources	No, the Project will not impact Truck ZEV sales.

Sector	Action	Statues, Executive Orders, Other Direction, Outcome	Does the Project Conflict with this element of the Scoping plan?
		covered by the AB 32 Inventory	
Aviation	20% of aviation fuel demand is met by electricity (batteries) or hydrogen (fuel cells) in 2045. Sustainable aviation fuel meets most or the rest of the aviation fuel demand that has not already transitioned to hydrogen or batteries.	Reduce demand for petroleum aviation fuel and reduce GHGs. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory In response to Governor Newsom's July 2022 letter to CARB Chair Liane Randolph	No, the Project will not affect aviation fuel use.
Ocean-going Vessels (OGV)	2020 OGV At-Berth regulation fully implemented, with most OGVs utilizing shore power by 2027. 25% of OGVs utilize hydrogen fuel cell electric technology by 2045.	Reduce demand for petroleum fuels and GHGs, and improve air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory	No, the Project will not affect ocean going vessels.
Port Operations	100% of cargo handling equipment is zero-emission by 2037. 100% of drayage trucks are zero emission by 2035.	Executive Order N-79-20: Reduce demand for petroleum fuels and GHGs, and improve air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory	No, the Project will not affect port cargo handling GHG emissions.
Freight and Passenger Rail	100% of passenger and other locomotive sales are ZEV by 2030. 100% of line haul locomotive sales are ZEV by 2035. Line haul and passenger rail rely primarily on hydrogen fuel	Reduce demand for petroleum fuels and GHGs, and improve air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory	No, the Project will not impact emissions reductions rules for locomotives.

Sector	Action	Statues, Executive Orders, Other Direction, Outcome	Does the Project Conflict with this element of the Scoping plan?
	cell technology, and others primarily utilize electricity.		
Oil and Gas Extraction	Reduce oil and gas extraction operations in line with petroleum demand by 2045.	Reduce GHGs and improve air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory	No, the Project will not interfere with the State's ability to direct reduce oil and gas extraction via direct emissions reductions.
Petroleum Refining	CCS on majority of operations by 2030, beginning in 2028 Production reduced in line with petroleum demand.	Reduce GHGs and improve air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory	No, the Project will not interfere with the State's regulation of petroleum.
Electricity Generation	Sector GHG target of 38 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) in 2030 and 30 $MMTCO_2e$ in 2035 Retail sales load coverage[134] 20 gigawatts (GW) of offshore wind by 2045 Meet increased demand for electrification without new fossil gas-fired resources.	SB 350 and SB 100: Reduce GHGs and improve air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory In response to Governor Newsom's July 2022 letter, Board direction, and EJ Advisory Committee recommendation	No, the Project will not impact the State's implementation of GHG reductions through electricity generation policies.
New Residential and Commercial Buildings	All electric appliances beginning 2026 (residential) and 2029 (commercial), contributing to 6 million heat pumps installed statewide by 2030	Reduce demand for fossil gas and GHGs, and improve ambient and indoor air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory	No, the Project is not a new residential or commercial building.

Sector	Action	Statues, Executive Orders, Other Direction, Outcome	Does the Project Conflict with this element of the Scoping plan?
		In response to Governor Newsom's July 2022 letter	
Existing Residential Buildings	80% of appliance sales are electric by 2030 and 100% of appliance sales are electric by 2035. Appliances are replaced at end of life such that by 2030 there are 3 million all-electric and electric-ready homes—and by 2035, 7 million homes—as well as contributing to 6 million heat pumps installed statewide by 2030.	Reduce demand for fossil gas and GHGs, and improve ambient and indoor air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory. In response to Governor Newsom's July 2022 letter	No, the Project is not a Residential building.
Existing Commercial Buildings	80% of appliance sales are electric by 2030, and 100% of appliance sales are electric by 2045. Appliances are replaced at end of life, contributing to 6 million heat pumps installed statewide by 2030.	Reduce demand for fossil gas and GHGs, and improve ambient and indoor air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory In response to Governor Newsom's July 2022 letter	No, the Project will comply with rules, regulations, or laws promulgated under AB 197 if applicable, and will not conflict with the State's ability to enact appliance sales mandates.
Food Products	7.5% of energy demand electrified directly and/or indirectly by 2030; 75% by 2045	Reduce demand for fossil gas and GHGs, and improve air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory	No, the Project will comply with rules, regulations, or laws promulgated under AB 197 if applicable.
Construction Equipment	25% of energy demand electrified by 2030 and 75% electrified by 2045	Reduce demand for fossil energy and GHGs, and improve air quality. AB 197: direct emissions reductions for sources	No, the Project will comply with rules, regulations, or laws promulgated under AB 197 if applicable.

Sector	Action	Statues, Executive Orders, Other Direction, Outcome	Does the Project Conflict with this element of the Scoping plan?
		covered by the AB 32 Inventory	
Chemicals and Allied Products; Pulp and Paper	Electrify 0% of boilers by 2030 and 100% of boilers by 2045. Hydrogen for 25% of process heat by 2035 and 100% by 2045. Electrify 100% of other energy demand by 2045.	Reduce demand for fossil energy and GHGs, and improve air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory	No, the Project will comply with rules, regulations, or laws promulgated under AB 197 if applicable.
Stone, Clay, Glass, and Cement	Carbon capture storage ("CCS") on 40% of operations by 2035 and on all facilities by 2045 Process emissions reduced through alternative materials and CCS	SB 596: Reduce demand for fossil energy, process emissions, and GHGs, and improve air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory	No, the Project will comply with rules, regulations, or laws promulgated under AB 197 if applicable.
Other Industrial Manufacturing	0% energy demand electrified by 2030 and 50% by 2045	Reduce demand for fossil energy and GHGs, and improve air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory	No, the Project will comply with rules, regulations, or laws promulgated under AB 197 if applicable.
Combined Heat and Power	Facilities retire by 2040.	Reduce demand for fossil energy and GHGs, and improve air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory	No, the Project will comply with rules, regulations, or laws promulgated under AB 197 if applicable.
Agriculture Energy Use	25% energy demand electrified by 2030 and 75% by 2045	Reduce demand for fossil energy and GHGs, and improve air quality. AB 197: direct emissions reductions	No, the Project will comply with rules, regulations, or laws promulgated under AB 197 if applicable.

Sector	Action	Statues, Executive Orders, Other Direction, Outcome	Does the Project Conflict with this element of the Scoping plan?
Low Carbon Fuels for Transportation	Biomass supply is used to produce conventional and advanced biofuels, as well as hydrogen.	Reduce demand for petroleum fuel and GHGs, and improve air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory	No, the Project will comply with rules, regulations, or laws promulgated under AB 197 if applicable.
Low Carbon Fuels for Buildings and Industry	In 2030s biomethane[135] blended in pipeline Renewable hydrogen blended in fossil gas pipeline at 7% energy (~20% by volume), ramping up between 2030 and 2040. In 2030s, dedicated hydrogen pipelines constructed to serve certain industrial clusters	Reduce demand for fossil energy and GHGs, and improve air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory	No, the Project will comply with rules, regulations, or laws promulgated under AB 197 if applicable.
Non-combustion Methane Emissions	Increase landfill and dairy digester methane capture. Some alternative manure management deployed for smaller dairies. Moderate adoption of enteric strategies by 2030. Divert 75% of organic waste from landfills by 2025. Oil and gas fugitive methane emissions reduced 50% by 2030 and further reductions as infrastructure components retire in line with reduced fossil gas demand.	SB 1383: Reduce short-lived climate pollutants.	No, the Project does not emit non-combustion methane.
High GWP Potential Emissions	Low GWP refrigerants introduced as building electrification increases, mitigating HFC emissions	SB 1383: Reduce short-lived climate pollutants.	No, the Project will comply with rules, regulations, or laws

Sector	Action	Statues, Executive Orders, Other Direction, Outcome	Does the Project Conflict with this element of the Scoping plan?
			promulgated under SB1383 if applicable

4.1.4 San Joaquin Valley Air Pollution Control District

SJVAPCD document, *District Policy Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency* (SJVAPCD, 2009) outlines a methodology to determine if a project meets the Best Performance Standards (BPS) for GHG emissions. The SJVAPCD document states, "Projects implementing BPS would be determined to have a less than significant individual and cumulative impact on global climate change and would not require project specific quantification of GHG emissions". When serving as the lead agency, the SJVAPCD requires stationary sources that do not comport with a BPS to demonstrate GHG reductions of 29% as compared to Business-as-Usual. Business-as-Usual is defined by the SJVAPCD as "The emissions for a type of equipment or operation within an identified class and category projected for the year 2020, assuming no change in GHG emissions per unit of activity as established for the baseline period". This policy, however, is outdated and is not applicable to the Project.

CARB regulations adopted in 2010 established a cap-and-trade program for the largest sources of GHG emissions in the State. Included in cap-and-trade are electrical power and fuels that are utilized by the Project. This is explicitly outlined in the more recent SJVAPCD APR 2025 (June 2014) which states the following:

> *… all GHG emission increases resulting from the combustion of any fuel produced, imported, and/or delivered in California are mitigated under Cap-and-Trade… Therefore, GHG emission increases caused by fuel use (other than jet fuels) are determined to have a less than significant impact on global climate change under CEQA.*

In practice, projects in the SJVAPCD sometimes uses the South Coast Air Quality Management District (SCAQMD) 10,000 $MTCO_2e$/yr threshold. For example, the recent environmental impact report for the McKay Point Reservoir Project in Tulare County (Tulare Irrigation District, 2024) compares Project emissions to the threshold of 10,000 $MTCO_2e$/yr, consistent with SCAQMD policy presented in Table 36. Under CEQA, Fresno County as the lead agency has similarly decided to use 10,000 $MTCO_2e$/yr as the threshold of significance for GHG for this Project. Such lead agency threshold choice is permissible under CEQA, *Cuyama Valley v. County of Santa Barbara 213 Cal. App 4th 1059 (2013)*.

4.1.5 County of Fresno

General Plan

The Fresno County General Plan contains a GHG related goal, Goal HS-G, and 13 policies in support of that goal. The goal itself is listed below. (County of Fresno, 2024)

Fresno County General Plan, Goal HS-G
To improve the sustainability and resilience of the County through continued efforts to reduce the causes of and adapt to climate change.

Priority Climate Action Plan

The Fresno Council of Governments approved the final Priority Climate Action Plan (PCAP) on February 29, 2024, which includes a regional GHG inventory, a public outreach process, identification and quantification of priority GHG emissions reduction measures, a benefit analysis for low-income and disadvantaged communities, and identification of implementation authorities (Fresno Council of Governments, 2024). The PCAP contains a 2019 GHG emissions inventory that quantifies emissions from the following sources:

- Transportation (including on-road, offroad, and aircraft sources);
- Industrial emissions;
- Energy use (residential and commercial);
- Waste and wastewater;
- Agriculture; and
- Fugitive emissions.

The PCAP scope includes both public and private sources within the County. Thus, emissions from Project sources are present in the PCAP inventory. The inventory finds that in Fresno County approximately 13.2 million metric tons (MT) of CO_2e was emitted in 2019, with most emissions coming from the transportation, agriculture, and energy use sectors at 44%, 19%, and 17%, respectively. Of the transportation sector, approximately 40% of the emissions inventory results from on-road sources such as passenger cars and trucks, buses, and delivery vans.

Based on the emissions inventoried, the PCAP identifies the priority GHG reduction measures for each sector and associated GHG emissions reductions that would result from their implementation. Appendix E contains a table describing each GHG reduction measure in the PCAP and discusses why each measure would not apply to the project.

4.2 Environmental Setting

Gases that trap heat in the atmosphere are GHGs, analogous to the way a greenhouse retains heat. Consequently, these GHG emissions are believed to directly affect the global climate.

Climate change refers to global changes in the average weather of the Earth as measured by changes in wind patterns, storms, precipitation, and temperature. While climate change is global in scale, California-specific impacts from predicted changes in the climate may result in a loss of snow-pack, increased risk of large wildfires, and a potential reduction in the quality and quantity of certain agricultural products.

4.2.1 Effects Attributed to GHG Emissions

The Scoping Plan is a living document that is updated every five years. The 2022 Scoping Plan (published December 2022 after the release of this Project's NOP) follows Governor Newsom's call for more aggressive climate measures providing a path to achieve both the 2030 climate goal and state carbon neutrality by 2045

with new efforts to advance offshore wind, clean fuels, climate-friendly homes, carbon removal and addressing methane leaks (CARB, 2022 Scoping Plan for Achieving Carbon neutrality, 2022).

At the time of the release of the Project NOP, the GHG policy document issued by CARB was the 2017 Scoping Plan update published in November 2017 (2017 Scoping Plan) and was summarized above.

4.2.2 Emissions Inventories

CARB's most recent GHG emission inventory, the 2025 Edition, tracks the emissions of seven GHGs identified in the California Health and Safety Code for the years 2000 to 2023. In 2023, total GHG emissions were 360.4 $MMTCO_2e$, a decrease of 11.2 $MMTCO_2e$ (3.0%) compared to 2022. Overall trends in the inventory also continue to demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross state product (GSP)) is declining. From 2000 to 2023, the carbon intensity of California's economy decreased by 56.6% percent while the GSP increased by 81.2%. In 2023, GSP grew 2.1% while the emissions per GSP declined 5.0% from 2022 to 2023. (CARB, GHG Trend Report, 2025)

The transportation sector remains the largest source of GHG emissions in the State, accounting for 37.1% of the inventory. On-road transportation emissions decreased 4.1%, mainly from the reduced use of fossil distillate (27.4%). Emissions from the electricity sector continue to decline due to growing zero-GHG energy generation sources. Emissions from the remaining sectors have remained relatively constant. The industrial sector trend saw a decrease of 3.4 $MMTCO_2e$ compared to 2022. (CARB, GHG Trend Report, 2025)

4.3 Significance Thresholds

The Environmental Checklist Form in Appendix G of the CEQA Guidelines presents questions about projects that, if true for a particular project, would be considered a significant impact. This document considers the following Environmental Checklist Form questions to be the Significance Thresholds for GHG emissions from this Project.

Would the project:

a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

The GHG analysis in the Final EIR was revised, as envisioned by CEQA, to address comments on the Draft EIR by several commenters. In addition, the Draft EIR was released on December 20, 2024 and the comment period closed on March 10, 2025. In the Draft EIR, the GHG analysis relied in part on an analysis used in an EIR certified by Kern County in approving the modification to an oil refinery. That EIR acknowledged that certain GHG emissions related to the consumption of fuel and the use of electricity were offset upstream of those uses pursuant to California's Cap-and-Trade Program. This approach was upheld in a decision by the Fifth District

Court of Appeal, which appellate court has jurisdiction over Fresno County, in *Association of Irritated Residents v. Kern County Board of Supervisors*, 17 Cal.App.5th 798 (2017) ("AIR"). However, on June 26, 2025 a new California appellate case out of Los Angeles County reviewing the use of offsets under the Cap-and-Trade Program as part of an EIR used to evaluate a housing development program was filed by the 2nd District Court of Appeal, *Center for Biological Diversity v. County of Los Angeles*, 112 Cal.App.5th 317 (2025) ("LA County Decision"). The LA County Decision distinguished the AIR Decision on the basis that the refinery subject to the Kern County EIR was a "covered entity" for purposes of the Cap-and-Trade Program, whereas the housing development at issue in the LA County Decision was not a "covered entity" for purposes of the Cap-and-Trade Program. The LA County Decision accordingly held that Los Angeles County could not rely on the fact that transportation fuels and electricity that would be used as part of the project were subject to Cap-and-Trade offsets and allowances as a mitigation measure under CEQA. Since the Project is also not a "covered entity" under the Cap-and-Trade program, in an abundance of caution, Fresno County decided to revise the GHG analysis in the Draft EIR to conform to the more recent LA County Decision. Accordingly, all emissions, including those involving the consumption of fuel and the use of electricity, are included in determining whether total emissions will exceed the GHG significance threshold of 10,000 MTCO2e/yr.

4.4 Methodology

4.4.1 CEQA Baseline

The Baseline was determined based on historical production records for the year 2005 (for more information see Appendix C). Off-road engine GHG emissions factors were determined using CalEEMod 2012 emission factors which are available in Appendix G, Dataset 7. On-road haul truck engine and employee vehicle emissions factors were determined using EMFAC 2018 emissions factors, see Appendix G, Datasets 8 – 13. Asphalt dryer emissions were based on SJVAPCD Standards, see Appendix G, Dataset 14.

Baseline aggregate plant electricity use is calculated below, based on the conservative assumption of a 1,625 hp Baseline aggregates plant (Appendix G). It was assumed that aggregate plants were operated 16 hours per day using grid electricity, which was assumed to emit 641 pounds of CO_2 per megawatt-hour in 2008, based on Pacific Gas and Electric Companies specific electrical utility emission factor provided in CalEEMod's 2016 User's Guide (CalEEMod, CalEEMod Appendix D: Default Data Tables, 2017). This calculation is intentionally conservative, as neither equipment load factor (75%) or electrical motor efficiency (Approximately 85%) are incorporated into the calculation. Excluding these factors results in a higher electricity demand and therefore a higher GHG estimate.

$$1625\ hp * 16\frac{hr}{day} * 312\frac{days}{yr} * 0.00074\frac{MW}{hp} * 641\frac{lb\ CO2E}{MWhr} * \frac{1\ MT}{2204.62\ lb} = 1{,}745\frac{MT\ CO2E}{yr\ Bsln.Plt.Op.}$$

A similar methodology was employed for calculating the baseline ready mix plant electricity use. Based on the maximum annual throughput of the ready mix plant, 189,550 yd^3/yr, the electricity usage could be calculated based on the 2007 study done by the Portland Cement Association titled the Life Cycle Inventory of Portland Cement Concrete (Marceua, NIsbet, & VanGeem, 2007) which provided a representative electricity usage factor for ready mix facilities per unit volume of concrete processed. This calculation is intentionally

conservative, as neither equipment load factor or electrical motor efficiency are incorporated into the calculation. Excluding these factors results in a higher electricity demand and therefore a higher GHG estimate.

$$189{,}550\,\frac{yd^3}{year} * 3.15\,\frac{kWh}{yd^3} * \frac{1\ MWh}{1{,}000\ kWh} * 641\,\frac{lbs\ CO2E}{MWh} * \frac{1\ MT}{2204.62\ lbs} = 174\,\frac{MT\ CO2E}{yr\ Future\ Plt.Op.}$$

Under Baseline conditions, the proposed asphalt plant is not operational. Accordingly, no greenhouse gas emissions from asphalt plant operations would be generated in the Baseline.

4.4.2 Construction Phase

As shown in the CalEEMod results (Appendix F), Project construction would be expected to take place over approximately 10 months and would generate an estimated **197 metric tons of CO2e** per year.

Construction-related greenhouse gas emissions would occur over a short-term period and are, by nature, temporary. Nevertheless, for purposes of evaluating long-term climate change impacts under CEQA, construction emissions are often amortized over the anticipated life of the Project. When amortized over a 30-year Project lifetime, construction emissions would result in an annualized contribution of approximately 6.6 metric tons of CO2e per year.

4.4.3 Operation Phase

Operation Phase aggregate plant electricity use is calculated below, based on a 3,456.5 hp Baseline aggregates plant (Appendix G). It was assumed that aggregate plants were operated 16 hours per day using grid electricity, which was assumed to emit 206 pounds of CO_2 per megawatt-hour in 2021, based on Pacific Gas and Electric Companies specific electrical utility emission factor provided in CalEEMod's 2020 User's Guide (CalEEMod, CalEEMod Appendix D: Default Data Tables, 2021). This calculation is intentionally conservative, as neither equipment load factor (75%) or electrical motor efficiency (Approximately 85%) are incorporated into the calculation. Excluding these factors results in a higher electricity demand and therefore a higher GHG estimate.

$$3456.5\ hp * 16\,\frac{hr}{day} * 312\,\frac{days}{yr} * 0.74\,\frac{kW}{hp} * \frac{1\ MWhr}{1000\ kWhr} * 206\,\frac{lb\ CO2E}{MWhr} * \frac{1\ MT}{2204.62\ lb}$$
$$= 1{,}193\,\frac{MT\ CO2E}{yr\ Future\ Plt.Op.}$$

A similar methodology was employed for calculating the Project ready mix plant electricity use. Based on the maximum annual throughput of the ready mix plant, 300,000 yd^3/yr, the electricity usage could be calculated based on the 2007 study done by the Portland Cement Association titled the Life Cycle Inventory of Portland Cement Concrete (Marceua, NIsbet, & VanGeem, 2007) which provided a representative electricity usage factor for ready mix facilities per unit volume of concrete processed. This calculation is intentionally conservative, as neither equipment load factor or electrical motor efficiency are incorporated into the calculation. Excluding these factors results in a higher electricity demand and therefore a higher GHG estimate.

$$300{,}000\,\frac{\text{yd}^3}{\text{year}} * 3.15\,\frac{\text{kWh}}{\text{yd}^3} * \frac{1\text{ MWh}}{1{,}000\text{ kWh}} * 206\,\frac{\text{lbs CO2E}}{\text{MWh}} * \frac{1\text{ MT}}{2204.62\text{ lbs}} = 88\,\frac{\text{MT CO2E}}{\text{yr Future Plt. Op.}}$$

Finally, the same methodology was used to calculate the electricity use for the asphalt plant. The maximum throughput possible for the Project's asphalt plant, 500,000 tons/yr, was chosen to represent maximum possible load. An electricity conversion factor, transforming kWh, based on annual throughput of an asphalt plant in tons, was based on a SJVAPCD Best Performance Standard report from 2010 (SJVAPCD, 2010). The calculation determined the total metric tons of CO2e that could be emitted from the asphalt plant per year of the Project.

$$500{,}000\,\frac{tons}{yr} * 1.96\,\frac{kWh}{ton} * \frac{1\,MWh}{1{,}000\,kWh} * 206\,\frac{lbs\,CO2E}{MWh} * \frac{1\,MT}{2204.62\,lbs} = 92\,\frac{MT\,CO2E}{yr\,Future\,Plt.Op.}$$

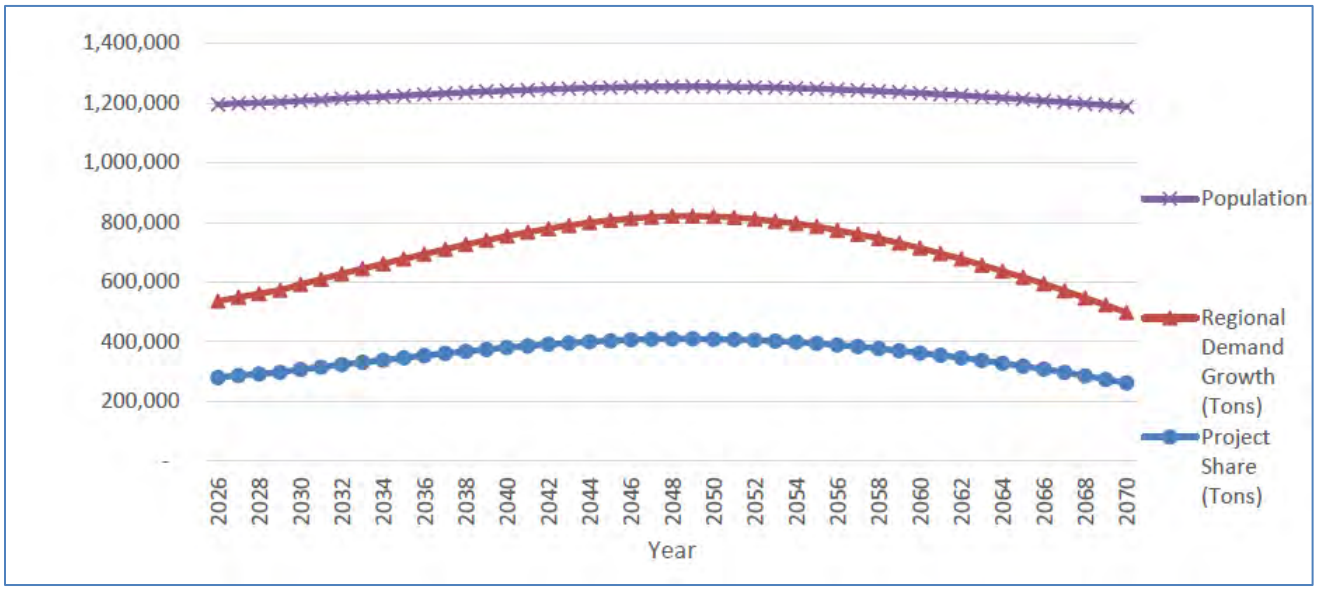
4.4.4 Regional Increment Analysis

In order to accurately address the GHG impact, a regional increment analysis, was conducted which characterizes the Project contribution to cumulative regional GHG emissions (Appendix J). This methodology responds to current regulatory guidance and reflects how aggregate demand and associated emissions are projected and managed at the regional level. The regional increment analysis is based on Project activity levels, as well as regional aggregate demand as forecast in the California Department of Conservation Map Sheet 52, as revised to account for current conditions.

As outlined in Map Sheet 52, state and regional planning forecasts indicate that aggregate demand is driven by population growth and overall regional development, rather than by the maximum production capacity of any single facility. Accordingly, while the Project is capable of supplying aggregate to meet regional needs, its operation would not create a net increase in regional aggregate demand beyond that already forecast. Any increase in annual production from the Project would be offset by corresponding reductions in production from other facilities serving the same regional market, resulting in no substantial change in total regional output.

Consistent with this framework, the GHG analysis evaluates emissions based on the Project's proportional share of regional demand growth, rather than calculating emissions based on continuous operation at maximum throughput. This approach ensures that the Project's GHG emissions are attributed in a manner that reflects realistic market conditions and real world impact. Chart 4 summarizes the aggregate demand in the Fresno and Madera County Production-Consumption Region (P-C Region). Appendix J outlines how population growth and aggregate demand region wide will drive consumption, rather than any one project.

Chart 4.Population Change and Aggregate Demand



Source: Appendix J

The regional increment analysis also clarifies the Project's role in meeting its share of regional GHG reduction obligations. The Project would comply with existing and future regulations governing greenhouse gas emissions, including Air District requirements, statewide climate policies, and new standards adopted during the life of the Project. Compliance with these regulatory programs would contribute to reducing cumulative GHG impacts at the regional and statewide level.

Moreover, as analyzed by Peter Berck in his January 2005 Working Paper 994, "A Note on the Environmental Costs of Aggregate" (Appendix B) when regional demand is a constant, the inclusion of additional aggregate quarry locations within the region can reduce total GHG emissions by reducing the average distance aggregates need to be hauled.

By incorporating the regional increment analysis, the GHG impact analysis provides a more accurate, and policy-consistent assessment of the Project's greenhouse gas impacts, while aligning the analysis with current forecasting methodologies and regulatory expectations. Appendix J includes Sespe's regional increment analysis calculations and memo (November 2024). Table 41 summarizes the emissions quantified in the regional increment analysis, including the Project's regional increment of anticipate GHG emissions increases in the region.

Table 41. Regional Increment Analysis Non-Employee Off-Site Transportation Emissions

Pollutant	PTE (MT/yr)	Reasonably Foreseeable Increase (MT/yr)
CO_2e	3,614	708

Source: Regional Increment Analysis, Regional Aggregates Demand and Effect on Air Quality Environment (Appendix J)

4.5 Project-Level Impacts and Mitigation Measures

4.5.1 Generate GHG Emissions That May Have a Significant Impact on the Environment

Impact Statement

Impact GHG-1: *Would the Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?* **(CEQA Appendix G Threshold Criteria (a)).**

Impact Analysis

Climate change is caused by cumulative GHG emissions. An individual project or emission source typically does not cause a significant climate change effect; it is caused by a large number of sources around the world emitting GHGs that collectively create a significant cumulative impact. Under 14CCR 15130(a)(3), "An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable." Project emissions of GHGs are presented in Table 42 Project Greenhouse Gas Emissions.

SJVAPCD adopted thresholds of significance for GHG emissions on December 17, 2009, "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA." These thresholds were tied to the CARB Scoping Plan at that time and established a method in determining the significance of a project-specific GHG emission impacts using established specifications or project design elements referred to as "Best Performance Standards" (BPS). While the SJVAPCD has not specifically established BPS for a quarry or asphalt plant, the Project includes many elements that will lead to a reduction in GHG emissions from the 1990 "business as usual" scenario. These elements include use of electricity and fuels that are subject to the statewide rules that reduce carbon intensity of electricity and fuels in California and thus GHG emissions from sources that consume electricity.

SJVAPCD guidance on impact analysis for GHGs includes a broad exemption of fuel based GHG emissions that was considered inconsistent with recent CEQA case law. For example, SJVAPCD Policy APR 2025 states the following:

> *… all GHG emission increases resulting from the combustion of any fuel produced, imported, and/or delivered in California are mitigated under Cap-and-Trade… Therefore, GHG emission increases caused by fuel use (other than jet fuels) are determined to have a less than significant impact on global climate change under CEQA.*

Therefore, Fresno County is utilizing the SCAQMD significance threshold of 10,000 $MTCO_2e$ per year to evaluate the significance of GHG impacts. Under the SCAQMD threshold, the Project's GHG emissions are less than significant.

Furthermore, the operation of the Project within Fresno County would likely reduce regional VMT and thus GHG emissions according to Peter Berck in his January 2005 Working Paper 994, "A Note on the Environmental Costs of Aggregate" (Appendix B). That is to say that if the Project was not approved, the aggregate needed for on-going construction activities in Fresno County as well as the San Joaquin Valley Air Basin would have to come from mines farther away and would thereby increase regional VMT and GHG emissions.

Project operations emissions from non-employee off-site, on-road vehicles associated with the project were calculated by summing the operational regional increment with the Baseline condition (709MT CO2e/yr and 5,359 MT CO2e/yr, which comes out to a total of 6,068 CO2e/yr). As described in Appendix L, renewable diesel (RD) went from negligible in 2005 to 16% in 2018 to 70% today and is expected to achieve close to 90% in the future. Based on 2025 reporting, RD has approximately 40% of the carbon intensity of low sulfur diesel fuels and is contributing to reducing the CI of the available ultra-low sulfur diesel available on the market in accordance with the Low Carbon Fuel Standard (LCFS) benchmarks (Appendix L). Accordingly, Project-related off-site on road fleet emissions were reduced by the CI reductions established in the LCFS benchmarks; for the years between 2016 and 2018 the realized CI reduction was 2% and for the years from 2016 to 2026, it was 18.6% (See Figure 2 in Appendix L).

Further, California's in-use off-road diesel fueled fleets regulations require the use of RD; to be reasonably conservative and based on the LCFS benchmark data, an adjustment of 50% was applied to estimated Project-related off-road diesel emissions operating onsite (see Appendix L). This is less than the 55% reduction in CI measured in 2025 between RD and LSDF (Appendix L, Tables 3 and 4) and the approximately 90% in ULSD projected for 2045 (Appendix L, Table 2).This shift has been driven in part by the California Low Carbon Fuel Standard, adopted by the California Air Resources Board in 2009 and implemented beginning in 2011, which requires progressively lower lifecycle carbon intensity for transportation fuels used in the state.

Project Impact represents the difference between the baseline condition and the operating condition. As shown in Table 42, Project operations minus the Baseline conditions result in GHG impacts that are less than the significance threshold.

Table 42 Project Greenhouse Gas Emissions

Activity		CO_2e (MT/yr)
Construction Phase (Maximum Year)		6.6
Operation Phase Total		21,301
On-site On-road Sources (1)(a)	927	
On-site Offroad Sources (2)(b)	4,236	
Non-Employee Off-site On-road Sources (regional increment and accounting for RD) (c)	6,068	
Employee Off-site On-road Sources (d)	302	
Stationary Sources (Asphalt Plant) (e)	8,394	
Electricity (f)	1,373	
Baseline Condition Total		13,737
On-site On-road Sources (a)	954	
On-site Offroad Sources (b)	5,212	
Non-Employee Off-site On-road Sources (regional increment) (c)	5,359	
Employee Off-site On-road Sources (d)	293	
Stationary Sources (e)	-	
Electricity (g)	1,919	
Project Emissions (Operation Phase Minus Baseline Condition)		7,564
GHG Threshold of Significance		10,000
Significant?		No

Source: a) Appendix H Datasets 8 & 10 b) Appendix H Dataset 7 c) Appendix J d) Appendix H Dataset 2a
e) Appendix H Datasets 14a & 14c f) Section 4.4.3 g) Section 4.4.1
1) Off-road units comply with offroad engine rules which require renewable diesel and adjusted by 50% (see Appendix L)
2) Off-site on-road units evaluated based on incremental share of regional increase in emissions (see Appendix J)

Based on the analysis presented above and as shown in Table 42, the Project's net increase in GHG emissions would be less than the SCAQMD significance threshold of 10,000 MT CO_2e per year. This conclusion reflects the use of a regional increment methodology that accounts for regional aggregate demand and the absence of a net increase in regional production. This analysis does not rely on the CA Cap-and-Trade program, given recent CEQA case law. Accordingly, the Project's impact on climate change would be less than significant under CEQA.

Level of Significance Before Mitigation

Less than significant

Mitigation Measures

None required

Level of Significance After Mitigation

Not applicable

4.5.2 Conflict With an Applicable Plan, Policy or Regulation that Reduces GHGs

Impact Statement

Impact GHG-2: *Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?* **(CEQA Appendix G Threshold Criteria (b)).**

Impact Analysis

Project emissions are evaluated with respect to consistency with the following plans and policies that have been adopted to reduce GHG emissions:

Table 43 Adopted Greenhouse Gas Policies

Plan/Policy	Consistent?
A local jurisdiction's qualified climate action plan or GHG reduction plan.	As detailed in section 4.1.5, the Project is consistent because no local climate action or GHG reduction plans apply to the project.
AB 32, SB 32 and the Scoping Plan	As described previously, AB 32 requires that the CARB adopt regulations to require the reporting and verification of statewide greenhouse emissions and monitor and enforce compliance with the program. The Project is in compliance with the 2022 Scoping Plan as demonstrated above in Table 40 Actions for the 2022 Scoping Plan Scenario: AB 32 GHG Inventory Sectors and Table 42 Project Greenhouse Gas Emissions. In the preparation of this Report, the calculation of emissions from fuel and electricity subject to AB 32 and SB 32 were no longer used to reduce GHG emissions for determining the level of significance given recent CEQA case law. Fresno County utilized the SCAQMD as noted in Section 4.1.4, this threshold of

Plan/Policy	Consistent?
	10,000 $MTCO_2e$/yr has been previously utilized to determine significance in an approved EIR within the SJVAPCD. Referring to Section 4.5.1 above, total applicable Project GHG emissions are estimated to be 7,564 $MTCO_2e$/yr, less than the 10,000 $MTCO_2e$/yr threshold. As such, the Project is consistent with the emissions reductions targets outlined in AB 32 and the 2017 and 2022 Scoping Plan.
CA Executive Order B-30-15 goals.	The Project is consistent with the Executive Order B-30-15 goals which apply to the fuel and electricity sectors as a whole. The fuels and electricity used by the Project would be subject to the Cap-and-Trade program as well as other Scoping Plans and related control measures (e.g., renewable energy portfolio, low carbon fuel standard) that are applied higher up in the supply chain. (There is no plan, policy or regulation adopted for the purpose of reducing emissions of GHGs specifically from mining projects)
PCAP Reduction Measures	Emissions from sources and source sectors associated with the Project were included in the emissions inventory and thus informed the reduction measures chosen by the County to mitigate the cumulative impact of climate change. The PCAP measures do not affect sources associated with the Project. Therefore, the Project is consistent with the PCAP.

As outlined in Table 43, the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Moreover, Appendix E details additional plans, policies, and regulations that have been reviewed to ensure the Project would not result in a conflict.

Level of Significance Before Mitigation

Less than significant

Mitigation Measures

None required

Level of Significance After Mitigation

Not applicable.

5.0 ACRONYMS

AADT	average annual daily trips
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ADJ_U*	adjusted friction velocity
ADL	annual dermal load
AERMET	AERMOD Meteorological Processor
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
APCO	Air Pollution Control Officer
AQHRCCIA	Air Quality, Health Risk, and Climate Change Impact Assessment
ASF	age sensitivity factors
ATCM	airborne toxic control measure
ATS	American Thoracic Society
BACM	best available control measure
BACT	best available control technology
BAU	business-as-usual
BPS	best performance standard
BR	breathing rate
BW	body weight
CAAA	Clean Air Act Amendments
CAAQS	California ambient air quality standards
CAFE	corporate average fuel economy
CalEPA	California Environmental Protection Agency
CAP	climate action plan
CAPCOA	California Air Pollution Control Officers Association
CAT	Climate Action Team
CBE	Communities for a Better Environment
CCAA	California Clean Air Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	methane
CO	carbon monoxide

CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPF	cancer potency factor
CPUC	California Public Utility Commission
CUPA	Certified Unified Permitting Agency
DPM	Diesel particulate matter
DWR	Department of Water Resources
FAH	fraction of time at home
FED	functionally equivalent document
FPMP	fugitive PM_{10} management plan
g/dscm	grams per dry standard cubic meter
GAMAQI	Guidance for Assessing and Mitigating Air Quality Impacts
GHG	Greenhouse gas
GLC	ground level concentration
GM	geometric mean
GRAF	gastrointestinal relative absorption fraction
gr/dscf	grains per dry standard cubic feet
GWP	global warming potential
HARP2	Hot Spots Analysis and Reporting Program
HFC	hydrofluorocarbon
HI	hazard index
hp	horsepower
HQ	hazard quotient
IPCC	International Panel on Climate Change
LCFS	Low carbon fuel standard
LNG	liquefied natural gas
LPG	liquefied petroleum gas
LOAEL	lowest observed adverse effects level
MACT	maximum achievable control technology
MEIR	maximum exposed individual receptor
MEIW	maximum exposed individual worker
MPO	metropolitan planning organizations
MT	metric tonnes

NESHAP	National Emissions Standards for Hazardous Air Pollutants
NMHC	non-methane hydrocarbons
N_2O	nitrous oxide
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
NOAEL	no observed adverse effects level
NSPS	New Source Performance Standards
NSR	New Source Review
NHTSA	National Highway Traffic Safety Administration
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
OPR	Governor's Office of Planning and Research
Pb	Lead
PCC	Portland cement concrete
PERP	Portable Equipment Registration Program
PFC	perfluorocarbon
PM	Particulate matter
PM_{10}	PM with aerodynamic diameter less than 10 microns
$PM_{2.5}$	PM with aerodynamic diameter less than 2.5 microns
PMI	point of maximum impact
RACM	reasonably available control measure
RCS	respirable crystalline silica
REL	reference exposure level
RICE	reciprocating internal combustion engine
SB	Senate Bill
SF_6	sulfur hexafluoride
SIP	state implementation plan
SJVAPCD	South Coast Air Quality Management District
SCAQMD	South Coast Air Quality Management District
SO_2	sulfur dioxide
SO_x	sulfur oxides
TAC	toxic air contaminant
tpy	tons per year

TVP	true vapor pressure
U.S.	United States
US EPA	United States Environmental Protection Agency
VDE	visible dust emissions
VMT	vehicle miles traveled
VOC	volatile organic compounds
WAF	worker adjustment factor
WRCC	Western Regional Climate Center

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APPENDIX A FIGURES

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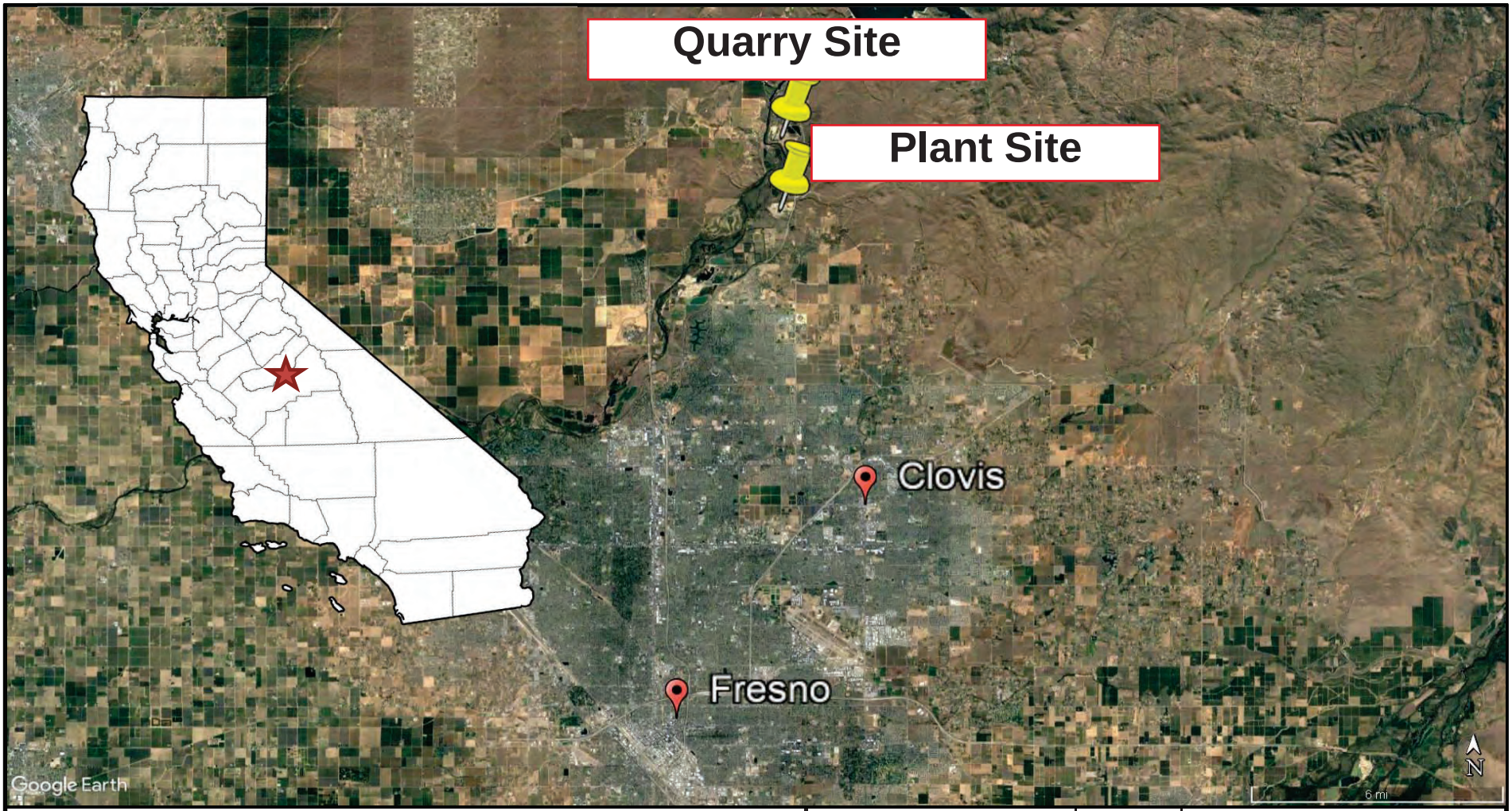
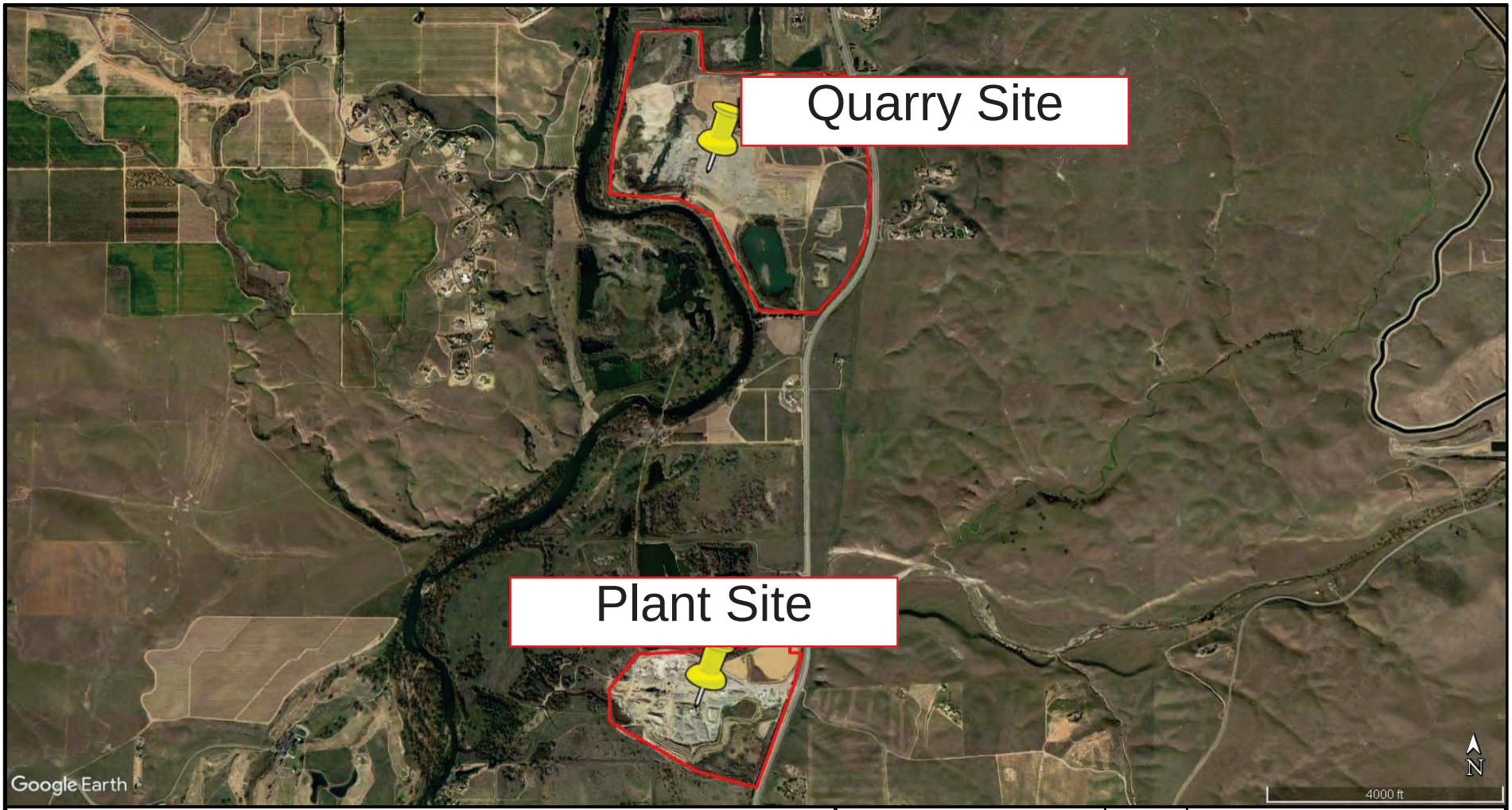


Source: Google Earth 2018

SESPE CONSULTING, INC.

FIGURE	Site Location (regional)		
1	Rockfield Modification Project CEMEX Fresno County, California		
PROJECT #:	CE01.17.36	DATE:	8/3/18
SCALE:	SHOWN	DRAWN BY:	ADA



Source: Google Earth 2017

Approximate Project Site Boundaries

SESPE CONSULTING, INC.

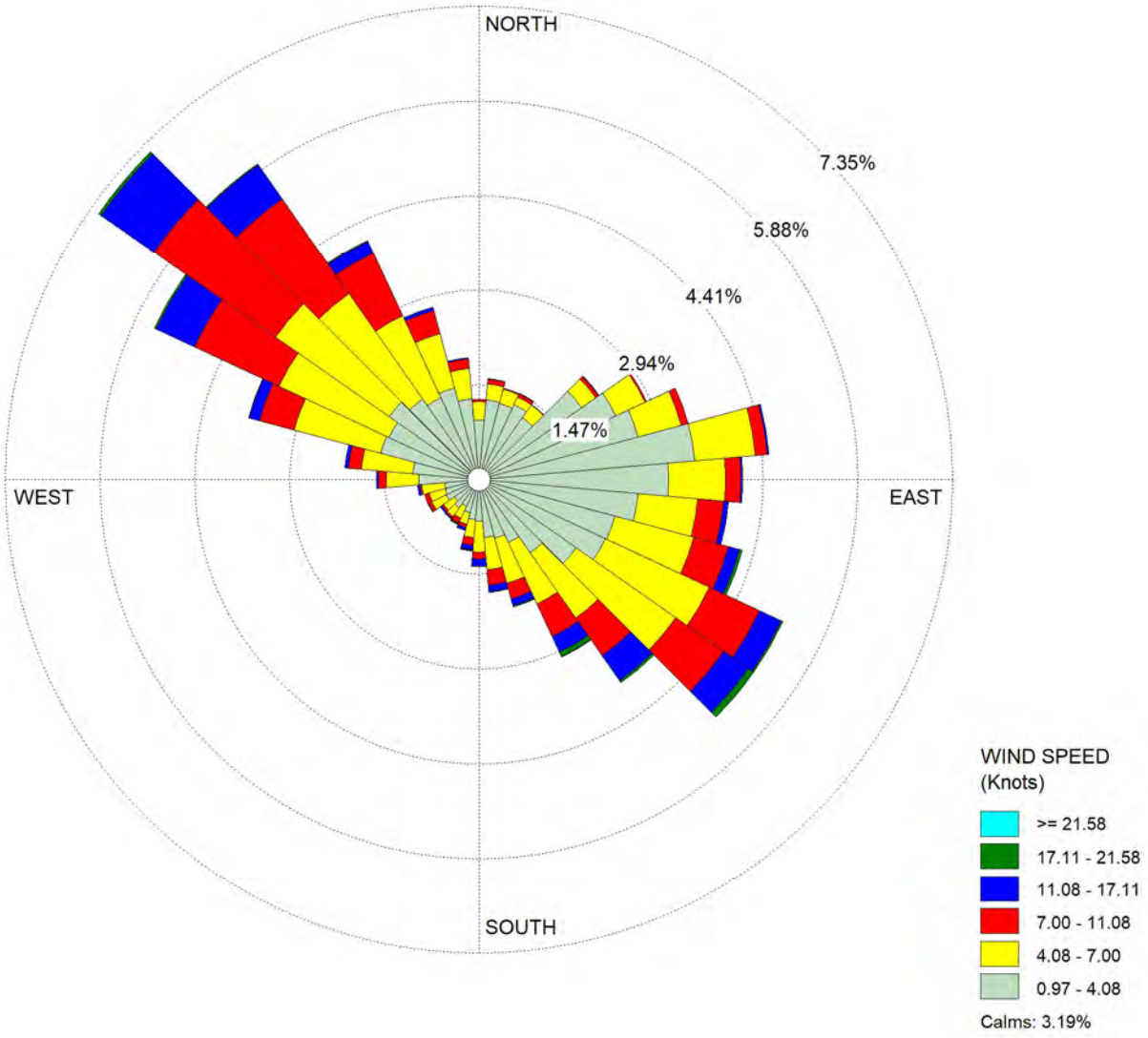
FIGURE	Site Location (local)		
2	Rockfield Modification Project CEMEX Fresno County, California		
PROJECT #:	CE01.17.36	DATE:	8/3/18
SCALE:	SHOWN	DRAWN BY:	ADA

WIND ROSE PLOT:

Station #93193 - FRESNO/AIR TERMINAL, CA

DISPLAY:

Wind Speed
Direction (blowing from)



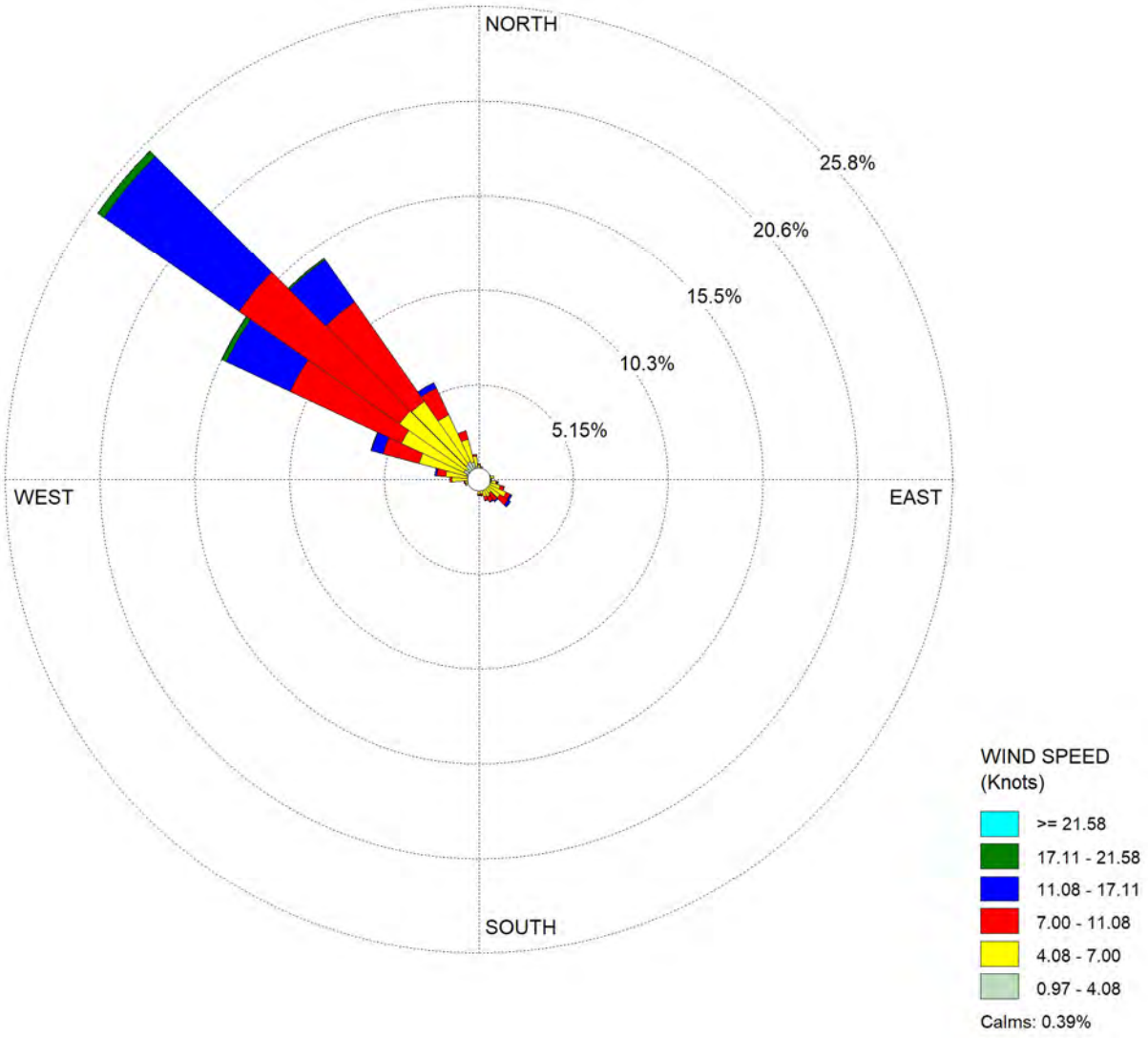
COMMENTS: Windrose for January Through March, 2018-2022	DATA PERIOD: **Start Date: 1/1/2018 - 00:00** **End Date: 3/31/2022 - 23:59**	COMPANY NAME: **SESPE Consulting, Inc. - A Trinity Consultants Company**	
		MODELER: **MM**	
	CALM WINDS: **3.19%**	TOTAL COUNT: **10792 hrs.**	
	AVG. WIND SPEED: **4.88 Knots**	DATE: **9/10/2025**	PROJECT NO.: **0250509.0111**

WIND ROSE PLOT:

Station #93193 - FRESNO/AIR TERMINAL, CA

DISPLAY:

Wind Speed
Direction (blowing from)



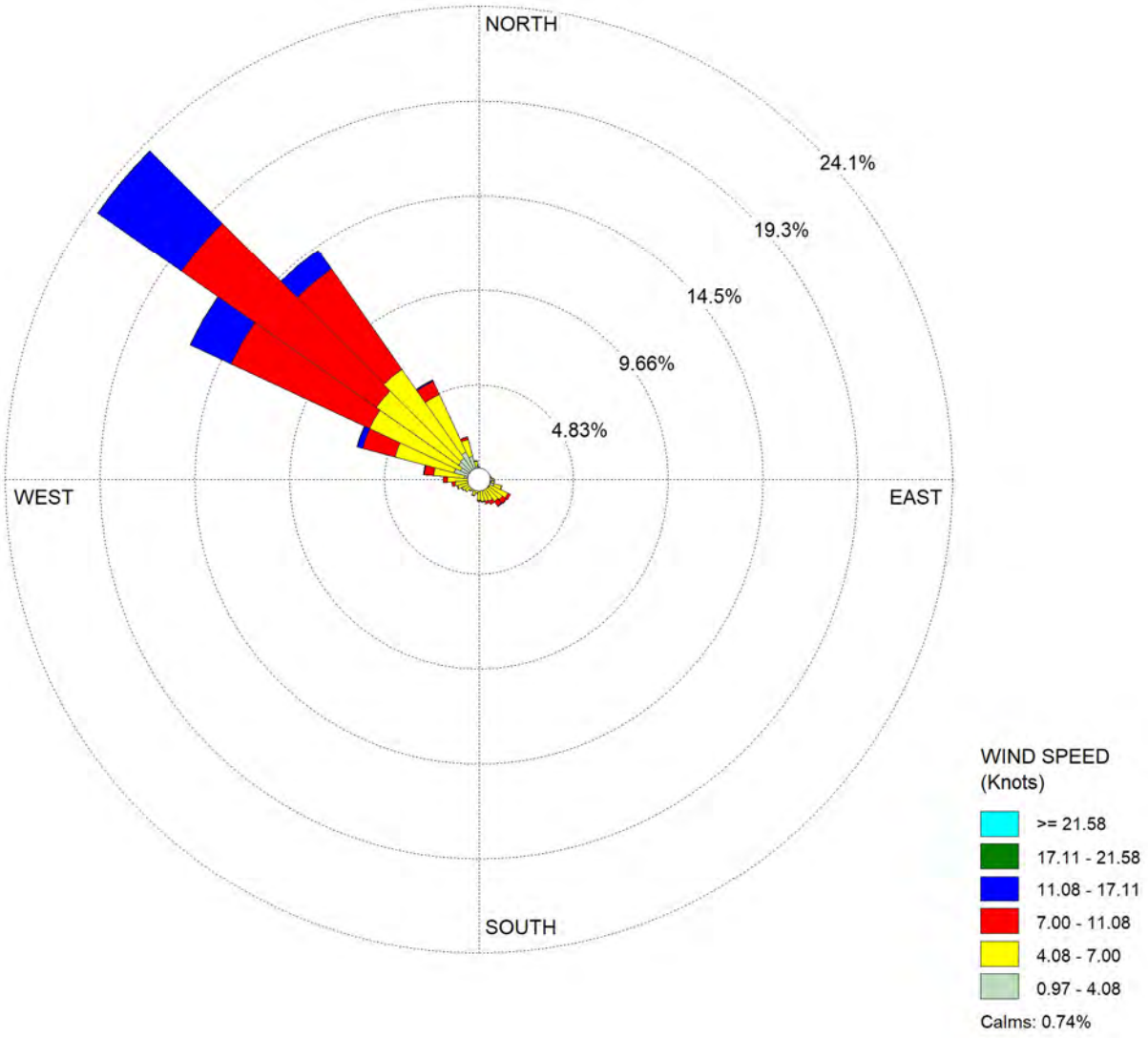
COMMENTS: Windrose for April Through June, 2018-2022	DATA PERIOD: **Start Date: 4/1/2018 - 00:00** **End Date: 6/30/2022 - 23:59**	COMPANY NAME: **SESPE Consulting, Inc. - A Trinity Consultants Company**	
		MODELER: **MM**	
	CALM WINDS: **0.39%**	TOTAL COUNT: **10890 hrs.**	
	AVG. WIND SPEED: **7.54 Knots**	DATE: **9/10/2025**	PROJECT NO.: **0250509.0111**

WIND ROSE PLOT:

Station #93193 - FRESNO/AIR TERMINAL, CA

DISPLAY:

Wind Speed
Direction (blowing from)



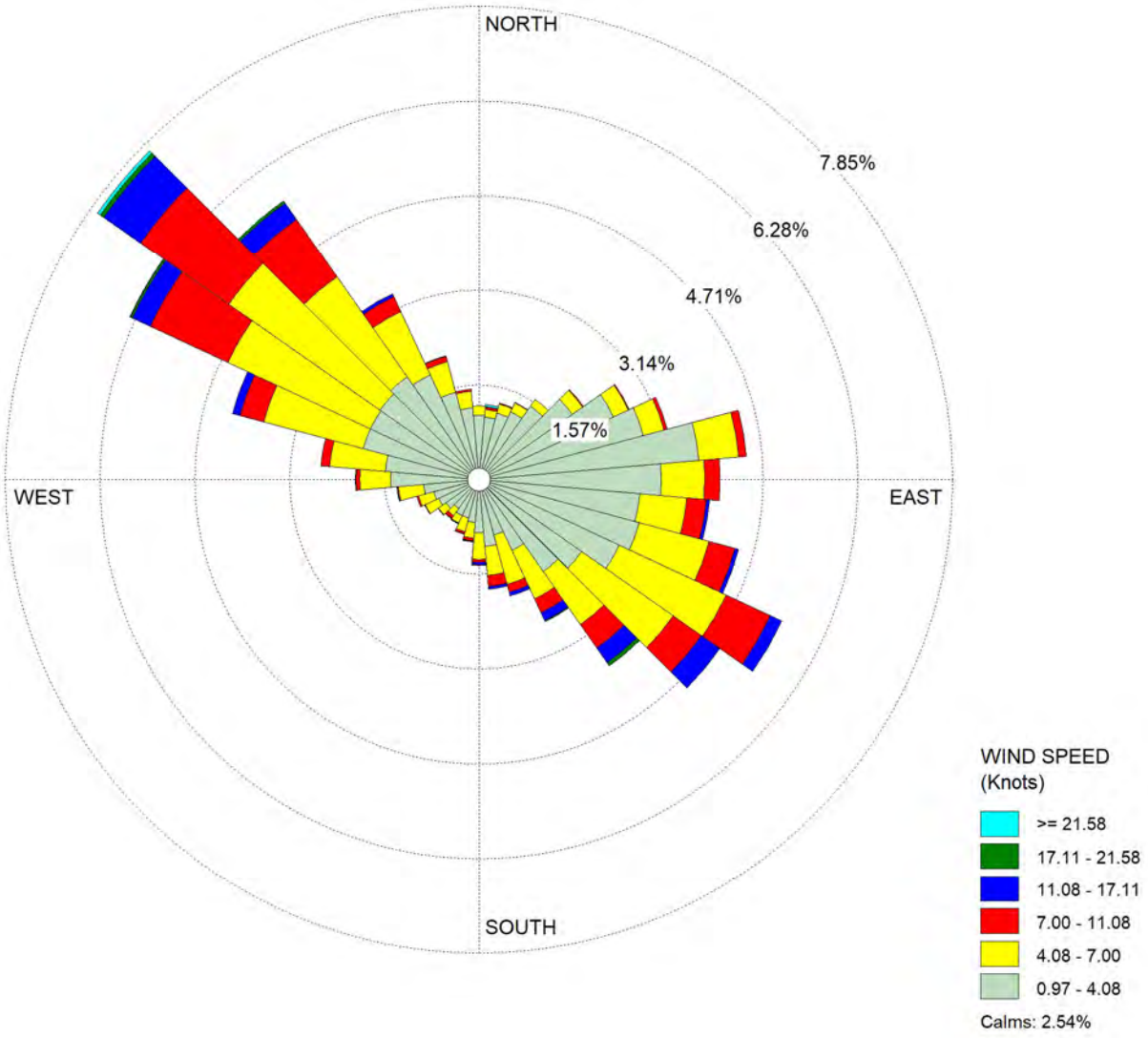
COMMENTS:	DATA PERIOD:	COMPANY NAME:	
Windrose for July Through September, 2018-2022	**Start Date: 7/1/2018 - 00:00** **End Date: 9/30/2022 - 23:59**	**SESPE Consulting, Inc. - A Trinity Consultants Company**	
		MODELER: **MM**	
	CALM WINDS: **0.74%**	TOTAL COUNT: **10992 hrs.**	
	AVG. WIND SPEED: **6.57 Knots**	DATE: **9/10/2025**	PROJECT NO.: **0250509.0111**

WIND ROSE PLOT:

Station #93193 - FRESNO/AIR TERMINAL, CA

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Windrose for October Through December , 2018-2022	DATA PERIOD: **Start Date: 10/1/2018 - 00:00** **End Date: 12/31/2022 - 23:59**	COMPANY NAME: **SESPE Consulting, Inc. - A Trinity Consultants Company**	
		MODELER: **MM**	
	CALM WINDS: **2.54%**	TOTAL COUNT: **10994 hrs.**	
	AVG. WIND SPEED: **4.29 Knots**	DATE: **9/10/2025**	PROJECT NO.: **0250509.0111**

Source: Google Earth 2017

SESPE CONSULTING, INC.

FIGURE 4	Plant Site Stockpile Areas Rockfield Modification Project CEMEX Fresno County, California		
PROJECT #:	CE01.17.36	DATE:	8/3/18
SCALE:	SHOWN	DRAWN BY:	ADA

Source: Google Earth 2017

SESPE CONSULTING, INC.

FIGURE 5

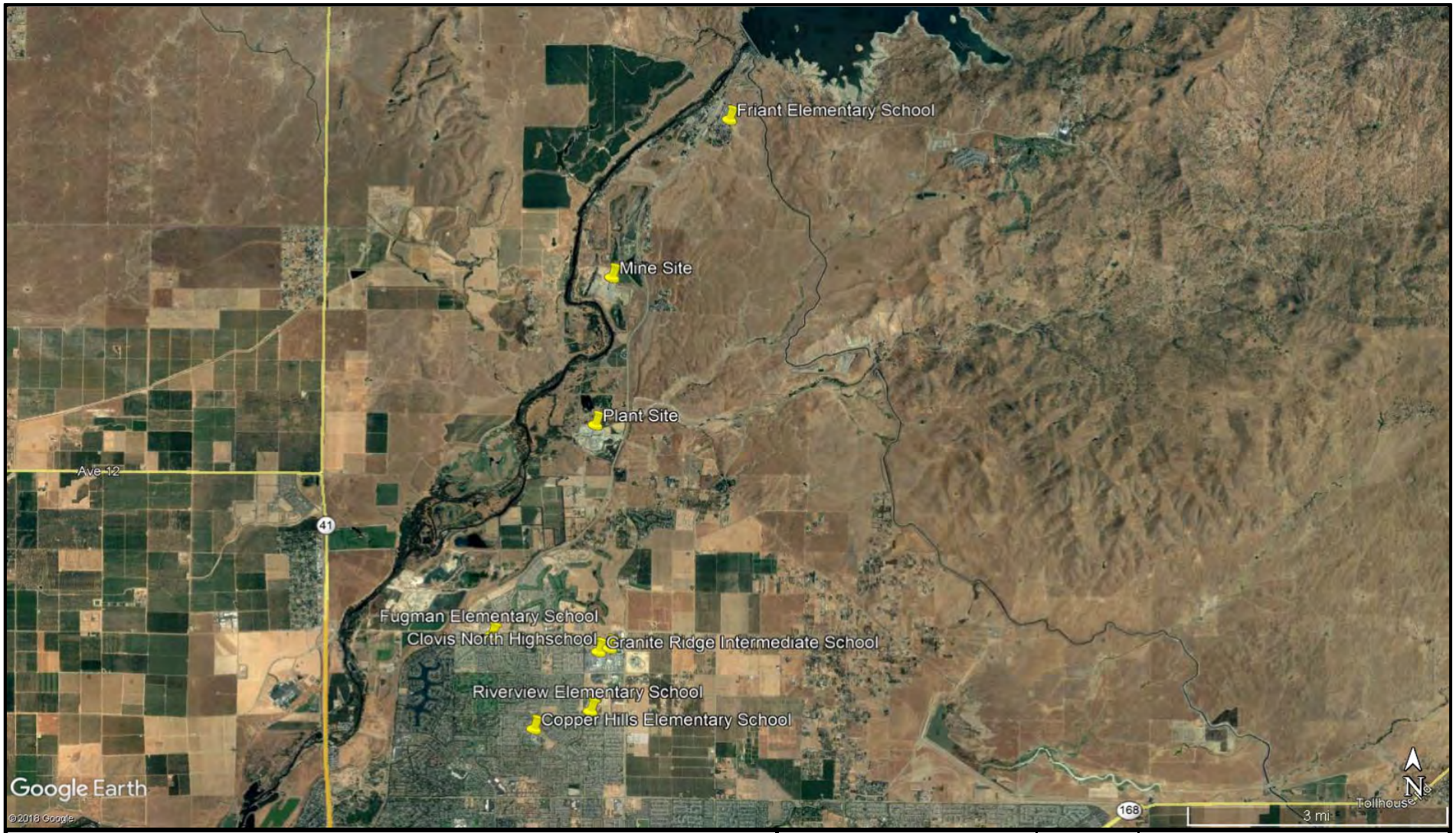
Plant Site Haul Roads
Rockfield Modification Project
CEMEX
Fresno County, California

PROJECT #:	CE01.17.36	DATE:	8/3/18
SCALE:	SHOWN	DRAWN BY:	ADA

Source: Google Earth 2017

SESPE CONSULTING, INC.

FIGURE 6	Quarry Site Haul Roads Rockfield Modification Project CEMEX Fresno County, California		
PROJECT #:	CE01.17.36	DATE:	8/3/18
SCALE:	SHOWN	DRAWN BY:	ADA



Source: Google Earth 2018

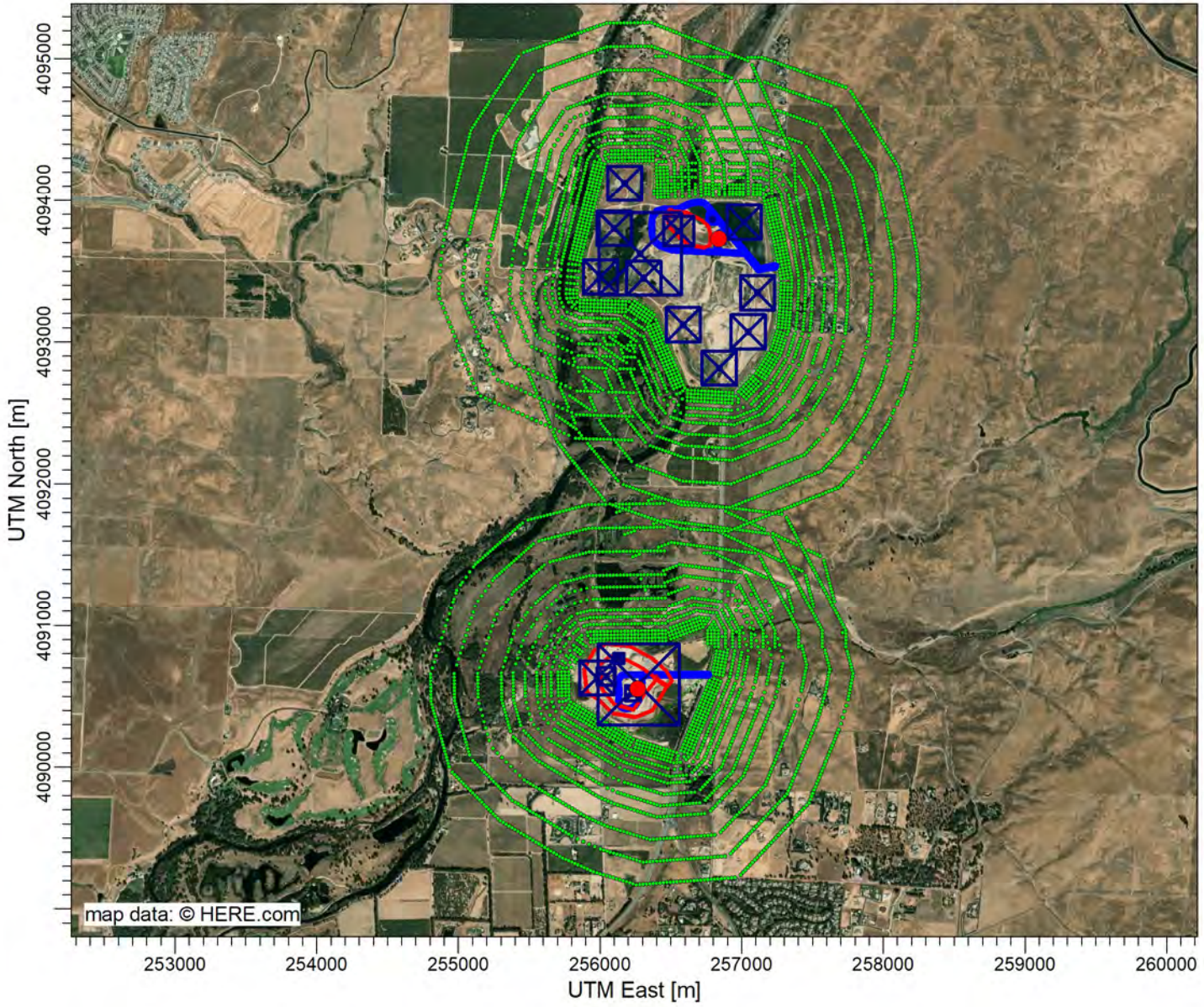
SESPE CONSULTING, INC.

FIGURE 7

Non-Residential Sensitive Receptor Locations
Rockfield Modification Project
CEMEX
Fresno County, California

PROJECT #:	CE01.17.36	DATE:	8/3/18
SCALE:	SHOWN	DRAWN BY:	ADA

PROJECT TITLE:
CEMEX Rockfield Modeling



COMMENTS:
Modeled Source Objects and Fenceline Gridded Receptors

SOURCES:
26

RECEPTORS:
6874

Figure 8a

COMPANY NAME:
Sespe Consulting, a Trinity Consultants Company

MODELER:
MM

DATE:
11/19/2025

SCALE: 1:44,817
0 1 km

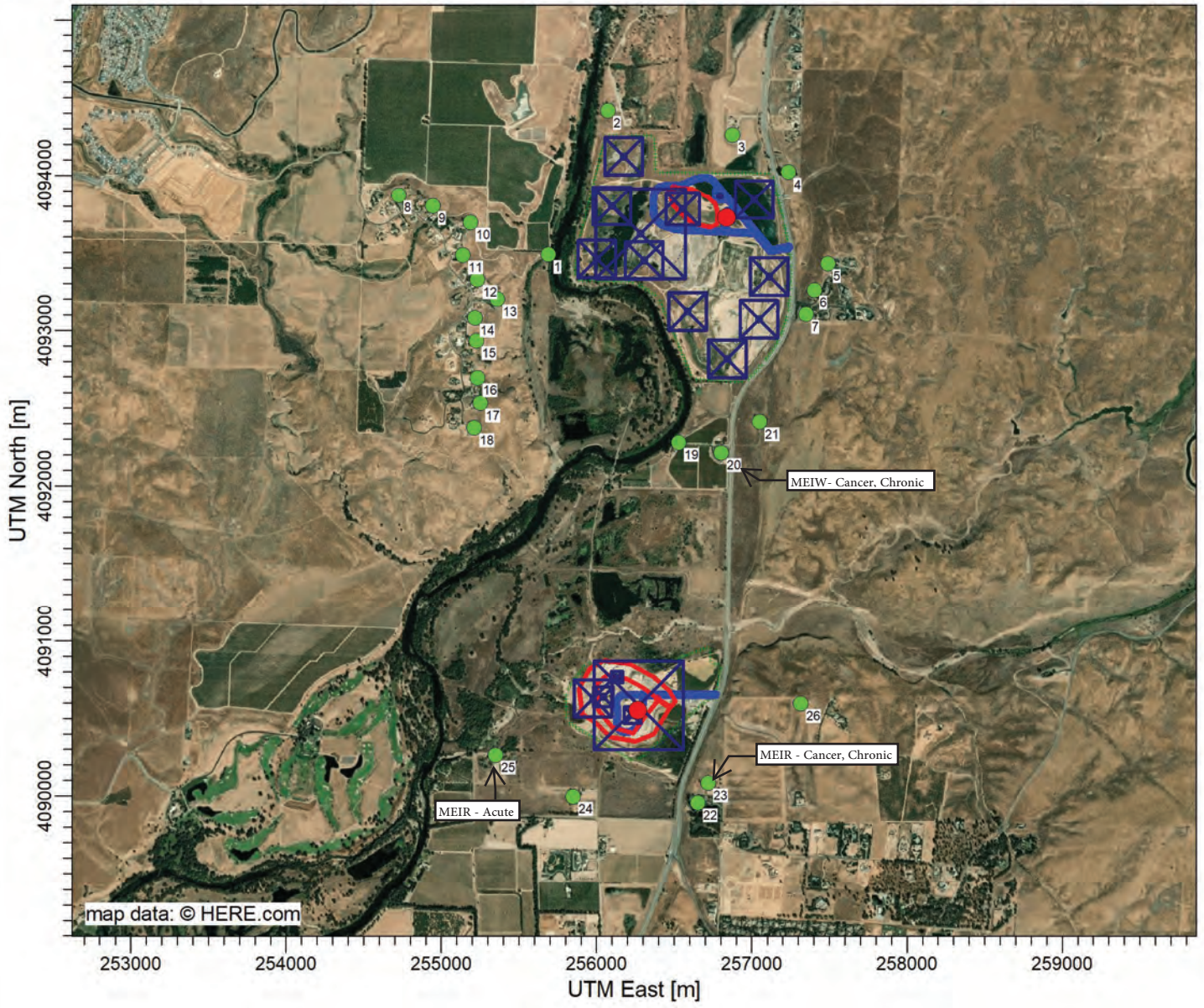
SESPE CONSULTING, INC.
A Trinity Consultants Company

PROJECT NO.:
0250509.0111

AERMOD View - Lakes Environmental Software

C:\z_AERMOD\Rockfield\HRA\HRA.isc

PROJECT TITLE:
CEMEX Rockfield Modeling



COMMENTS:
Modeled Source Objects and Discrete Receptors

SOURCES:
26

RECEPTORS:
6874

Figure 8b

COMPANY NAME:
Sespe Consulting, a Trinity Consultants Company

MODELER:
MM

DATE:
11/19/2025

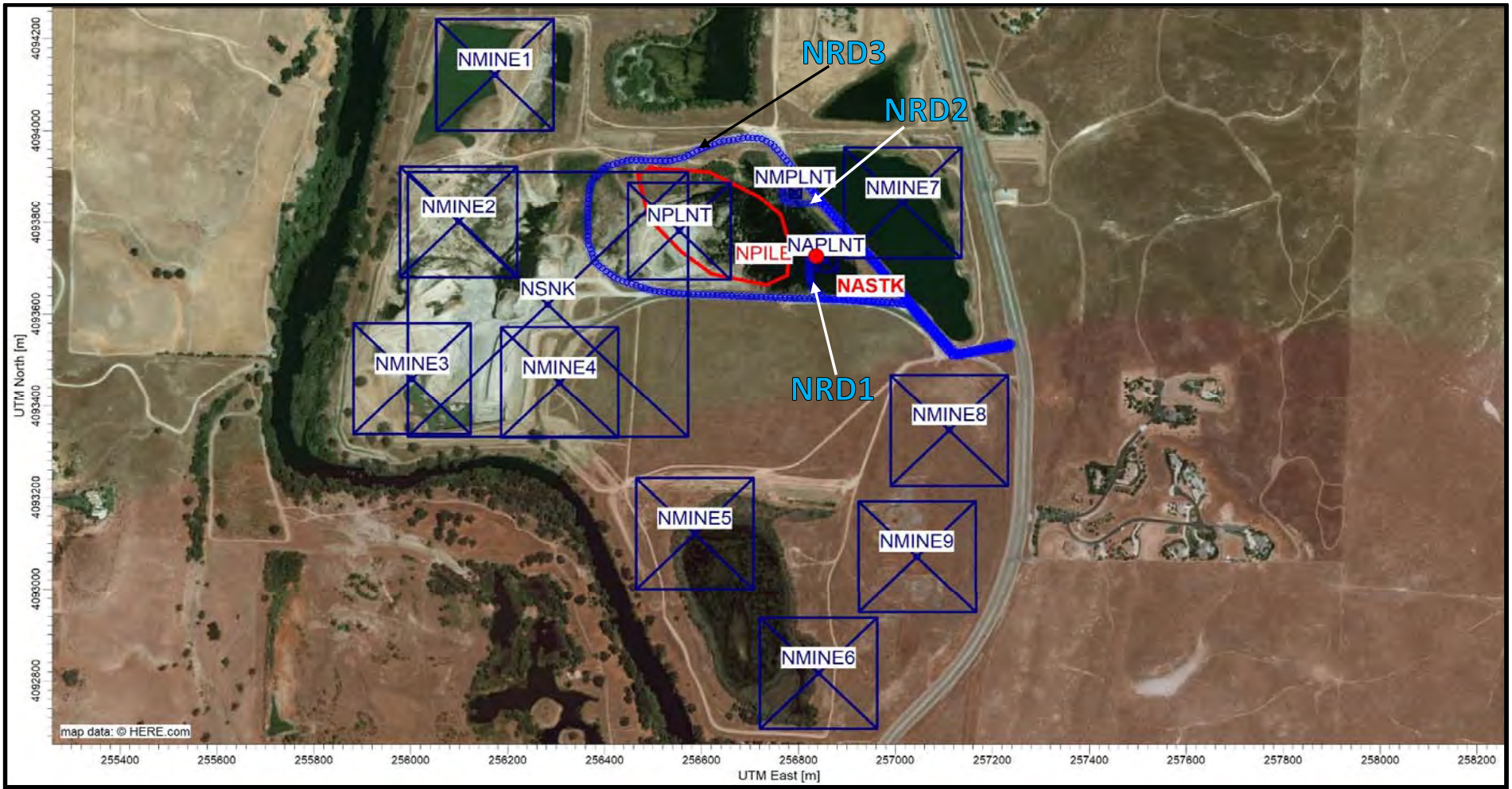
SCALE: 1:40,817
0 1 km

SESPE CONSULTING, INC.
A Trinity Consultants Company

PROJECT NO.:
0250509.0111

AERMOD View - Lakes Environmental Software

C:\z_AERMOD\Rockfield\HRA\HRA.isc

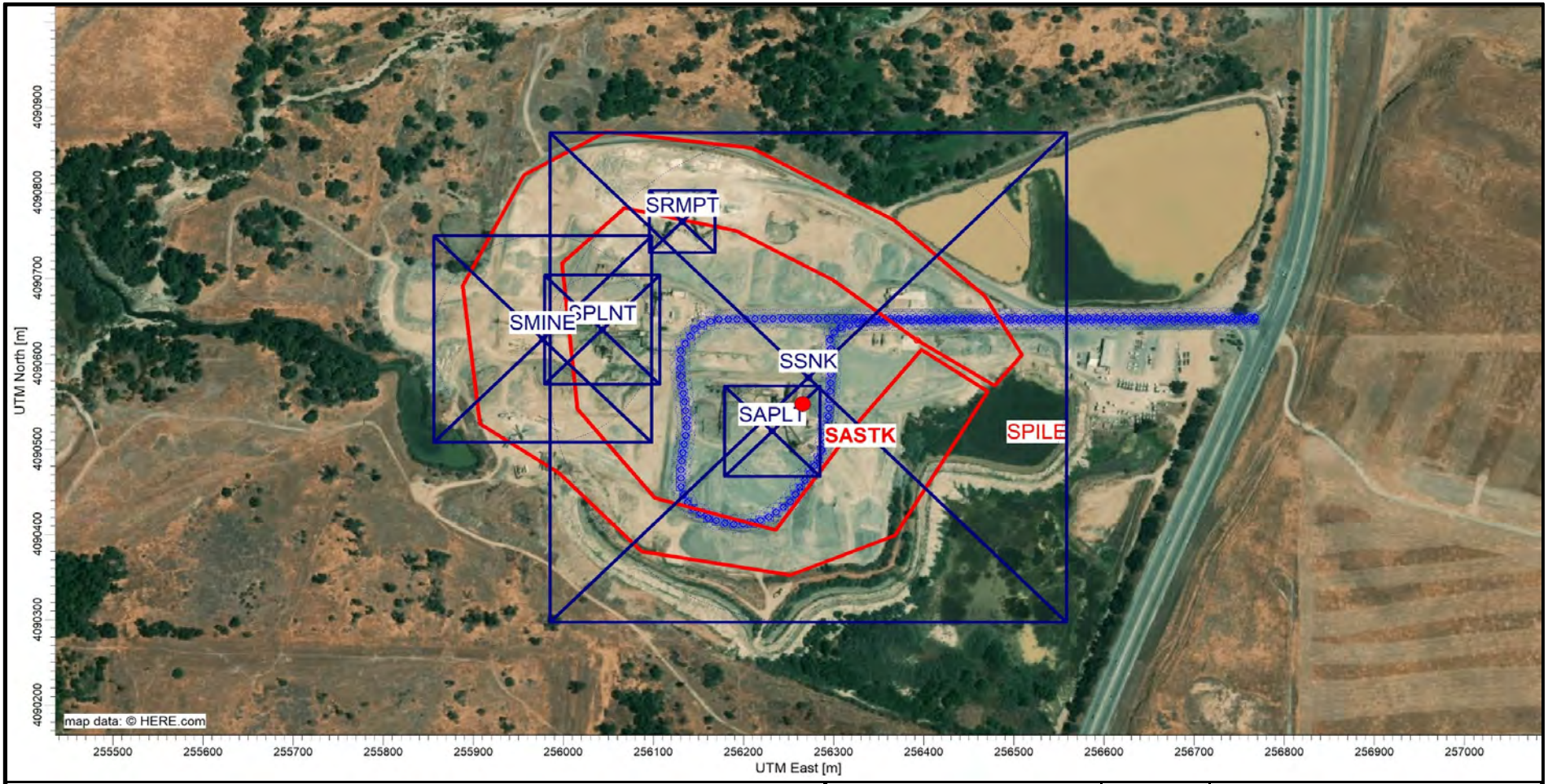


Source: Lakes Aermod View 9.4.0

Legend - See Report Table 19

SESPE CONSULTING, INC.

FIGURE	Quarry Site Model Emissions Objects		
9	Rockfield Modification Project CEMEX Fresno County, California		
PROJECT #:	CE01.17.36	DATE:	8/3/18
SCALE:	SHOWN	DRAWN BY:	ADA



Source: Lakes Aermod View 9.4.0

Legend - See Report Table 19

SESPE CONSULTING, INC.

FIGURE	Plant Site Model Emissions Objects		
10	Rockfield Modification Project CEMEX Fresno County, California		
PROJECT #:	CE01.17.36	DATE:	8/1/19
SCALE:	SHOWN	DRAWN BY:	ADA

PROJECT TITLE:
CEMEX Rockfield Quarry Blasting Simulation

COMMENTS:

SOURCES:
9

RECEPTORS:
6883

Figure 11

COMPANY NAME:
Sespe Consulting, a Trinity Consultants Company

MODELER:
M.B.

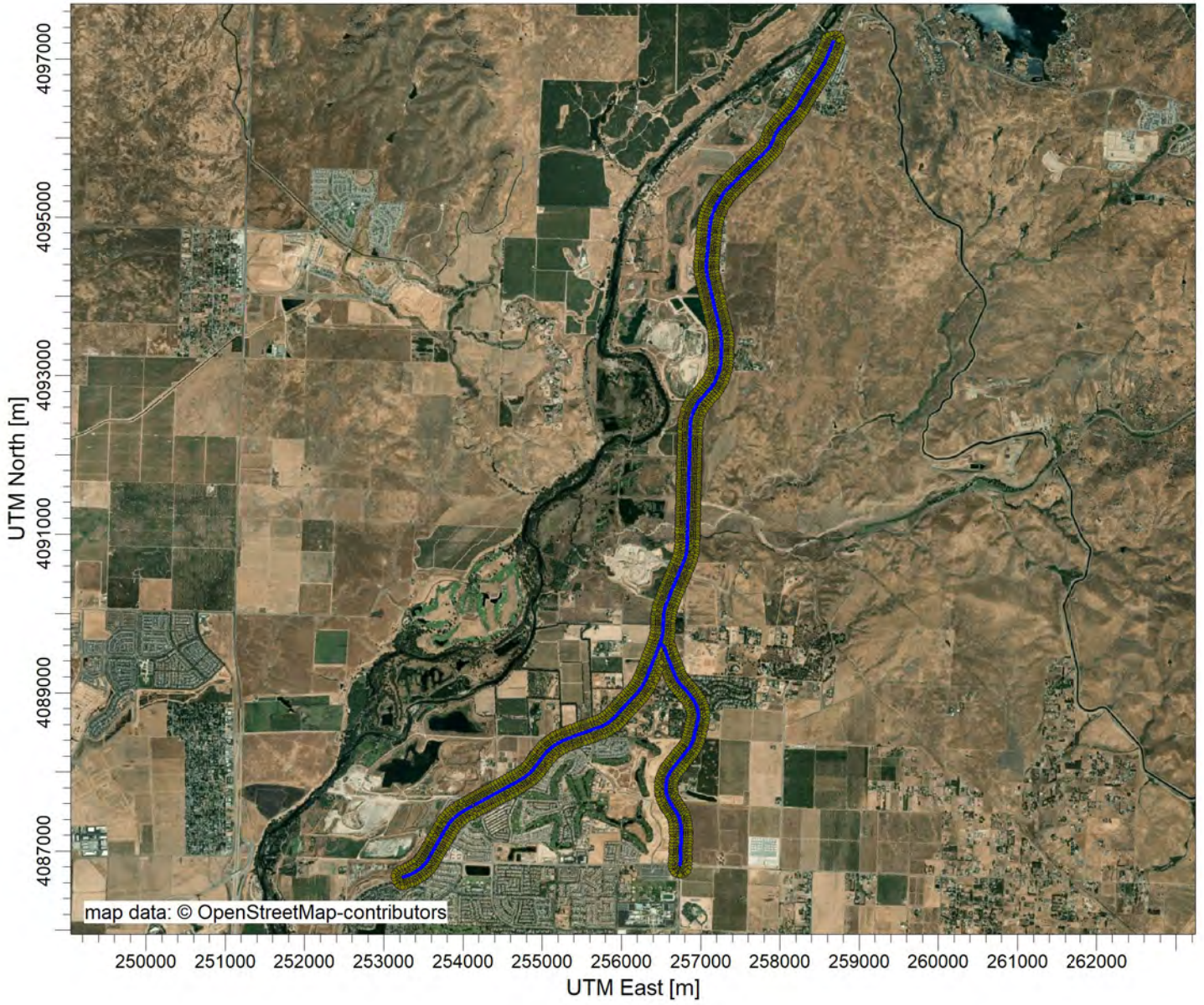
DATE:
3/4/2026

SCALE: 1:17,030
0 0.5 km

SESPE CONSULTING, INC.
A Trinity Consultants Company

PROJECT NO.:
0250509.0111

PROJECT TITLE:
CEMEX Rockfield Quarry Traffic Simulation



COMMENTS:

SOURCES:
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RECEPTORS:
4689

Figure 12

COMPANY NAME:
Sespe Consulting, a Trinity Consultants Company

MODELER:
M.B.

DATE:
11/19/2025

SCALE: 1:79,980
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SESPE CONSULTING, INC.
A Trinity Consultants Company

PROJECT NO.:
0250509.0111

APPENDIX B ECONOMICS OF CONSTRUCTION AGGREGATES

A Note on the Environmental Costs of Aggregates
Map Sheet 52 Report
Open File Report 99-09 (Partial)
Caltrans Aggregate Availability Memo

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DEPARTMENT OF AGRICULTURAL AND RESOURCE ECONOMICS AND POLICY
DIVISION OF AGRICULTURE AND NATURAL RESOURCES
UNIVERSITY OF CALIFORNIA AT BERKELEY

WORKING PAPER NO. 994

A NOTE ON THE ENVIRONMENTAL COSTS OF AGGREGATES

by

Peter Berck

California Agricultural Experiment Station
Giannini Foundation of Agricultural Economics
January 2005

A Note on the Environmental Costs of Aggregates

by Peter Berck[*]
January 10, 2005

Abstract:

The opening of a new site for the production of aggregates has both direct and indirect impacts on the environment. The indirect impacts include changes in the environmental costs of hauling aggregates and possible changes in the level of construction activity. In this note, we show that the most likely effect of a new aggregate site is to reduce the truck miles used for aggregate hauling, which is an environmental benefit. We also show that the change in construction activity induced by a new site is likely to be extremely small.

[*] Peter Berck is Professor of Agricultural and Resource Economics. I would like to thank Atanu Dey for able research assistance. The remaining errors are mine.

A Note on the Environmental Costs of Aggregates

The opening of a new quarry for aggregates will change the pattern of transportation of aggregates in the area served by the quarry. In this note, we will show that, so long as aggregate producers are cost minimizing, the new pattern of transportation requires less truck transport than the pattern of transportation that existed before the opening of the new quarry. Since the costs of providing aggregates falls, it is reasonable to assume that the price of delivered aggregates also will fall. This note also shows that the demand expansion effect is of very small magnitude. Since the demand increase from a new quarry is quite small, the dominant effect is that the quarries are on average closer to the users of aggregates and, as a result, the truck mileage for aggregate hauling decreases. To summarize the effects of a new quarry project:

a) The project in itself will not significantly increase the demand for construction materials in the region through market forces, which include the downward pressure on pricing.
b) Truck traffic (i.e. vehicle miles traveled) in the region will not increase and may decrease as a result of the project.

As a result, the effect of a new quarry project will be to reduce the air emissions from aggregate trucking. The reduction in emissions should be included as a positive impact of a quarry project in any analysis of the environmental consequences of a new quarry.

The remainder of this note provides a brief description of the economics of construction materials and explains why these points must be true.

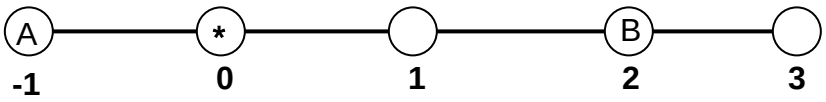
Based upon the available evidence, a project would decrease haul distances for aggregates and would therefore decrease emissions from trucks, rather than increase them.

There are two economic facts that are important to understand in evaluating the likely addition or subtraction to truck traffic from a new quarry. One is the economics of location. The second is the demand for aggregates, which is the quantity of aggregates used as a function of price.

That a new site leads to smaller haul distance is a matter of geometry and economics. Transportation is a major element in the cost of delivered aggregate, so new sites are chosen, within the limits placed by the natural availability of aggregates, to minimize transport costs.

An example should make this fact clear. Consider diagram 1. Circles represent aggregate-using projects of equal size. The five projects shown are located at miles marked –1, 0, 1, 2, and 3. Two of the project sites are marked with the letters A and B, and they are potential locations for aggregate production. The location at mile 0 is an existing aggregate production site and it is marked by an asterisk (*). The scale is in miles. For simplicity, each project uses one unit of aggregate.

Diagram 1



With only one aggregate production site at mile 0, the miles traveled to supply the five projects is seven: zero miles for project at mile 0, one mile for each for the projects at mile –1 and 1, two miles for the project at 2 and three miles for the project at 3 for a total of 7 miles. If an additional aggregate production site is started at A, the miles traveled decreases to six, because there is no transportation required for the aggregate-using project at A and all other projects are served by the original site. However, if the new site is placed at B instead of being placed at A, transport distance falls to three miles because then two projects have aggregate production at their location and thus have zero

transportation requirements, and the three remaining sites each require a one-mile transport. Each aggregate production site supplies 2.5 units of aggregates, that is, half the total required by the five projects. Since cost depends on distance and, markets minimize costs, the free market system always will choose a point like B, the one with the lowest cost. In this case it is also the lowest transport distance.

Other forms of industrial organization lead to higher prices being charged for aggregates, but the effect of additional suppliers is to lower prices and haul distances. Appendix A elucidates the case where the price depends upon the delivered costs of the second most efficient producer.

The second issue for the siting of aggregate production is the possibility that lower delivered costs lead to more projects or more use of aggregates in existing projects. The degree to which decrease in the price of a good, in this case construction material, leads to an increase in the quantity of that material used is described by the elasticity of demand. The elasticity of demand is the percent increase in use caused by a one percent decrease in price.

A search of the economic literature found no articles estimating a positive elasticity of demand for aggregates. A review by the Susan Kohler[†] finds that only population and not price is correlated with aggregate usage. In other words, a reduction in the price of aggregate does not lead to an increase in demand for it.

While it is a theoretical possibility that the quantity of aggregates demanded (that is, the quantity used in projects) is responsive to price, two facts about construction make this unlikely. First, the cost of aggregates is usually a tenth or less of the cost of a project. Second, the building of projects -- housing, roads, and commercial construction -- is not very sensitive to the costs of producing them.

[†] *Map Sheet 52. Aggregate Availability in California.* by Susan L. Kohler. California Department of Conservation. California Geological Survey. Sacramento. 2002.

Although we have not found literature on the elasticity of demand for either public projects or contract construction, there is an empirical literature on the elasticity of demand for housing[‡]. In these studies, a one percent change in the price leads to about a half percent change in the quantity of housing consumed. Public projects, like roads, are budgeted, often from specials funds, like road taxes. In that case, a one percent decrease in the costs of *all* projects in a taxing jurisdiction would lead to a one percent increase in the quantity of roads built. Since aggregates are very expensive to ship, the quarry being considered likely would only change the costs of nearby road construction, perhaps for just one county.

For example, Monterey County has a population of 400,000 while the state population is 33.9 million people.[§] Assuming that road construction is roughly proportional to population, about 1.2 percent of road construction would be in Monterey. So, if a new quarry in Monterrey decreased the price of aggregates in Monterrey by 1 percent and left the price the same in the rest of the state, then the average price in the whole state would fall by about 0.01 percent, which is negligible. A project that affects only a small part of a taxing jurisdiction has only a small effect on that jurisdiction's costs and can have no major affect on the quantity of services supplied by that jurisdiction.

We know of no evidence of elasticities for construction work as high as one. We estimate the elasticity of demand for projects using aggregates to be much less than one, likely under a half in the private sector and near zero in the public sector.

Given that projects will be built, there is some possibility of substituting of other structural materials for aggregates in buildings. However these substitute materials too would be trucked. The realistic possibility for roads is that there are no materials to substitute for aggregates. I do not believe this pathway to greater use of aggregates in building would be triggered by the transport savings from a new aggregate source or that it would result in an increase in net truck miles.

[‡] Hanushek, Eric A., John Quigley. "What is the price elasticity of housing demand?" *Review of Economics and Statistics.* August, 1980.

[§] Population figures are for the year 2000.

Since a change in price of aggregates does not lead to either a substantial substitution of other materials for aggregates or a substantial increase in the quantity of projects, the demand for aggregates is very inelastic. This inelasticity of demand is exactly the reason that the State of California can use a fixed per-capita consumption rate for forecasting the need for construction materials.

An example will make clear how the transport advantage and elasticity of demand arguments fit together. Let us consider a new quarry that, through its transportation advantage over existing quarries, would save 12.5 miles of trucking on each and every project in the study area. We shall assume that the average truck haul pre-project was 25 miles.

According to the *Map Sheet 52: Aggregate Availability in California,* the cost of construction aggregate doubles every 25-35 miles from the point of production. The following calculations are carried out assuming that a 25 mile haul doubles the cost. Assuming that a unit of aggregate costs $1 at the production site, then its delivered cost at a project site 25 miles away is $2. If the haul distance were to be reduced to 12.5 miles due to a new quarry, then half of the transportation costs – or $0.50 – would be saved. This represents a cost savings of 25 percent in the delivered cost of aggregate and is entirely due to a 50 percent decrease in miles traveled.

The only way for a new quarry to influence the quantity of construction is through the price of aggregates. This example presents the competitive case, where the delivered price decreases by the full amount of the transport cost savings. In the competitive case, the effect on the quantity of construction will be extremely moderate, as demonstrated below. (Appendix A presents a less than perfectly competitive example.)

In keeping with the fact that the cost of aggregate accounts for less than 10 percent of the total cost of a construction project, a price reduction of 25 percent on aggregate is a cost saving of 2.5 percent or less on the project. Let us assume a very liberal price elasticity of

demand for construction of 0.5. In other words, 2.5 percent reduction in the cost of construction would lead to 1.25 percent increase in the quantity of construction demanded. This increased quantity of delivered aggregate leads to additional truck haul miles. The number of increased miles from the increased aggregate sales is 1.25 percent of the original quantity times the new haul distance which is 50% of the original distance. Therefore, the percentage increase in truck haul miles occasioned by a decrease in aggregate price will be 0.625 percent because the new aggregate location is only half as far away.

In this example, the new quarry saves 50 percent of truck trip miles through location and contributes 0.625 percent of new truck trip miles from demand increase. This leads to a net decrease of 49.375 percent in truck miles. The following Table 1 summarizes the net reduction of truck haul miles for three different scenarios – the new aggregate project site located at 12.5, 6.25, and 2.5 miles from a construction site.

Table 1

Distance to New Quarry (miles)	**Decrease in haul miles (%)**[**]	**Decrease in delivered aggregate cost (%)**	**Decrease in construction cost (%)**	**Increase in construction quantity (%)**	**Increase in haul miles from additional construction(%)**[††]	**Net decrease in miles hauled (%)**
12.5	50	25	2.5	1.25	0.62	**49.4**
6.25	25	37.5	3.75	1.85	0.46	**74.5**
2.5 miles	90	45	4.5	2.25	0.22	**89.8**

There is a general rule to be deduced from the example: The percent decrease in cost for the delivery of aggregates equals the percent decrease in miles driven, while the increase in the use of aggregates equals the elasticity of demand for a final product (such as roads) times the cost share of aggregates in making the product times the decrease in cost. Since the elasticity of demand for a final product is much less than one, and the cost

[**] This decrease is with respect to the pre-project haul miles.
[††] This increase is with respect to the pre-project haul miles.

share of aggregates in making the product is about 8 percent, a new quarry must decrease truck miles and decrease NOX and other emissions from trucks.

Appendix A

Spatial Models with Imperfect Competition

When a producer has a price advantage over other producers because of lower transport costs, the producer can exploit that advantage by charging consumers a price greater than its marginal cost. Marginal cost is the cost of producing one incremental unit.
In this appendix, I will briefly investigate one model of spatial competition that is derived from a classical model of Hotelling [‡‡]

In Hotelling's model, two stores (which are analogous to production sites) can relocate at no cost and then compete based on price. Since consumers are some distance from the store, they see the price of a product as the amount they pay for the product plus the cost of travel. They go to the store with the least total cost (cost of product plus cost of travel). The stores seek to make the most money they can make. The price the consumer will pay is the largest price that the store the consumer goes to can charge without losing the customer to the other store.[§§] In Hotelling's model, the two stores will locate next to each other, split the market in half, and charge the competitive price. While the pricing rule of the Hotelling model may well apply to aggregates, the assumption of complete location flexibility is not applicable.

Returning to the model of diagram 1, shown above., I now consider the effects on pricing of adding one aggregate production site with competition in prices. Consider the case where both aggregate production sites and aggregate-using projects exist at location A and *. The production site at * would be willing to supply the project at location A at its marginal cost of production (mc) plus the cost of transport for one mile, for a total of mc + 1 c. This is higher than the marginal plus transport costs that production site A has for

[5] Hotelling, Harold. 1929. "Stability in Competition." Economic Journal 39:41-57
[6] Salop, Steven C. 1979. "Monopolistic Competition with Outside Goods." *The Bell Journal of Economics.* Salop models the competition between stores in terms of quantity, so that the price for consumers near a store is determined as a monopolist would determine price. With a very low elasticity of demand as is true for aggregates, the price competition model of Hotelling seems more appropriate.

supplying the project at A. However, the site at A can charge up to mc+c without losing the customer. The site charges mc+c while its costs are mc and makes c units of pure profit. The site at * prices in the same way—a price just high enough to avoid the site at A from taking the customer. For the sites to the right of *, the prices are mc+2, mc+3, and mc+ 4. In each case, this is the highest price site * can charge without losing the customer to site A.

In this model, one of the best places for a new site would be at B. The new site would sell ½ unit to the project between it and * at a price of mc + c, a whole unit to the project located at B at a price of mc + 2c (the price at which the site at * would be willing to supply aggregate), and a whole unit to the project located to its right at a price of mc + 3c. The result of adding the new site would be that the price for each project to the right of the project at * fell by c.

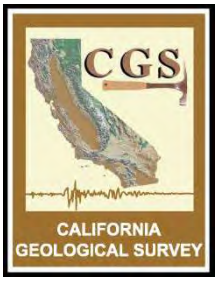
With competitive (marginal cost) pricing as described in the body of the note, the addition of the new site at B would result in the prices paid by projects decreasing by four, while with imperfect competition as described in this appendix, the new site would result in the prices paid by projects decreasing only by three. Compared to the competitive case cited above, the imperfect competition example results in smaller changes in prices and therefore a larger decrease in truck traffic.

MAP SHEET 52

(UPDATED 2018)

AGGREGATE SUSTAINABILITY IN CALIFORNIA

2018



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MAP SHEET 52

(UPDATED 2018)

AGGREGATE SUSTAINABILITY IN CALIFORNIA

By

John P. Clinkenbeard (PG #4731)
and
Fred W. Gius (PG #7788)

2018

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INTRODUCTION

Sand, gravel, and crushed stone are “construction materials.” These commodities, collectively referred to as aggregate, provide the bulk and strength to Portland Cement Concrete (PCC), Asphaltic Concrete (AC, commonly called “black top”), plaster, and stucco. Aggregate is also used as road base, subbase, railroad ballast, and fill. Aggregate normally provides 80 to 100 percent of the material volume in the above uses.

The building and paving industries in California consume large quantities of aggregate and future demand for this commodity is expected to increase throughout California. Aggregate materials are essential to modern society, both to maintain the existing infrastructure and to provide for new construction. Therefore, aggregate materials are a resource of great importance to the economy of any area. Because aggregate is a low unit-value, high-bulk-weight commodity, it must be obtained from nearby sources to minimize economic and environmental costs associated with transportation. If nearby sources do not exist, then transportation costs can quickly exceed the value of the aggregate. Transporting aggregate from distant sources results in increased construction costs, fuel consumption, greenhouse gas emissions, air pollution, traffic congestion, and road maintenance.

To give an idea of the scale of these impacts, from 1987 to 2016, California consumed an average of about 180 million tons of construction aggregate (all grades) per year. Moving in 25 ton truckloads that is 7.2 million truck trips per year. With an average 25-mile haul (50-mile round trip) that amounts to 360 million truck miles traveled, more than 51 million gallons of diesel fuel used, and more than 570,000 tons of carbon dioxide emissions produced annually. If the haul distance is doubled to 50 miles (100-mile round trip) the numbers double to 720 million truck miles traveled, more than 102 million gallons of diesel fuel used, and over 1.1 million tons of carbon dioxide emissions produced.

Land-use planners and decision makers in California are faced with balancing a wide variety of needs in planning for a sustainable future for their communities and regions. Mining is often seen as a controversial land use during the permitting process. However, there are benefits to having local sources of construction aggregate. Increasingly, as existing permitted aggregate supplies are depleted, local land-use decisions regarding aggregate resources can have regional impacts that go beyond local jurisdictional boundaries.

These factors, universal need, increasing demand, the economic and environmental costs of transportation, and multiple land-use pressures make information about the availability and demand for aggregate valuable to land-use planners and decision makers charged with planning for a sustainable future for California’s citizens.

California Geological Survey (CGS) Map Sheet 52 and this accompanying report provide general information about the current availability of, and future demand for, California’s permitted aggregate reserves. Map Sheet 52 was originally published in 2002 (Kohler, 2002) and subsequently updated in 2006 (Kohler, 2006) and 2012 (Clinkenbeard, 2012). Map Sheet 52 (2018) is an update of the version published in 2012.

Map Sheet 52 updates data from 49 reports compiled by the CGS for more than 30 aggregate study areas throughout the state (see Appendix). These study areas cover about 30 percent of the state and provide aggregate for about 85 percent of California's population. This report is divided into three parts:

- Part I - provides data sources and methods used to derive the information presented.
- Part II - compares the updated 2018 Map Sheet 52 to the prior (2012) map.
- Part III - an overview of construction aggregate.

All aggregate data and any reference to "aggregate" in this report and on the map, pertain to "construction aggregate," defined as alluvial sand and gravel or crushed stone that meets standard specifications for use in PCC or AC unless otherwise noted.

The estimates of permitted resources, aggregate demand, and years of permitted reserves remaining on Map Sheet 52 (2018) and in this report, are based on conditions as of January 1, 2017 and do not reflect changes, such as production, mine closures, or new or expanded permits, that may have occurred since that time. Although the statewide and regional information presented on the map and in this report may be useful to decision-makers, it should not be used as a basis for local land-use decisions. The more detailed information on the location and estimated amounts of permitted and non-permitted resources, and future regional demands contained in each of the aggregate studies employed in the compilation of Map Sheet 52 should be used for local land-use and decision-making purposes.

PART I: DESCRIPTION OF MAP SHEET 52, AGGREGATE SUSTAINABILITY IN CALIFORNIA

Map Sheet 52 is a statewide map showing a compilation of data about aggregate availability collected over a period of about 40 years and updated to January 1, 2017. The purpose of the map is to compare projected aggregate demand for the next 50 years with currently permitted aggregate reserves in various regions of the state. The map also shows the projected years of permitted reserves remaining and highlights regions where less than 10 years of permitted aggregate supply remain. The following sections describe data sources and methodology used in the development of the map.

Mineral Land Classification Reports and Aggregate Studies

Aggregate reserves and projected aggregate demand shown on Map Sheet 52 are updated from mineral land classification reports published by CGS between 1979 and 2017 (see Appendix). They were prepared in response to California's Surface Mining and Reclamation Act of 1975 (SMARA) that requires the State Geologist to classify land based on the known or inferred mineral resource potential of that land. SMARA, its regulations and guidelines, are described in Special Publication 51 (State Mining and Geology Board, 2000). The regulations and guidelines can be found on the State Mining and Geology Board website at http://www.conservation.ca.gov/smgb.

The Mineral Land Classification process identifies lands that contain economically significant mineral deposits. The primary goal of mineral land classification is to ensure that the mineral resource potential of lands is recognized and considered in land-use planning. The classification process includes an assessment of the quantity, quality, and extent of aggregate deposits in a study area.

Mineral land classification reports may be specific to aggregate resources, may contain information about both aggregate and other mineral resources, or they may only contain information on minerals other than aggregate. Reports that focus on aggregate include aggregate resource classification and mapping, estimates of permitted and non-permitted aggregate resources, projected 50-year demand for aggregate resources, and an estimate of when the permitted reserves will be depleted. Map Sheet 52 is a statewide updated summary of 50-year demands and permitted resources for all regional SMARA classification reports pertaining to construction aggregate.

Mineral land classification studies for aggregate may use either a Production-Consumption (P-C) region or a county as the study area boundary. A P-C region is one or more aggregate production districts (a group of producing aggregate mines) and the market area they serve. P-C regions sometimes cross county boundaries. Mineral land classification reports include information from one or more P-C regions, or from a county. For ease in discussion, the area covered by each P-C region or county aggregate study is referred to as an "aggregate study area." SMARA guidelines recommend that the State Geologist periodically review the mineral land classification in defined study regions to determine if new classifications are necessary. The projected 50-year forecast of aggregate demand in the region may also be revised.

The index map of aggregate studies shown in the lower left-hand corner of Map Sheet 52 shows the latest reports that cover an aggregate study area. Earlier reports covering the same areas or portions of areas are referenced in the Appendix with an asterisk ("*"). Original mineral land classification reports and update reports are listed in the Appendix and can be found on the CGS Information Warehouse at http://maps.conservation.ca.gov/cgs/informationwarehouse/.

Fifty-Year Aggregate Demand Forecast

The fifty-year aggregate demand forecast for each of the aggregate study areas is presented on Map Sheet 52 as a pie chart (See *Fifty-Year Aggregate Demand Compared to Permitted Aggregate Reserves* section), and is presented in Table 1 of this report. The demand information may be new, or updated from previously published mineral land classification reports. The demand forecast information depicted on Map Sheet 52 is for the period January 1, 2017 through December 2066.

The aggregate study areas with the greatest projected future demand for aggregate are the South San Francisco Bay and Temescal Valley-Orange County areas. Each is expected to require more than a billion tons of aggregate by the end of 2066. Other areas with projected high demands are Western San Diego County, San Gabriel Valley, San Bernardino, Sacramento County, and Palmdale. Each of these areas is projected to need more than 500 million tons of aggregate in the next 50 years. Aggregate study areas having smaller demands generally are in rural, less populated areas. The aggregate study areas of El Dorado County, Glenn County, Nevada County, Shasta County, and Tehama County are all projected to require less than 100 million tons of aggregate over the next 50 years.

Methodology

The steps used for forecasting California's 50-year aggregate needs using the per capita consumption model are:

1. Collecting yearly historical production and population data.

2. Dividing yearly aggregate production by the population for that same year to determine annual historical per capita consumption.

3. Determining the average of the annual historical per capita consumption values for the range of years being used.

4. Projecting yearly population for a 50-year period from the beginning of 2017 through 2066.

5. Multiplying each year of projected population by the average historical per capita consumption and adding the results for each year to obtain the 50-year aggregate demand.

Table 1. Comparison of 50-Year Demand to Permitted Aggregate Reserves for Aggregate Study Areas as of January 1, 2017.

AGGREGATE STUDY AREA[1]	50-Year Demand (million tons)	Permitted Aggregate Reserves (million tons)	Permitted Aggregate Reserves Compared to 50-Year Demand (percent)	Projected Years Remaining
Bakersfield P-C Region	338	1,708	505	More than 50
Barstow-Victorville P-C Region	163	117	72	31 to 40
Claremont-Upland P-C Region	202	90	45	21 to 30
El Dorado County	82	15	18	11 to 20
Fresno P-C Region	305	556	182	More than 50
Glenn County	41	22	54	21 to 30
Merced County	154	61	40	21 to 30
Monterey Bay P-C Region	333	297	89	41 to 50
Nevada County	41	52	127	More than 50
North San Francisco Bay P-C Region	492	263	53	21 to 30
Palmdale P-C Region	569	163	29	11 to 20
Palm Springs P-C Region	238	163	68	31 to 40
Placer County	188	387	206	More than 50
Sacramento County	724	327	45	21 to 30
Sacramento-Fairfield P-C Region	295	109	37	21 to 30
San Bernardino P-C Region	939	156	17	11 to 20
San Fernando Valley/ Saugus-Newhall[2]	**387**	**17**	**4**	**10 or fewer**
San Gabriel Valley P-C Region	751	297	40	21 to 30
San Luis Obispo-Santa Barbara P-C Region	226	58	26	11 to 20
Shasta County	82	49	60	31 to 40
South San Francisco Bay P-C Region	1,320	506	38	21 to 30
Stanislaus County	160	39	24	11 to 20
Stockton-Lodi P-C Region	409	203	50	21 to 30
Tehama County	49	30	61	31 to 40
Temescal Valley-Orange County[2]	1,079	862	80	41 to 50
Tulare County	130	53	41	21 to 30
Ventura County[2]	241	84	35	11 to 20
Western San Diego County P-C Region	763	265	35	11 to 20
Yuba City-Marysville P-C Region	344	679	197	More than 50
Total	11,045	7,628	69	

[1] Aggregate study areas follow either a Production-Consumption (P-C) region boundary or a county boundary. A P-C region includes one or more aggregate production districts and the market area that those districts serve. Aggregate resources are evaluated within the boundaries of the P-C Region. County studies evaluate all aggregate resources within the county boundary.

[2] Two P-C regions have been combined into one study area.

Bold = study area with ten or fewer years of permitted reserves.

For this update, the range of years of historical production and population data used were generally from 1980-2016.

The per capita consumption model has proved to be effective for projecting aggregate demand in major metropolitan areas. However, the per capita model may not work well in county aggregate studies or in P-C regions that import or export a large percentage of aggregate resulting in a low correlation between P-C region production and population. In such areas, projections may be made based on historical production or, multiple projections based on differing assumptions may be used to better characterize a range of future demand.

For regions that export large amounts of aggregate to neighboring P-C regions, projections are based on an historical production model where 50-year aggregate demand is determined by extending a best-fit line of historical aggregate production data for a county or region. This model was used to project Yuba City-Marysville's 50-year demand because the region exports about 70 percent of its aggregate into neighboring areas such as Sacramento County and Placer County. The 50-year demand for Glenn and Tehama counties, the Palmdale P-C Region, and the Temescal Valley-Orange County area was also projected using this method.

Permitted Aggregate Reserves

Approximately 7.6 billion tons of permitted aggregate reserves lie within the aggregate study areas shown on Map Sheet 52. Permitted aggregate reserves are aggregate deposits that have been determined to be acceptable for commercial use, exist within properties owned or leased by aggregate producing companies, and have permits allowing mining of aggregate material. A "permit" is a legal authorization or approval by a lead agency, the absence of which would preclude mining operations. Although some permitted reserves face legal challenges, these reserves are included in this study pending resolution of those challenges.

In California, mining permits usually are issued by local lead agencies (county or city governments). Map Sheet 52 shows permitted aggregate reserves as a percentage of the 50-year demand on each pie chart (See *Fifty-Year Aggregate Demand Compared to Permitted Aggregate Reserves* section). Beneath the study area name located next to its corresponding pie chart is the permitted resource in tons along with the 50-year demand. These figures are also given in Table 1.

Permitted aggregate resource calculations shown on the map and in Table 1 initially were determined from information provided in reclamation plans, mining plans, and use permits issued by the lead agencies. When information was inadequate to make reliable independent calculations, CGS staff used resource estimates provided by mine operators or owners. These data were checked against rough calculations made by CGS staff, and any major discrepancies were discussed with the mine operators or owners. Permitted reserve calculations have been updated to account for production from 2010-2016 and are current as of the beginning of 2017.

Fifty-Year Aggregate Demand Compared to Permitted Aggregate Reserves

Fifty-year aggregate demand compared to the currently permitted aggregate reserves is represented by a pie chart for each aggregate study area on Map Sheet 52. Each pie chart is in the approximate center of the aggregate study area it represents. There are four different sizes of charts, each representing a 50-year demand range. The smallest pie chart represents 50-year demands of less than 200 million tons, while the largest chart represents demands of over 800 million tons. The 50-year demand (in tons) is shown on the map with the amount of permitted reserves beneath the study area name located next to its corresponding pie chart (permitted reserves, left / 50-year demand, right). The whole pie represents the total 50-year aggregate demand for a particular aggregate study area. The blue portion of the pie represents the permitted aggregate resource (shown as a percentage of the 50-year demand) while the purple-colored portion of the pie represents that portion of the 50-year demand that will not be met by the currently permitted reserves. For example, if the blue portion is 25 percent and the purple portion is 75 percent of a pie chart that represents a total demand of 400 million tons, the permitted reserves are 100 million tons, and the region will need an additional 300 million tons of aggregate to supply the area for the next 50 years. The pie representing the Bakersfield aggregate study area is completely colored blue, showing permitted aggregate reserves are equal to or greater than the area's 50-year aggregate demand. Detailed examples are provided in the legend of Map Sheet 52.

Except for the Bakersfield P-C Region, Fresno P-C Region, Nevada County, Placer County, and the Yuba City-Marysville P-C Region, all the aggregate study areas have less permitted aggregate reserves than they are projected to need for the next 50 years. Fifteen of the aggregate study areas shown on the map have less than half of the permitted reserves they are projected to need in the next 50 years.

Estimates of Years of Permitted Reserves Remaining

The right-hand column of Table 1 indicates the projected years of permitted reserves remaining for the various aggregate study areas. Calculations of depletion years are made by comparing the currently permitted reserves to the projected annual aggregate consumption in the study area on a year-by-year basis. This is not the same as dividing the total projected 50-year demand for aggregate by 50 because, as population increases, so does the projected annual consumption of aggregate for a study area. Data are presented as ranges; 10 or fewer, 11-20, 21-30, 31-40, 41-50, and more than 50 years. This information is included on Map Sheet 52 beneath the study area name along with the permitted reserves and the projected 50-year demand. These estimates are based on conditions as of January 1, 2017 and do not reflect changes, such as new or expanded permits, that may have occurred since that time.

Only one of the aggregate study areas in Table 1, the San Fernando Valley-Saugus Newhall area, is projected to have less than 10 years of permitted aggregate reserves remaining as of January 1, 2017.

Seven of the aggregate study areas in Table 1 have between 11 and 20 years of permitted aggregate reserves remaining, ten have between 21 and 30 years of permitted aggregate reserves remaining, four have 31 to 40 years remaining, two have 41 to 50 years, and five have more than 50 years of permitted reserves remaining.

These numbers are estimates and the actual lifespan of existing permitted reserves in a study area can be influenced by many factors. In periods of high economic growth, demand may increase, shortening the life of permitted reserves. Large projects, such as the construction or maintenance of major infrastructure, or rebuilding after a disaster such as an earthquake could also deplete permitted reserves more rapidly. Increased demand from neighboring regions with dwindling or depleted permitted reserves may also accelerate the depletion of permitted reserves in a study area. Conversely, a slow economy may reduce demand for a period of time, extending the life of permitted reserves, or new or expanded permits may be granted in a study area, increasing the permitted reserves and the lifespan of permitted reserves in that area.

Non-Permitted Aggregate Resources

Non-permitted aggregate resources are deposits that may meet specifications for construction aggregate, are recoverable with existing technology, have no land use overlying them that is incompatible with mining, and currently are not permitted for mining. While not shown on Map Sheet 52, non-permitted aggregate resources are identified and discussed in each of the mineral land classification reports used to compile the map (See Appendix).

There are approximately 74 billion tons of non-permitted construction aggregate resources in the aggregate study areas shown on Map Sheet 52. While this number seems large, it is unlikely that all of these resources will ever be mined because of social, environmental, or economic factors. The location of aggregate resources too close to urban or environmentally sensitive areas can limit or prevent their development. Resources may also be located too far from a potential market to be economic. Despite such possible constraints, non-permitted aggregate resources are the most likely future sources of construction aggregate potentially available to meet California's continuing demand. Factors used to calculate non-permitted resource amounts and to determine the aerial extent of these resources, are given in each of the mineral land classification reports listed in the Appendix.

Aggregate Production Areas and Districts

Aggregate production areas are shown on Map Sheet 52 by five different sizes of triangle. A triangle may represent one or more active aggregate mines. The relative size of each symbol corresponds to the amount of yearly production for each mine or group of mines. Yearly production was based on data from the Department of Conservation's Division of Mine Reclamation (DMR) records for the calendar year 2016.

The smallest triangle represents an area that produced less than 0.5 million tons of aggregate in 2016. These triangles often represent a single mine operation and many are in rural parts of the state. The largest triangle represents aggregate mining districts

with production of more than 5 million tons in 2016. Only two aggregate production districts fall into this category – the Temescal Valley District in western Riverside County and the San Gabriel Valley District in Los Angeles County.

PART II: COMPARISONS BETWEEN THE PRIOR (2012) AND THE UPDATED (2018) MAP SHEET 52

The prior version of Map Sheet 52 was published in 2012. Permitted aggregate resource data for that map were current as of January 1, 2011. Work conducted for that study took place during 2011/2012. The latest aggregate production and location data available for the prior map were from 2010 records. The aggregate demand projections for the prior map were based on California Department of Finance (DOF) county population projections from the 2010 U.S. census. Fifty-year aggregate demand from January 1, 2011 through the year 2060 was determined for the included study areas.

This updated Map Sheet 52 was completed and published in 2018. Permitted aggregate resource data for the updated map is current as of January 1, 2017. All work conducted for the updated study took place during 2017/2018. The latest aggregate production and location data available for the updated map are from 2016 records. The aggregate demand projections for the updated map were based on DOF county population estimates and projections for 2010 to 2060 (DOF, 2018). Fifty-year aggregate demand from January 1, 2017 through the year 2066 was determined for the included study areas.

Changes have occurred in both aggregate supplies (permitted aggregate reserves) and in 50-year aggregate demand since Map Sheet 52 (2012) was completed. Changes in permitted aggregate reserves are shown in Table 2. Changes in 50-year demand are shown in Table 3.

Aggregate Study Area Changes

Six aggregate study areas on the original (2002) Map Sheet 52 were modified for the 2006 map, resulting in three fewer study areas. They included the Southern California P-C regions of Orange County, Temescal Valley, San Fernando Valley, Saugus-Newhall, Western Ventura County, and Simi Valley. These regions were combined into three regions when they began to run out of permitted reserves and became dependent on aggregate sources from neighboring regions. The importation of aggregate from neighboring regions typically results in longer haul distances, higher costs, and increased carbon dioxide emissions, air pollution, traffic congestion, and highway maintenance. The shift in supply area also results in more rapid depletion of permitted reserves in neighboring regions.

In the 2006 and 2012 versions of Map Sheet 52, information for eastern and western Merced County and northern and southern Tulare county were reported. This was because separate market regions existed in those study areas. While those separate market regions may still exist, in this update, information is reported for Merced and Tulare counties and not for the eastern and western or northern and southern areas, respectively.

Table 2. Comparison of Permitted Aggregate Reserves Between Map Sheet 52, 2012 and Map Sheet 52, 2018.

AGGREGATE STUDY AREA	Map Sheet 52, 2012 Permitted Aggregate Reserves as of 1/1/11 (million tons)	Map Sheet 52, 2018 Permitted Aggregate Reserves as of 1/1/17 (million tons)	Percent Difference
Bakersfield P-C Region	143	1,708	1,094
Barstow Victorville P-C Region	124	117	-6
Claremont-Upland P-C Region	109	90	-17
El Dorado County	18	15	-17
Fresno P-C Region	46	556	1,109
Glenn County	33	22	-33
Merced County**	N/A**	61	N/A**
Monterey Bay P-C Region	323	297	-8
Nevada County	26	52	100
North San Francisco Bay P-C Region	110	263	139
Palmdale P-C Region	152	163	7
Palm Springs P-C Region	152	163	7
Placer County	152	387	155
Sacramento County	42	327	679
Sacramento-Fairfield P-C Region	128	109	-15
San Bernardino P-C Region	241	156	-35
San Fernando Valley/Saugus-Newhall*	77	17	-78
San Gabriel Valley P-C Region	322	297	-8
San Luis Obispo-Santa Barbara P-C Region	75	58	-23
Shasta County	52	49	-6
South San Francisco Bay P-C Region	404	506	25
Stanislaus County	45	39	-13
Stockton Lodi P-C Region	232	203	-13
Tehama County	32	30	-6
Temescal Valley-Orange County*	297	862	190
Tulare County**	N/A**	53	N/A**
Ventura County (combined Western Ventura County and Simi Valley P-C Region)*	96	84	-13
Western San Diego County P-C Region	167	265	59
Yuba City-Marysville P-C Region	392	679	73
Total	4,067	7,628	88

* Two P-C Regions have been combined into one study area.
** In Map Sheet 52 (2012) separate values for east and west Merced County and north and south Tulare County were presented. In this update, information is given only for the counties as a whole and not the parts.

Table 3. Comparison of 50-Year Demand Between Map Sheet 52, 2012 and Map Sheet 52, 2018.

AGGREGATE STUDY AREA	Map Sheet 52, 2012 50-Year Demand as of 1/1/11 (million tons)	Map Sheet 52, 2018 50-Year Demand as of 1/1/17 (million tons)	Percent Difference
Bakersfield P-C Region	438	338	-23
Barstow-Victorville P-C Region	159	163	3
Claremont-Upland P-C Region	203	202	0
El Dorado County	76	82	8
Fresno P-C Region	435	305	-30
Glenn County	59	41	-31
Merced County**	N/A**	154	N/A**
Monterey Bay P-C Region	346	333	-4
Nevada County	100	41	-59
North San Francisco Bay P-C Region	521	492	-6
Palmdale P-C Region	577	569	-1
Placer County	151	238	58
Palm Springs P-C Region	295	188	-36
Sacramento County	670	724	8
Sacramento-Fairfield P-C Region	196	295	51
San Bernardino P-C Region	993	939	-5
San Fernando Valley/Saugus-Newhall*	476	387	-19
San Gabriel Valley P-C Region	809	751	-7
San Luis Obispo-Santa Barbara P-C Region	240	226	-6
Shasta County	93	82	-12
South San Francisco Bay P-C Region	1,381	1,320	-4
Stanislaus County	214	160	-25
Stockton Lodi P-C Region	436	409	-6
Tehama County	62	49	-21
Temescal Valley-Orange County*	1,077	1,079	0
Tulare County **	N/A**	130	N/A**
Ventura County (combined Western Ventura County and Simi Valley P-C Regions)*	298	241	-19
Western San Diego County P-C Region	1,014	763	-25
Yuba City-Marysville P-C Region	403	344	-15
Total	12,047	11,045	-8

* Two P-C Regions have been combined into one study area.
** In Map Sheet 52 (2012) separate values for east and west Merced County and north and south Tulare County were presented. In this update, information is given only for the counties as a whole and not the parts.

No additional study areas have been combined in this update. It is likely that in some future update the San Fernando Valley-Saugus Newhall aggregate study area and the Palmdale study area may be combined as permitted reserves in the San Fernando Valley-Saugus Newhall aggregate study area are depleted. In addition, a study of the Greater Sacramento Area currently nearing completion will likely result in the combination of several previously existing study areas.

Changes in Permitted Aggregate Reserves

Fifteen of the study areas shown on the updated map experienced a decrease in permitted aggregate reserves since the 2012 map was completed (See Table 2). Most of these decreases likely represent aggregate production within those study areas since the last update of Map Sheet 52.

A large part of the reduction in the San Fernando Valley-Saugus Newhall study area is due to the subtraction of the 56 million tons of permitted aggregate reserves previously associated with the CEMEX Soledad Canyon Sand and Gravel Mining Project. In 2015, the Bureau of Land Management withdrew the contracts that would have allowed mining. The issue is currently under appeal with the Interior Board of Land Appeals. If, at a future date, the contracts are restored then the permitted reserves will be restored.

Twelve of the study areas shown on the updated map had increases in permitted aggregate reserves. Most of these increases are because of newly permitted or expanded mining operations within the various study areas. An expansion may increase the footprint of the mine or increase permitted mining depth. Some of these increases may be the result of recalculation of the permitted aggregate reserves in a study area.

Total permitted reserves for all the included study areas increased to 7,628 million tons from 4,067 million tons – an apparent increase of 3,561 million tons. The actual increase was likely slightly more because of production since 2010. Approximately two-thirds of the increase is due to permitting activities in the Bakersfield, Fresno, and Sacramento study areas.

Changes in Fifty-Year Demand

Of the study areas shown on the updated Map Sheet 52, five had increases in 50-year demand, two had less than a one percent change, and 20 showed decreases in projected 50-year demand (See Table 3). The large number of study areas with decreasing 50-year demand is likely due in part to incorporation of lower per capita consumption rates caused by the slow recovery of the construction industry in California in the years following the economic recession of 2007-2009.

Comparison of Areas with Less than 10-Years of Permitted Aggregate Reserves

The 2018 Map Sheet 52 shows only one aggregate study area with less than a 10-year supply of permitted aggregate reserves – San Fernando Valley-Saugus Newhall.

Compared to the 2012 version of the map, which showed four aggregate study areas with less than a 10-year supply of aggregate – Sacramento County and the Fresno, San Fernando Valley-Saugus Newhall, and Western San Diego P-C regions.

PART III: OVERVIEW OF CONSTRUCTION AGGREGATE

Construction aggregate was the leading non-fuel mineral commodity produced in California in 2016. Valued at $1.42 billion, aggregate made up about 42 percent of California's $3.4 billion non-fuel mineral production in 2016.

Aggregate Quality and Use

Aggregate normally makes up 80 to 100 percent of the material volume in PCC and AC and provides the bulk and strength to these materials. Rarely, even from the highest-grade deposits, is in-place aggregate physically or chemically suited for every type of aggregate use. Every potential deposit must be tested to determine how much of the material can meet specifications for a particular use, and what processing is required. Specifications for PCC, AC, and various other uses of aggregate have been established by several agencies, such as the U.S. Bureau of Reclamation, the U.S. Army Corps of Engineers, and the California Department of Transportation to ensure that aggregate is satisfactory for specific uses. These agencies and other major consumers test aggregate using standard procedures of the American Society for Testing Materials (ASTM), the American Association of State Highway Officials, and other organizations.

Most PCC and AC aggregate specifications have been established to ensure the manufacture of strong, durable structures capable of withstanding the physical and chemical effects of weathering and use. For example, specifications for PCC and concrete products prohibit or limit the use of rock materials containing mineral substances such as gypsum, pyrite, zeolite, opal, chalcedony, chert, siliceous shale, volcanic glass, and some high-silica volcanic rocks. Gypsum retards the setting time of portland cement; pyrite dissociates to yield sulfuric acid and an iron oxide stain; and other substances contain silica in a form that reacts with alkali substances in the cement, resulting in cracks and "pop-outs."

Specifications also call for precise particle-size distribution for the various uses of aggregate that is commonly classified into two general sizes: coarse and fine. Coarse aggregate is rock retained on a 3/8-inch or a #4 U.S. sieve. Fine aggregate passes a 3/8-inch sieve and is retained on a #200 U.S. sieve (a sieve with 200 weaves per inch). For some uses, such as asphalt paving, particle shape is specified. Aggregate material used with bituminous binder (asphalt) to form sealing coats on road surfaces shall consist of at least 90 percent by weight of crushed particles. Crushed stone is preferable to natural gravel in AC because asphalt adheres better to broken surfaces than to rounded surfaces and the interlocking of angular particles strengthens the AC and road base.

The material specifications for PCC and AC aggregate are more restrictive than specifications for other applications such as Class II base, subbase, and fill. These restrictive specifications make deposits acceptable for use as PCC or AC aggregate the scarcest and most valuable aggregate resources. Aggregate produced from such deposits can be, and commonly is, used in applications other than concrete. PCC- and AC-grade aggregate deposits are of major importance when planning for future

availability of aggregate commodities because of their versatility, value, and relative scarcity.

Factors Affecting Aggregate Deposit Quality

The major factors that affect the quality of construction aggregate are the rock type and the degree of weathering of the deposit. Rock type determines the hardness, durability, and potential chemical reactivity of the rock when mixed with cement to make concrete. In alluvial sand and gravel deposits, rock type is variable and reflects the rocks present in the drainage basin of the stream or river. In crushed stone deposits, rock type is typically less variable, although in some types of deposits, such as sandstones or volcanic rocks, there may be significant variability of rock type. Rock type may also influence aggregate shape. For example, some metamorphic rocks such as slates tend to break into thin platy fragments that are unsuitable for many aggregate uses, while many volcanic and granitic rocks break into blocky fragments more suited to a wide variety of aggregate uses. Deposit type also affects aggregate shape. For example, in alluvial sand and gravel deposits, the natural abrasive action of the stream rounds the edges of rock particles, in contrast to the sharp edges of particles from crushed stone deposits.

Weathering is the in-place physical or chemical decay of rock materials at or near the Earth's surface. Weathering commonly decreases the physical strength of the rock and may make the material unsuitable for high strength and durability uses. Weathering may also alter the chemical composition of the aggregate, making it less suitable for some aggregate uses. If weathering is severe enough, the material may not be suitable for use as PCC or AC aggregate. Typically, the older a deposit is, the more likely it has been subjected to weathering. The severity of weathering commonly increases with increasing age of the deposit.

Comparison of Alluvial Sand and Gravel to Crushed Stone Aggregate

The preferred use of one aggregate material over another in construction practices depends not only on specification standards, but also on economic considerations. Alluvial gravel is typically preferred to crushed stone for PCC aggregate because the rounded particles of alluvial sand and gravel result in a wet mix that is easier to work than a mix made of angular fragments. Also, crushed stone is less desirable in applications where the concrete is placed by pumping because sharp edges will increase wear and damage to the pumping equipment. The workability of a mix consisting of portland cement with crushed stone aggregate can be improved by adding more sand and water, but more cement must then be added to the mix to meet concrete durability standards. This results in a more expensive concrete mix and a higher cost to the consumer.

In addition, aggregate from a crushed stone deposit is typically more expensive than that from an alluvial deposit due to the additional costs associated with the ripping, drilling and blasting necessary to remove material from most quarries and the additional crushing required to produce the various sizes of aggregate. Manufacturing sand by crushing is costlier than mining and processing naturally occurring sand. Although more care is required in pouring and placing a wet mix containing crushed stone, PCC made with this aggregate is as satisfactory as that made with alluvial sand and gravel of comparable

rock quality. Owing to environmental concerns and regulatory constraints in many areas of the state, it is likely that extraction of sand and gravel resources from instream and floodplain areas will become less common in the future. If this trend continues, crushed stone may become increasingly important to the California market.

Aggregate Price

The price of aggregate throughout California varies considerably depending on location, quality, and supply and demand. The highest quality aggregate, and typically most costly, is that which meets the specifications for use in PCC or AC. All prices discussed in this section are for PCC/AC-grade aggregate at the plant site or FOB (freight on board). Transportation cost, which adds to the final cost of aggregate, is discussed in the next section.

Regional variations make it difficult to estimate the average price of PCC-grade aggregate for the state. Over the last decade, prices have varied from more than $20 per ton in areas with depleting or depleted aggregate supplies and high demands such as San Diego and parts of the Bay Area, to $9 to $12 per ton in areas such as Yuba City-Marysville with abundant aggregate supplies and low to moderate demands. In many areas of the state it is likely that prices fall between these two endmembers.

Transportation and Increasing Haul Distances

Transportation plays a major role in the cost of aggregate to the consumer. Aggregate is a low-unit-value, high-bulk-weight commodity, and it must be obtained from nearby sources to minimize both the dollar cost to the aggregate consumer and other environmental and economic costs associated with transportation. If nearby sources do not exist, then transportation costs may significantly increase the cost of the aggregate by the time it reaches the consumer.

This makes the mining of aggregate much more competitive than most other mined commodities. The location, distance to market, and access to major transportation routes greatly influence the economic feasibility of an aggregate mine.

Most aggregate in California moves to its final point of use by truck. Trucking is typically charged at an hourly rate and rates may vary in different regions of the state. The typical distance traveled per hour may also vary, being greater in less congested or more rural areas, and less in densely populated urban areas. Other factors that affect hauling rates include fuel costs, toll bridges and toll roads, road conditions, and terrain. Transportation cost is the principal constraint defining the market area for an aggregate mining operation and the cost of transporting aggregate over long distances can equal or exceed the base cost of the aggregate.

Throughout California, aggregate haul distances have gradually increased as more local sources of aggregate diminish. Consequently, older P-C regions, most of which were established in the late 1970s, have changed considerably since their boundaries were drawn. This is especially evident in Los Angeles, Orange, and Ventura counties where aggregate shortages have led to the merging of six P-C regions shown on the original

(2002) map into three regions for the updated maps. In some parts of the state, one-way haul distances that were 20-30 miles decades ago are now sometimes 100 miles or more. Increased aggregate haul distances not only increase the cost of aggregate to the consumer, but also increase environmental and societal impacts such as increased fuel consumption, carbon dioxide (CO_2) emissions, air pollution, traffic congestion, and road maintenance.

Imported Aggregate

In some regions, local aggregate production is sufficient to meet the local demand, but in others, there is more demand than can be met by local production leading to a shortfall that is typically met by importing construction aggregate from neighboring aggregate producing regions.

There are both advantages and disadvantages to importing construction aggregate. Imports can provide needed aggregate in areas with depleted reserves/resources and can supply specific types of aggregate that are in short supply in the region. However, imported aggregate is often more expensive because of additional transportation costs. Increased costs for aggregate leads to more expensive construction projects in both the public and private sectors. Importing aggregate from neighboring regions also leads to more rapid depletion of reserves/resources in those regions, potentially contributing to price increases or aggregate shortages in those regions.

In addition to the greater economic costs, there are often increased environmental and societal costs associated with the import of aggregate when compared to local production. The environmental impacts include higher emissions of greenhouse gases, such as CO_2, and air pollution. The societal impacts include increased traffic congestion and road wear and maintenance due to increased truck traffic. In the case of imports, these environmental and societal impacts occur both within the importing region and in the neighboring regions that supply the material and through which the material is transported.

Currently almost all aggregate produced or imported into California is transported to its final point of use by truck. In discussions of aggregate import, other modes of transportation such as rail, barge, or ship are often mentioned as alternative methods of moving aggregate. In 2011, the San Diego Association of Governments (SANDAG) Service Bureau published the San Diego Region Aggregate Supply Study (SANDAG Service Bureau, 2011). This study included an evaluation of fuel use and CO_2 emissions for several scenarios involving different transport options for importing aggregate into the San Diego area. While the published study is specific to the San Diego region, it provides an interesting analysis of the impacts of importing construction aggregate. The following discussion is adapted from Special Report 240 (Gius, Busch, and Miller, 2017).

The SANDAG study looked at the impacts based on various combinations of transport options for the following five scenarios:

- In region production
- Import by truck from neighboring regions
- Import by rail/truck from San Bernardino County
- Import by barge/truck from Baja California, Mexico
- Import by ship/truck from British Columbia, Canada.

Fuel consumption, CO_2 emissions, and some other pollutant emissions (nitrogen oxides (NO_x) and particulate matter (PM)) were estimated based on round-trip travel, with aggregate transported to the point of use and the vehicle returning empty. For scenarios involving non-truck transport (rail, barge, and ship), delivery to the final point of use by truck was included. The transport scenarios and transport type and mileage considerations are presented in Table 4. More detail can be found in the SANDAG study (SANDAG Service Bureau, 2011).

Table 4. Summary of SANDAG Aggregate Transport Scenarios

SANDAG AGGREGATE TRANSPORT SCENARIOS	
TRANSPORT OPTION	**MILEAGE BY MODE**
Local: Truck	26 miles one way / 52 miles round trip
Import: Truck	100 miles one way / 200 miles round trip
Import: Rail + Truck	Rail: 200 miles one way / 400 miles round trip Truck: 20 miles one way / 40 miles round trip
Import: Barge + Truck	Barge: 70 miles one way / 140 miles round trip Truck: 20 miles one way / 40 miles round trip
Import: Ship + Truck	Ship: 1,540 miles one way / 3,080 miles round trip Truck: 20 miles one way / 40 miles round trip

Adapted from SANDAG Service Bureau, 2011

Transportation methods that move larger amounts of aggregate per load can be more efficient in terms of fuel consumption (gallons of fuel consumed per net ton-mile traveled) and CO_2, NO_x, and PM emissions (grams of CO_2, NO_x, and PM emitted per net ton-mile traveled). However, even though these transport options may be more efficient on a net ton-mile basis, the total fuel consumption and emissions are dependent on the distance traveled. If those distances are large, total fuel consumption and emissions may exceed those of less efficient transportation methods over shorter distances. This is demonstrated by SANDAG's findings. Even though transport by rail, barge, and ship

have lower fuel consumption and CO_2 emissions per net ton-mile than transport by truck (Table 5), the total fuel usage and CO_2 emissions for those transport scenarios are greater than in-region production with truck delivery because of the distances involved (Table 6).

Table 5. Fuel Consumption and CO_2 Emissions from Aggregate Transport with Payload

Mode	Payload	Fuel Consumption (gallons/net ton per mile)	CO_2 Emissions (grams/net ton per mile)
Truck	25 tons	0.0086	86.9
Rail	100 tons per hopper car	0.0021	21.4
Barge	1,500 tons	0.0068	69.6
Ship	72,786 tons	0.0004	5.3

Adapted from Tables 4-2 and 4-4, SANDAG Service Bureau, 2011

Table 6. Fuel Consumption and Emissions for Aggregate Transport Scenarios – Estimates per Million Tons of Aggregate Transported

Transport Option	Total Fuel Consumption (gallons)	Total CO_2 Emissions (metric tons)	Total NO_x Emissions (metric tons)	Total PM Emissions (metric tons)
Local: Truck	296,000	3,000	26.5	1.1
Import: Truck	1,138,000	11,537	102	4.4
Import: Rail + Truck	788,000	7,985	120.4	3.3
Import: Barge + Truck	804,000	8,210	147.1	5.1
Import: Ship + Truck	1,406,000	16,703	282.2	16.3

Adapted from SANDAG Service Bureau, 2011

Table 6 shows that, per million tons of aggregate transported, local production with transport by truck consumes less fuel and produces less CO_2, NOx, and PM than the other transport options investigated by SANDAG. Transport Option 2, import of one million tons of aggregate by truck from neighboring regions, consumes almost four times as much fuel and produces almost four times the emissions as the local production and delivery of a similar amount of aggregate. In addition, the impacts occur not only in the Western San Diego County P-C Region, but in neighboring regions through which the materials are transported.

While this analysis pertains to San Diego County, similar analyses, with appropriate parameters, could be done for other regions. What it does point out is that, even though some methods of transportation may be more efficient on a per ton-mile basis, if the transport distances are great enough, the overall impacts may be greater than those of local production.

Factors Affecting Aggregate Demand

Several factors may influence aggregate demand. In periods of high economic growth, demand may increase, depleting permitted reserves more rapidly than expected. Large projects, such as the construction or maintenance of major infrastructure, or rebuilding after a disaster such as an earthquake could also deplete permitted reserves more rapidly. Increased demand from neighboring regions with dwindling or depleted permitted reserves may also accelerate the depletion of permitted reserves in a study area. Conversely, a period of declining economy or of low economic growth, such as that during the recession of 2007 to 2009 and the subsequent slow economic recovery, can reduce demand for a period of time, extending the life of permitted reserves. In some cases, importation of aggregate from other areas may extend the life of a region's permitted reserves.

SUMMARY AND CONCLUSIONS

Aggregate is essential to the needs of modern society, providing material for the construction and maintenance of roadways, dams, canals, buildings, and other parts of California's infrastructure. Aggregate is also found in homes, schools, hospitals, and shopping centers.

In the 30-year period from 1987 to 2016, Californians consumed an average of about 180 million tons of construction aggregate (all grades) per year or about 5.3 tons per person per year. Demand for aggregate is expected to increase as the state's population continues to grow and infrastructure is maintained, improved, and expanded. For example, the Road Repair and Accountability Act of 2017 (SB1) will provide approximately 5 billion dollars annually for a variety of maintenance, rehabilitation, and other transportation related projects over the next decade. Because aggregate is a low unit-value, high-bulk-weight commodity, it must be obtained from nearby sources to minimize the dollar cost to the aggregate consumer and other environmental and economic costs associated with transportation.

Comparing regional needs to available reserves and resources demonstrates the important aggregate resource issues facing lead agencies in California. These issues include the need to plan carefully for the use of lands containing these resources and the need to consider the permitting of additional aggregate resources before currently permitted deposits are depleted.

Increasingly, as existing permitted aggregate supplies are depleted, local land-use decisions regarding aggregate resources are having regional impacts that go beyond local jurisdictional boundaries. Planning for future construction aggregate needs in our communities should take into consideration not only the needs of the community, but also the needs of the region and neighboring regions. Importing aggregate from neighboring regions leads to more rapid depletion of reserves/resources in those regions, potentially contributing to price increases or aggregate shortages in those regions.

In addition to the greater economic costs, there are often increased environmental and societal costs associated with the import of aggregate when compared to local production. The environmental impacts include higher emissions of greenhouse gases, such as CO_2, and air pollution. The societal impacts include increased traffic congestion and road maintenance due to increased truck traffic. In the case of imports, these environmental and societal impacts occur both within the importing region and in the neighboring regions that supply the material and through which the material is transported. Finally, reliance on imports places responsibility and authority for permitting related to the local aggregate supply in the hands of decision makers in other jurisdictions.

For more than 40 years, under SMARA, CGS has conducted on-going studies that identify and evaluate aggregate resources throughout the state. Map Sheet 52 (2018) is an updated summary of supply and demand data from these studies. The map presents a statewide overview of projected future aggregate needs and currently permitted reserves.

The following conclusions can be drawn from Map Sheet 52 (2018) and this accompanying report:

- In the next 50 years, the study areas identified on Map Sheet 52 (2018) will need approximately 11 billion tons of aggregate.

- The study areas shown on Map Sheet 52 currently have about 7.6 billion tons of permitted reserves, which is about 69 percent of the total projected 50-year aggregate demand identified for these study areas. This is about 10 percent of the total aggregate resources located within the study areas.

- One aggregate study area is projected to have 10 or fewer years of permitted aggregate reserves remaining as of January 2017 (San Fernando Valley / Saugus Newhall area).

- Seven aggregate study areas have between 11 and 20 years of aggregate reserves remaining.

- Ten aggregate study areas have between 21 and 30 years of aggregate reserves remaining.

- Four aggregate study areas have between 31 and 40 years of aggregate reserves remaining.

- Two aggregate study areas have between 41 and 50 years of aggregate reserves remaining.

- Five aggregate study areas (Bakersfield, Fresno, and Yuba City-Marysville P-C regions, and Nevada and Placer counties) have more than 50 years of aggregate reserves remaining.

The information presented on Map Sheet 52 (2018) and in the referenced reports is provided to assist land use planners and decision makers in identifying those areas containing construction aggregate resources, and to estimate potential future demand for these resources in different regions of the state. This information is intended to help planners and decision makers balance the need for construction aggregate with the many other competing land use issues in their jurisdictions, and to provide for adequate supplies of construction aggregate to meet future needs.

REFERENCES CITED

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State Mining and Geology Board, 2000, California surface mining and reclamation policies and procedures: Special Publication 51, third revision.

Gius, F.W., Busch, L.L., and Miller, R.V., 2017, Update of Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the Western San Diego County Production-Consumption Region, California. California Geological Survey, Special Report 240, 50p.

Kohler, S.L., 2002, Aggregate Availability in California, California Geological Survey, Map Sheet 52, scale 1:1,100,000, 26p.

Kohler, S.L., 2006, Aggregate Availability in California, California Geological Survey, Map Sheet 52 (Updated 2006), scale 1:1,100,000, 26p.

San Diego Association of Governments Service Bureau, January 2011, San Diego Region Aggregate Supply Study: 118 p., http://www.sandag.org/uploads/publicationid/publicationid_1558_12638.pdf.

California Department of Finance, Demographic Research Unit, *Total Estimated and Projected Population for California and Counties: July 1, 2010 to July 1, 2060 in 1-year increments.* January 2018.

APPENDIX: MINERAL LAND CLASSIFICATION REPORTS BY THE CALIFORNIA GEOLOGICAL SURVEY (Special Reports and Open-File Reports, with information on aggregate resources)

SPECIAL REPORTS

SR 132: Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the Yuba City-Marysville Production-Consumption Region. By Habel, R.S., and Campion, L.F., 1986.

*SR 143: Part I: Mineral Land Classification of the Greater Los Angeles Area: Description of the Mineral Land Classification Project of the Greater Los Angeles Area. By Anderson T. P., Loyd, R.C., Clark, W.B., Miller, R.M., Corbaley, R., Kohler, S.L., and Bushnell, M.M., 1979.

*SR 143: Part II: Mineral Land Classification of the Greater Los Angeles Area: Classification of Sand and Gravel Resource Areas, San Fernando Valley Production-Consumption Region. By Anderson T.P., Loyd, R.C., Clark, W.B., Miller, R.M., Corbaley, R., Kohler, S.L., and Bushnell, M.M., 1979.

*SR 143: Part III: Mineral Land Classification of the Greater Los Angeles Area: Classification of Sand and Gravel Resource Areas, Orange County-Temescal Valley Production-Consumption Region. By Miller, R.V., and Corbaley, R., 1981.

*SR 143: Part IV: Mineral Land Classification of the Greater Los Angeles Area: Classification of Sand and Gravel Resource Areas, San Gabriel Valley Production-Consumption Region. By Kohler, S.L., 1982.

*SR 143: Part V: Mineral Land Classification of the Greater Los Angeles Area: Classification of Sand and Gravel Resource Areas, Saugus-Newhall Production-Consumption Region and Palmdale Production-Consumption Region. By Joseph, S.E, Miller, R.V., Tan, S.S., and Goodman, R.W., 1987.

*SR 143: Part VI: Mineral Land Classification of the Greater Los Angeles Area: Classification of Sand and Gravel Resource Areas, Claremont-Upland Production-Consumption Region. By Cole, J.W., 1987.

*SR 143: Part VII: Mineral Land Classification of the Greater Los Angeles Area: Classification of Sand and Gravel Resource Areas, San Bernardino Production-Consumption Region. By Miller, R.V., 1987.

*SR 145: Part I: Mineral Land Classification of Ventura County: Description of the Mineral Land Classification Project of Ventura County. By Anderson, T.P., Loyd, R.C., Kiessling, E.W., Kohler, S.L., and Miller, R.V., 1981.

*SR 145: Part II: Mineral Land Classification of Ventura County: Classification of the Sand, Gravel, and Crushed Rock Resource Areas, Simi Production-Consumption Region. By Anderson, T.P., Loyd, R.C., Kiessling, E.W., Kohler, S.L., and Miller, R.V., 1981.

*SR 145: Part III: Mineral Land Classification of Ventura County: Classification of the Sand and Gravel, and Crushed Rock Resource Areas, Western Ventura County Production-Consumption Region. By Anderson, T.P., Loyd, R.C., Kiessling, E.W., Kohler, S.L., and Miller, R. V., 1981.

*SR 146: Part I: Mineral Land Classification: Project Description: Mineral Land Classification for Construction Aggregate in the San Francisco-Monterey Bay Area. By Stinson, M.C., Manson, M.W., and Plappert, J.J., 1987.

*SR 146: Part II: Mineral Land Classification: Aggregate Materials in the South San Francisco Bay Production-Consumption Region. By Stinson, M.C., Manson, M.W., and Plappert, J.J., 1987.

*SR 146: Part III: Mineral Land Classification: Aggregate Materials in the North San Francisco Bay Production-Consumption Region. By Stinson, M.C., Manson, M.W., and Plappert, J.J., 1987.

*SR 146: Part IV: Mineral Land Classification: Aggregate Materials in the Monterey Bay Production-Consumption Region. By Stinson, M.C., Manson, M.W., and Plappert, J.J., 1987.

*SR 147: Mineral Land Classification: Aggregate Materials in the Bakersfield Production-Consumption Region. By Cole, J.W., 1988.

*SR 153: Mineral Land Classification: Aggregate Materials in the Western San Diego County Production-Consumption Region. By Kohler, S.L., and Miller, R.V., 1982.

SR 156: Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the Sacramento-Fairfield Production-Consumption Region. By Dupras, D.L., 1988.

*SR 158: Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region. By Cole, J.W., and Fuller, D.R., 1986.

*SR 159: Mineral Land Classification: Aggregate Materials in the Palm Springs Production-Consumption Region. By Miller, R.V., 1987.

*SR 160: Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the Stockton-Lodi Production-Consumption Region. By Jensen, L.S., and Silva, M.A., 1989.

*SR 162: Mineral Land Classification: Portland Cement Concrete Aggregate and Active Mines of All Other Mineral Commodities in the San Luis Obispo-Santa Barbara Production-Consumption Region. By Miller, R.V., Cole, J.W., and Clinkenbeard, J.P., 1989.

SR 164: Mineral Land Classification of Nevada County, California. By Loyd, R.C., and Clinkenbeard, J.P., 1990.

*SR 165: Mineral Land Classification of the Temescal Valley Area, Riverside County, California. By Miller, R.V., Shumway, D.O., and Hill, R.L., 1991.

SR 173: Mineral Land Classification of Stanislaus County, California. By Higgins, C.T., and Dupras, D.L., 1993.

SR 198: Update of Mineral Land Classification for Portland Cement Concrete-Grade Aggregate in the Palm Springs Production-Consumption Region, Riverside County, California. Busch, L.L., 2007.

SR 199: Update of Mineral Land Classification for Portland Cement Concrete-Grade Aggregate in the Stockton-Lodi Production-Consumption Region, San Joaquin and Stanislaus Counties, California. Smith, J.D. and Clinkenbeard J.P., 2012.

SR202 Update of Mineral Land Classification for Portland Cement Concrete-Grade Aggregate in the Claremont-Upland Production-Consumption Region, Los Angeles and San Bernardino Counties, California. Miller, R.V. and Busch, L.L., 2007.

SR 205 Update of Mineral Land Classification of Aggregate Resources in the North San Francisco Bay P-C Region: Sonoma, Napa, and Marin Counties and Southwestern Solano County, California. Miller, R.V. and Busch, L.L., 2013

SR 206 Update of Mineral Land Classification for Portland Cement Concrete-Grade Aggregate in the San Bernardino Production-Consumption Region, San Bernardino and Riverside Counties, California. Miller, R.V. and Busch, L.L., 2008.

SR 209 Update of Mineral Land Classification for Portland Cement Concrete-Grade Aggregate in the San Gabriel Valley Production-Consumption Region, Los Angeles County, California. Kohler, S.L., 2010.

SR 210 Update of Mineral Land Classification: Aggregate Materials in the Bakersfield Production-Consumption Region, Kern County, California. Busch, L.L., 2009.

SR 215 Update of Mineral Land Classification: Aggregate Materials in the San Luis Obispo-Santa Barbara Production-Consumption Region, California. Busch, L.L. and Miller, R.V., 2011.

SR 231 Update of Mineral Land Classification for Portland Cement Concrete-Grade Aggregate in the Temescal Valley Production Area, Riverside County, California. Miller, R.V. and Busch, L.L., 2014.

SR 240 Update of Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the Western San Diego County Production-Consumption Region, California. Gius, F.W., Busch, L.L., and Miller, R.V. 2017.

***** These Mineral Land Classification reports have been updated and are not shown on the index map (lower left-hand corner of Map Sheet 52).

OPEN-FILE REPORTS

OFR 92-06: Mineral Land Classification of Concrete Aggregate Resources in the Barstow-Victorville Area. By Miller, R.V., 1993.

OFR 93-10: Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties, California: Part I - Ventura County. By Miller, R.V., 1993.

OFR 94-14: Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties, California: Part II - Los Angeles County. By Miller, R.V., 1994.

OFR 94-15: Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties, California: Part III - Orange County. By Miller, R.V., 1995.

OFR 95-10: Mineral Land Classification of Placer County, California. By Loyd, R.C., 1995.

OFR 96-03: Update of Mineral Land Classification: Aggregate Materials in the South San Francisco Bay Production-Consumption Region. By Kohler-Antablin, S.L., 1996.

*****OFR 96-04: Update of Mineral Land Classification: Aggregate Materials in the Western San Diego County Production-Consumption Region. By Miller, R.V., 1996.

OFR 97-01: Mineral Land Classification of Concrete Aggregate Resources in the Tulare County Production-Consumption Region, California. By Taylor, G.C., 1997.

OFR 97-02: Mineral Land Classification of Concrete-Grade Aggregate Resources in Glenn County, California. By Shumway, D.O., 1997.

OFR 97-03: Mineral Land Classification of Alluvial Sand and Gravel, Crushed Stone, Volcanic Cinders, Limestone, and Diatomite within Shasta County, California. By Dupras, D.L, 1997.

OFR 99-01: Update of Mineral Land Classification: Aggregate Materials in the Monterey Bay Production-Consumption Region, California. By Kohler-Antablin, S.L., 1999.

OFR 99-02: Update of Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region, California. By Youngs, L.G. and Miller, R.V., 1999.

OFR 99-08: Mineral Land Classification of Merced County, California. By Clinkenbeard, J.P., 1999.

OFR 99-09: Mineral Land Classification: Portland Cement Concrete-Grade Aggregate and Clay Resources in Sacramento County, California. By Dupras, D.L., 1999.

OFR 2000-03: Mineral Land Classification of El Dorado County, California. By Busch, L. L., 2001

OFR 2000-18: Mineral Land Classification of Concrete-Grade Aggregate Resources in Tehama County, California. By Foster, B.D., 2001

***** These Mineral Land Classification reports have been updated and are not shown on the index map (lower left-hand corner of Map Sheet 52).

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: DISTRICT DIRECTORS

Date: November 18, 2011

From: MALCOLM DOUGHERTY
Acting Director

Subject: **Aggregate Resource Policy Statement and Tools**

This memo is in response to multiple requests from resource developers, planning departments, and California Department of Transportation (Caltrans) staff about our policy toward mining projects. It clarifies the policy and provides tools for districts to encourage an increased supply of aggregate materials statewide.

Our policy is that Caltrans will continue to work with local and State agencies to help gain approval of new aggregate mining sites throughout the state, acknowledging the need for an increased aggregate supply. As a responsible agency under the California Environmental Quality Act, however, we do not endorse specific mining projects. In light of this, Caltrans will provide the technical assessment and information pertaining to availability locally as well as infrastructure needs of aggregate projects in your region, including education of local stakeholders and early public engagement regarding long-term aggregate issues.

The following tools are attached to aid you in this regard:

- A sample letter that can be addressed to our local and regional transportation planning partners. This letter outlines our policy toward mineral resource development in general.
- The 2011 update of the Construction Aggregate Supply Limitations Fact Sheet.
- The 2006 Department of Conservation Map Sheet 52, which shows the permitted aggregate materials supply in relation to projected demand over 50 years.

The above tools were developed in support of an ongoing consortium known as the Aggregate Availability Group. This group, as per its 2009 charter, includes management and staff-level representatives from the Caltrans Divisions of Planning, Design, and Construction, the California Business, Transportation and Housing Agency, the California Department of Conservation, the California Construction and Industrial Materials Association, and the Governor's Office of Planning and Research. One of the main goals of this effort has been to produce maps and other tools to engage the public, legislators, and local jurisdictions. These staff will apprise you of new materials as they become available.

Please take the time to review the attached tools. This issue is as important as ever, and it is my hope that ongoing collaboration will help us secure the resources that we need to provide world-class transportation options for years to come.

Attachments:
(1) Sample Policy Statement Letter
(2) Construction Aggregate Supply Limitations Fact Sheet
(3) Department of Conservation Map Sheet 52, Aggregate Availability in California

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

DEPARTMENT OF TRANSPORTATION

<DISTRICT>
<ADDRESS>
<CITY, STATE, ZIP>
<PHONE>
<FAX >
<WEB URL>

Flex your power!
Be energy efficient!

<DATE>

<Name>
<Title>
<Organization>
<Street Address>
<City, State, Zip Code>

Dear<RECIPIENT>:

As you are aware, aggregate resources play a vital role in our efforts to build and improve our State's infrastructure. Indeed, our State's mineral resource development is essential to our economic well-being, as well as our intentions to grow more responsibly and provide the safest, fastest, and most efficient transportation options possible. While it is important that we find ways to meet our current needs for construction materials, we must also anticipate future demand and expand our aggregate supply in an environmentally appropriate and culturally circumspect manner. In doing so, we prepare our future generations to navigate the challenges that our State will face as population increases and accessible resources grow scarce.

Throughout the State, attention is being given to what is increasingly seen as an urgent resource issue. The recently enrolled Assembly Bill 566 (Galgiani, 2011) codified several legislative findings, among them that mineral extraction is essential to the needs of society, and that the development of local mineral resources is vital in reducing truck emissions in our State.

The California Department of Transportation (Caltrans) continues to coordinate with public decision-makers, the construction industry, and government officials in exploring opportunities to improve the reclamation and permitting processes and increase California's aggregate supply. While the pressure for resources has eased for the last three years due to a sharp decline in residential construction, the transportation sector continues to build projects and the housing market is showing signs of regaining strength. This is not a time to relax our efforts, but to redouble them in anticipation of full economic recovery.

In the last five years, Caltrans has delivered approximately 1,700 highway projects worth $19 billion that were moved into construction. There are currently 825 construction contracts underway with a contract value that exceeds $10 billion. Highway projects are only one part of the story, however, as local and regional agencies continue to maintain and improve the roads in their jurisdictions.

In addition to the outlay of the traditional transportation agencies, the California High Speed Rail Authority expects to break ground on the first 179 mile stretch of its high-speed railway in fall 2012. This section, from Merced to Bakersfield, will require over five million tons of sand, gravel, and crushed stone, which is about four percent of the total production that the State saw in 2009.

With the passage of SB 391 (Liu, 2009) and SB 375 (Steinberg, 2008), Caltrans and local

transportation agencies were challenged to conceive of new ways to reduce greenhouse gas (GHG) emissions while providing world class transportation facilities for our constituents. The statewide modal plans and Regional Transportation Plans, which shape California's transportation future, outline extensive improvements to the current system. Yet, between long truck hauls averaging 50 miles and international importing of materials, the GHG impact of aggregate delivery continues to mount. An increased aggregate reserve that is closer to construction sites is key to addressing our dire air quality and climate change concerns.

While we are continuing to work with local and State agencies to help gain approval of new aggregate mining sites throughout the state, there is still much to be done to ensure that these essential resources will be available for development in the far reaches of our long-range plans. I would like to encourage you to explore new strategies to increase aggregate reserves in your region, including education of local stakeholders, early public engagement, and willingness to collaborate in the mitigation of environmental and transportation system impacts from aggregate production and distribution.

The attached Fact Sheet provides information on the potential economic, social, air quality, and environmental factors that are affected by local aggregate supply. This is a good starting point for collaborative discussions that aim to find solutions to issues regarding aggregate availability. Also attached is a map that shows statewide aggregate supply and demand.

Finally, I would like to invite you to contact <CALTRANS DISTRICT REPRESENTATIVES> (http://www.dot.ca.gov/localoffice.htm), who are available upon request to speak at public meetings in your area regarding the importance of increasing California's aggregate supply in an environmentally sustainable manner. While the permitting of new mining facilities must be done with attention to all of the possible impacts to surrounding areas, Caltrans encourages the development of new sources for construction aggregate. Our economy and our environment depend on it.

Please share this information with your planning commissions, city councils, and county boards of supervisors.

Thank you in advance for helping to improve mobility across California.

Sincerely,

<Signature Block Name>
District Director

Attachments:
(1) 2011 Construction Aggregate Supply Limitations Fact Sheet
(2) Department of Conservation Map Sheet 52, *Aggregate Availability in California*

Construction Aggregate Supply Limitations
Some Estimates of Economic Impact–November 2011

- Aggregates are low-value, heavy-weight building materials used in construction, including sand, gravel, crushed stone, and recycled concrete. Aggregates are mined and either used as raw material (for example, as foundations) or serve as composite materials in the production of concrete and asphalt. The main end markets for aggregates include private residential construction (34 percent), commercial construction (17 percent), and public infrastructure projects (43 percent, including 26 percent for public highways, streets and transit).

- Aggregates are usually shipped from quarries or production sites close to their end market because transportation is a major element in the cost of delivered aggregates and the cost depends on the distance of the delivery. According to the industry, shipping costs for aggregates can outweigh production costs if the material is trucked more than 20 miles.[1] Permitting new aggregate sites would lead to shorter haul distance to minimize transport/shipping cost.

- According to the California Geological Survey (CGS), California has an estimated 74 billion tons of aggregate resources underlying mineral lands classified by the State Geologist. However, only about six to seven percent have actually been permitted by local agencies for mining activities. Permitting of mining sites is difficult and time consuming due to environmental, land development, and zoning laws, and could take between five and ten years. At the current rate of production, available aggregate supply in some areas in the State could be depleted in a decade.

- According to the California Department of Finance, housing construction activity in California more than doubled between 1996-2005, the longest sustained growth period in recent history; but experienced more than 80 percent decline during 2006-2009 (from 209 to 36 thousand units). Despite a 23 percent rebound in housing construction spending in 2010, overall construction industry in California remains depressed. This has contributed to a significant reduction in both production and value of construction aggregate in recent years.

- According to the CGS, California produced 133.5 million tons (valued at $1.4 billion) of construction sand, gravel, and crushed stone in 2009, compared to 237.3 million tons (valued at $1.9 billion) in 2006, an almost 44 percent drop since 2006. The transportation of 133.5 million tons of construction aggregates generates about 5.3 million truckloads (@ 25 tons per truck), or a total of 10.7 million truck trips a year (including empty trucks returning to the aggregate sites) related to the transportation of construction aggregates in the State.

- According to the Teichert Construction and West Coast Aggregates, Inc. the average hauling distance for aggregates in California may be as high as 50 miles. Truck transportation accounts for about 99 percent of shipping aggregates for 40 miles or less.[2] At an average 50-mile distance, the total aggregate-truck VMT would be 535 million miles per year (10.7 million trucks x 50 miles).

- Let us assume that permitting additional mining facilities would reduce the average hauling distance from 50 to 35 miles statewide. Using an average hauling distance of 35 miles, the total annual aggregate-truck miles of travel would be 375 million miles (10.7 million trucks x 35 miles). The 15-mile shorter hauling distance would reduce aggregate-truck miles of travel by 160 million miles per year (535-375), and annual diesel fuel consumption by 20 million gallons [using California Air Resources Board (CARB) diesel fuel consumption rate of 0.13 gallons per vehicle-mile at 55-60 mph speed].

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[1] Therese Dunphy, "Evening the Playing Field," *Aggregates Manager*, August 2006.
[2] Tina Grady Barbaccia, "Off-highway Transportation," *Aggregates Manager*, July 2006.

- A recent University of California, Berkeley study[3] confirms that the most likely, and dominant, effect of the opening of new sites for the production of construction aggregates would be a reduction in truck miles of travel for hauling aggregates (i.e., new quarry will be located closer to the users to minimize transportation costs), thus a reduction in emissions from trucks.

- Based on the CARB emission factors estimates, and assuming an average 55-60 miles per hour speed, a reduction of 160 million miles of truck travel (or 20 million gallons of diesel fuel consumption) would reduce truck emissions (CO, NOx, PM10, SOx, VOC, and CO2) by about 22,436 tons a year.

- The total transportation cost of aggregates (at $0.10 per ton per mile) shipped 35-miles average distance throughout California would be $936 million (10.7 million trucks x 25 tons x 35 miles x $0.1), and over $1.3 billion if shipped an average distance of 50 miles. The statewide transportation cost savings of reduced hauling distance would amount to $376 million a year (or a 30 percent cost savings).

- The California Department of Transportation (Caltrans) estimates that on average, about $2.5 billion is spent on State and local capital outlay projects each year, and on average, aggregates account for 8-10 percent of total project costs, or about $250 million annually. A 30 percent increase/decrease in shipping cost of aggregates would increase/decrease the total annual project costs by $75 million per year.

- The reduction in aggregate-related truck miles of travel would also reduce traffic congestion and traffic accidents on roads, but these impacts would be difficult to estimate. An additional benefit from truck trip reduction would be reduced pavement deterioration. Caltrans expects to spend about $700 million annually on pavement rehabilitation projects. Assuming trucks account for 60 percent of the pavement damage on the State highways, and aggregate-trucks on average account for 5 percent of all heavy truck travel on the State highways, the trucks shipping aggregates would account for about $20 million of cost savings in the pavement rehabilitation each year.

- Project delays due to lack of aggregate supply in the area, would also result in project cost escalation and reduced user benefits (reduced travel time and accidents) that would have otherwise been generated. A delay of 10 percent of the projects (or $250 million in capital outlay expenditures) for one year would increase the cost of the State and local capital outlay program by $13 million a year (at 5 percent average cost escalation factor).

- Generalizing, and pro rating, the user benefits estimated for the 2008 Interregional Transportation Improvement Program projects, a delay of ten percent of the capital outlay program for one year could also cost California about $97 million in increased roadway congestion and traffic accidents.

In conclusion, the overall picture may indicate that the concerns over the limited supply of construction aggregates may have eased for now due to the severe housing decline and economic slowdown. However, over the long run, with the eventual housing and economic rebound, the supply-demand imbalance will continue for many areas. Meanwhile, for some specific localities and construction projects, the challenge of adequate and cost-effective supply of construction aggregates persists.

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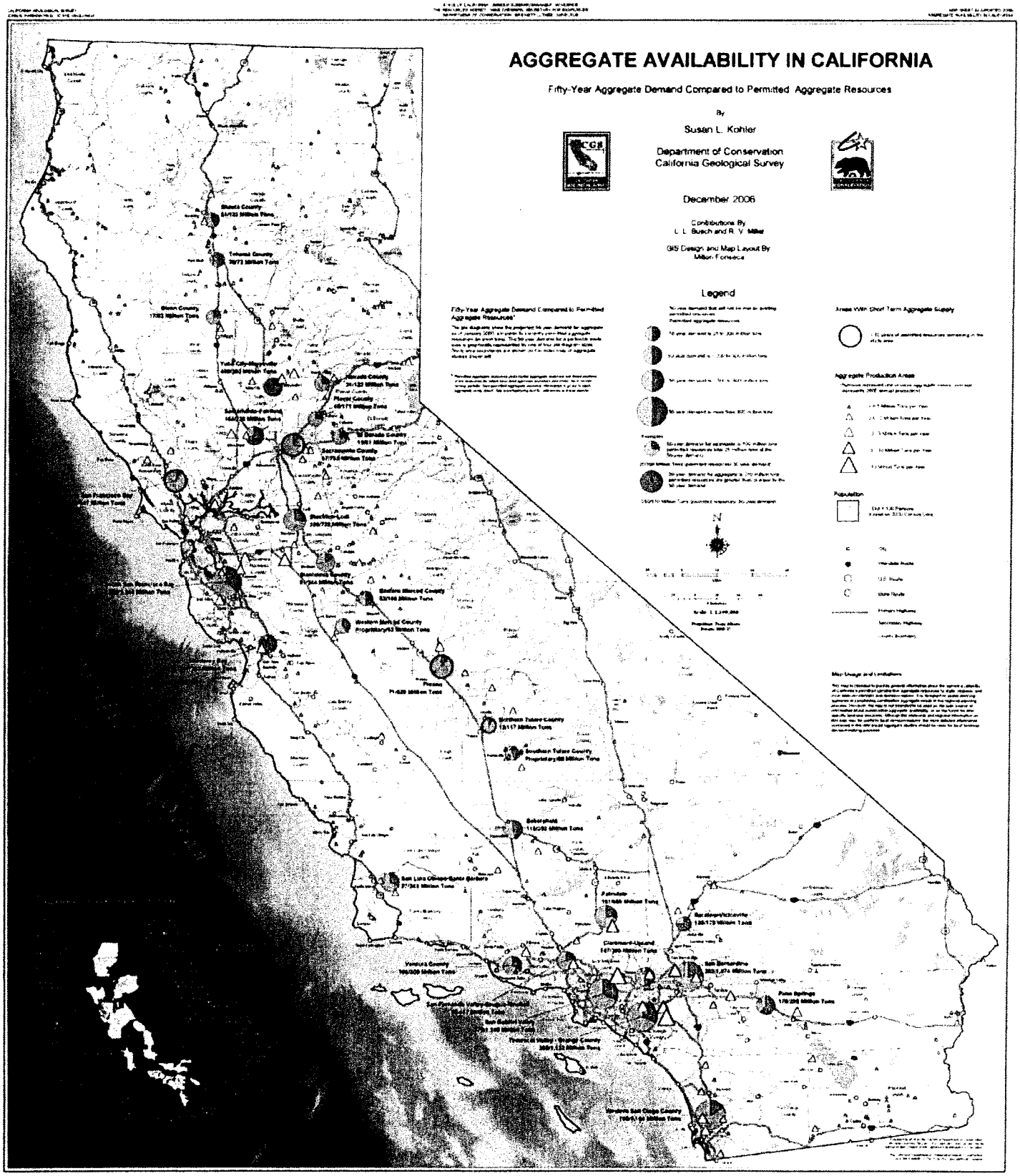
[3] Peter Berck, "A Note on the Environmental Costs of Aggregates," *Working Paper No. 994*, Dept. of Agricultural and Resource Economics and Policy, University of California, Berkeley, January 2005.

Attachment 3



APPENDIX C DOCUMENTATION SUPPORTING THE BASELINE CONDITION

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Rockfield Historic Sales by Plant*

	Rock Plant PTO C-1028	RMC Plant PTO C-3353	Asphalt Plant PTO C-651
Year	Tons	Cu Yards	Tons
1998	1,082,402	110,000	220,995
1999	1,007,009	115,266	230,797
2000	1,038,555	NA	186,374
2001	920,551	NA	181,537
2002	996,008	NA	149,888
2003	1,066,717	142,200	193,793
2004	1,180,164	180,036	136,036
2005	1,374,272**	189,550	132,547
2006	1,171,242**	153,081	163,627
2007	1,224,417**	NA	131,184
2008	821,400**	NA	169,156
2009	585,200**	76,499	80,400
2010	710,600	59,634	Inactive
2011	624,978	51,803	Inactive
2012	695,822	61,236	Inactive
2013	855,732	120,306	Inactive
2014	618,161**	109,644	Inactive
2015	653,520**	111,362	Inactive
2016	909,552	108,957	Inactive
2017	1,086,925**	115,214	Inactive
2018	1,165,710	95,644	Inactive

* SJVAPCD Annual Emissions Inventories Records unless not available & noted otherwise

** DMR records

Table 4.1
Estimated Annual Trip Generation – Existing Quarry and Plant Sites

Type of Trip	Truck Axles	Capacity	Approx. Material per Year	Annual Trips		Annual Average Daily Truck Trips*	
				Entering	Exiting	Entering	Exiting
Quarry Site							
Employees	0	-	-	250	250	0	0
Private Trucks for Interplant Haul**	5	-	-	1,500	1,500	4.1	4.1
Mobile Equipment Service	2	-	-	250	250	0.7	0.7
Water Truck	2	-	-	1,750	1,750	4.8	4.8
Interplant Haul							
Interplant Haul+	5	25 tons	1,406,250 tons	56,250	56,250	154.1	154.1
Plant Site							
Employees	0	-	-	13,463	13,463	0	0
Aggregate Sales	5	25 tons	842,257 tons	33,691	33,691	92.3	92.3
Hot-Mix Asphalt Sales	5	25 tons	230,797 tons	9,232	9,232	25.3	25.3
Ready-Mix Concrete Sales	3	9.5 cy	189,550 cy	19,953	19,953	54.7	54.7
CMB and RAP sales	5	25 tons	25,000 tons	1,000	1,000	2.7	2.7
Liquid Asphalt Delivery	5	27 tons	11,540 tons	428	428	1.2	1.2
Cement Delivery	5	27 tons	44,544 tons	1,650	1,650	4.5	4.5
Diesel Fuel Delivery	5	7,500 gal.	263,262 gal.	36	36	0.1	0.1
Asphalt Plant Diesel Fuel Delivery	5	7,500 gal.	313,884 gal.	42	42	0.1	0.1
Outside Services / Misc.	0	-	-	500	500	0	0
Total 2-Axle	-	-	-	**2,000**	**2,000**	**5.5**	**5.5**
Total 3-Axle	-	-	-	**19,953**	**19,953**	**54.7**	**54.7**
Total 5-Axle	-	-	-	**103,829**	**103,829**	**284.4**	**284.4**
Total Non-Truck	-	-	-	**14,213**	**14,213**	**0**	**0**
GRAND TOTAL	-	-	-	**139,995**	**139,995**	**344.6**	**344.6**

* Divided over 365 days per year as required for TI analyses.

** Interplant haul trucks are six private drivers who arrive with empty trucks and depart with empty trucks every work day (250 per year).

\+ Interplant haul loads originate at the quarry site and are delivered to the plant site. Empty trucks return to the quarry site.

Table 4.2
Estimated Annual Trip Generation – Stage 1 Project (2.0 MT Per Year)

Type of Trip	Truck Axles	Capacity	Approx. Material per Year	Annual Trips		Annual Average Daily Truck Trips*	
				Entering	Exiting	Entering	Exiting
Quarry Site							
Employees	0	-	-	3,000	3,000	0	0
Private Trucks for Interplant Haul**	5	-	-	1,000	1,000	2.7	2.7
Aggregate Sales	5	25 tons	1,308,000 tons	52,320	52,320	143.3	143.3
Specialty Rock Import	5	25 tons	50,000 tons	2,000	2,000	5.5	5.5
Diesel Fuel Delivery	5	7,500 gal.	75,000 gal.	10	10	0.0	0.0
Outside Services / Misc.	0	-	-	500	500	0	0
Interplant Haul							
Interplant Haul+	5	25 tons	417,000 tons	16,680	16,680	45.7	45.7
Plant Site							
Employees	0	-	-	11,301	11,301	0	0
Aggregate Sales	5	25 tons	275,000 tons	11,000	11,000	30.1	30.1
Hot-Mix Asphalt Sales	5	25 tons	300,000 tons	12,000	12,000	32.9	32.9
Ready-Mix Concrete Sales	3	9.5 cy	200,000 cy	21,053	21,053	57.7	57.7
CMB and RAP sales	5	25 tons	100,000 tons	4,000	4,000	11.0	11.0
Liquid Asphalt Delivery	5	27 tons	15,000 tons	556	556	1.5	1.5
Cement Delivery	5	27 tons	47,000 tons	1,741	1,741	4.8	4.8
Concrete/Asphalt Delivery	5	25 tons	100,000 tons	4,000	4,000	11.0	11.0
Diesel Fuel Delivery	5	7,500 gal.	370,000 gal.	50	50	0.1	0.1
Propane for Asphalt Plant	5	12,165 gal.	825,000 gal.	68	68	0.2	0.2
Outside Services / Misc.	0	-	-	500	500	0	0
Total 2-Axle	-	-	-	**0**	**0**	**0.0**	**0.0**
Total 3-Axle	-	-	-	**21,053**	**21,053**	**57.7**	**57.7**
Total 5-Axle	-	-	-	**105,425**	**105,425**	**288.8**	**288.8**
Total Non-Truck	-	-	-	**15,301**	**15,301**	**0**	**0**
GRAND TOTAL	-	-	-	**141,779**	**141,779**	**346.5**	**346.5**

* Divided over 365 days per year as required for TI analyses.

** Interplant haul trucks are four private drivers who arrive with empty trucks and depart with empty trucks every work day (250 per year).

\+ Interplant haul loads originate at the quarry site and are delivered to the plant site. Empty trucks return to the quarry site.

Table 4.3
Estimated Annual Trip Generation – Stage 1 Project (3.0 MT Per Year)

Type of Trip	Truck Axles	Capacity	Approx. Material per Year	Annual Trips		Annual Average Daily Truck Trips*	
				Entering	Exiting	Entering	Exiting
Quarry Site							
Employees	0	-	-	3,000	3,000	0	0
Private Trucks for Interplant Haul**	5	-	-	1,000	1,000	2.7	2.7
Aggregate Sales	5	25 tons	2,052,000 tons	82,080	82,080	224.9	224.9
Specialty Rock Import	5	25 tons	100,000 tons	4,000	4,000	11.0	11.0
Diesel Fuel Delivery	5	7,500 gal.	100,000 gal.	14	14	0.0	0.0
Outside Services / Misc.	0	-	-	500	500	0	0
Interplant Haul							
Interplant Haul+	5	25 tons	673,000 tons	26,920	26,920	73.8	73.8
Plant Site							
Employees	0	-	-	12,126	12,126	0	0
Aggregate Sales	5	25 tons	275,000 tons	11,000	11,000	30.1	30.1
Hot-Mix Asphalt Sales	5	25 tons	500,000 tons	20,000	20,000	54.8	54.8
Ready-Mix Concrete Sales	3	9.5 cy	300,000 cy	31,579	31,579	86.5	86.5
CMB and RAP sales	5	25 tons	200,000 tons	8,000	8,000	21.9	21.9
Liquid Asphalt Delivery	5	27 tons	25,000 tons	926	926	2.5	2.5
Cement Delivery	5	27 tons	70,500 tons	2,612	2,612	7.2	7.2
Concrete/Asphalt Delivery	5	25 tons	200,000 tons	8,000	8,000	21.9	21.9
Diesel Fuel Delivery	5	7,500 gal.	500,000 gal.	67	67	0.2	0.2
Propane for Asphalt Plant	5	12,165 gal.	1,375,000 gal.	114	114	0.3	0.3
Outside Services / Misc.	0	-	-	500	500	0	0
Total 2-Axle	-	-	-	**0**	**0**	**0.0**	**0.0**
Total 3-Axle	-	-	-	**31,579**	**31,579**	**86.5**	**86.5**
Total 5-Axle	-	-	-	**164,733**	**164,733**	**451.3**	**451.3**
Total Non-Truck	-	-	-	**16,126**	**16,126**	**0**	**0**
GRAND TOTAL	-	-	-	**212,438**	**212,438**	**537.8**	**537.8**

* Divided over 365 days per year as required for TI analyses.

** Interplant haul trucks are four private drivers who arrive with empty trucks and depart with empty trucks every work day (250 per year).

\+ Interplant haul loads originate at the quarry site and are delivered to the plant site. Empty trucks return to the quarry site.

Table 4.4
Estimated Annual Trip Generation – Stage 2 Project (3.0 MT Per Year)

Type of Trip	Truck Axles	Capacity	Approx. Material per Year	Annual Trips		Annual Average Daily Truck Trips*	
				Entering	Exiting	Entering	Exiting
Quarry Site							
Employees	0	-	-	15,126	15,126	0	0
Aggregate Sales	5	25 tons	2,228,000 tons	89,120	89,120	244.2	244.2
Hot-Mix Asphalt Sales	5	25 tons	500,000 tons	20,000	20,000	54.8	54.8
Ready-Mix Concrete Sales	3	9.5 cy	300,000 tons	31,579	31,579	86.5	86.5
CMB and RAP	5	25 tons	200,000 tons	8,000	8,000	21.9	21.9
Liquid Asphalt Delivery	5	27 tons	25,000 tons	926	926	2.5	2.5
Cement Delivery	5	27 tons	70,500 tons	2,612	2,612	7.2	7.2
Sand Import	5	25 tons	196,020 tons	7,841	7,841	21.5	21.5
Specialty Rock Import	5	25 tons	100,000 tons	4,000	4,000	11.0	11.0
Concrete/Asphalt Delivery	5	25 tons	200,000 tons	8,000	8,000	21.9	21.9
Diesel Fuel Delivery	5	7,500 gal.	600,000 gal.	80	80	0.2	0.2
Propane for Asphalt Plant	5	12,165 gal.	1,375,000 gal.	114	114	0.3	0.3
Outside Services / Misc.	0	-	-	500	500	0	0
Total 2-Axle	-	-	-	**0**	**0**	**0.0**	**0.0**
Total 3-Axle	-	-	-	**31,579**	**31,579**	**86.5**	**86.5**
Total 5-Axle	-	-	-	**140,693**	**140,693**	**385.5**	**385.5**
Total Non-Truck	-	-	-	**15,626**	**15,626**	**0.0**	**0.0**
GRAND TOTAL	-	-	-	**187,898**	**187,898**	**472.0**	**472.0**

* Divided over 365 days per year as required for TI analyses.

CEMEX DATA SHEET FOR CARB COMPLIANCE - NORTHERN CALIFORNIA AGGREGATE

ITEM	OWNERS EQUIPMENT / UNIT #	VEHICLE TYPE	VEHICLE MANUFACTURER	VEHICLE MODEL	MODEL YEAR	VEHICLE SERIAL NUMBER	LOW USE? (<100 hrs/yr)	AWAITING SALE AND NOT OPERATED? (Yes or No)
130407	2J0009	Crawler Tractors	CATERPILLAR	D8	1969	46A18354	Yes	NO
133464	2J0014	Crawler Tractors	CATERPILLAR	D9R	2004	ABK00944	No	NO
130404	2O0009	Excavators	HITACHI	EX-750	1997	17C5093	No	NO
130405	2O0010	Excavators	PETTIBONE	2219	1977	9096	Yes	NO
130400	250118	Tractors/Loaders/Backhoes	CATERPILLAR	980C	1989	063X09554	No	NO
130847	2Q0008	Graders	CATERPILLAR	12G	1979	61M5848	No	NO
130436	270054	Off-Highway Trucks	INTERNATIONAL	100	1969	587	Yes	YES
143074	270104	Off-Highway Trucks	CATERPILLAR	735	2004	AWR00636	No	NO
130438	270056	Off-Highway Trucks	INTERNATIONAL	100	1970	2590	No	NO
130401	250119	Tractors/Loaders/Backhoes	CATERPILLAR	988F	2000	2ZR02222	No	NO
133465	250135	Tractors/Loaders/Backhoes	CATERPILLAR	988G	2004	BNH01152	No	NO
130844	2M0013	Cranes	GROVE	RT 60S	1977	20497	No	NO
130840	240027	Forklifts	YALE	G83P-050-SBS-086	1971	L187450	No	NO
130845	2ML016	Aerial Lifts	GROVE	AMZ-66XT	1990	39023	No	NO
	R-1	Excavators	DEERE	850D	2008	FF850DX973053		

CEMEX DATA SHEET FOR CARB COMPL

ITEM	OWNERS EQUIPMENT / UNIT #	VEHICLE TYPE	ENGINE MANUFACTURER	ENGINE MODEL	ENGINE FAMILY NAME, IF ANY	ENGINE SERIAL NUMBER	ENGINE MODEL YEAR	ENGINE MAX POWER (HORSEPOWER)
130407	2J0009	Crawler Tractors	CATERPILLAR, INC.	D342		C805468	1968	235
133464	2J0014	Crawler Tractors	CATERPILLAR, INC.	3408		5XD01667	2003	306
130404	2O0009	Excavators	CUMMINS ENGINE CO., INC.	N14C		60511990	2001	434
130405	2O0010	Excavators	DETROIT DIESEL CORPORATION			1883NA031	1977	101
130400	250118	Tractors/Loaders/Backhoes	CATERPILLAR, INC.	3406		70V35962	1989	270
130847	2Q0008	Graders	CATERPILLAR, INC.	3406		3N72116	1979	135
130436	270054	Off-Highway Trucks	INTERNATIONAL TRUCK AND ENGINE CORPORATI	DTI 817		M596	1965	335
143074	270104	Off-Highway Trucks	CATERPILLAR, INC.	3406		BET09010	2004	366
130438	270056	Off-Highway Trucks	INTERNATIONAL TRUCK AND ENGINE CORPORATI	DTI 818 BP2		V001789X	1971	335
130401	250119	Tractors/Loaders/Backhoes	CATERPILLAR, INC.	3408		99C06458	2000	475
133465	250135	Tractors/Loaders/Backhoes	CATERPILLAR, INC.	3456		BNT02174	2004	475
130844	2M0013	Cranes	CUMMINS ENGINE CO., INC.	V8-210		1883NA032	1977	225
130840	240027	Forklifts	DODGE			1883NA033	1971	145
130845	2ML016	Aerial Lifts	DEUTZ AG	F3L913		7746440	1990	140
	R-1	Excavators	ISUZU MOTORS LIMITED	AH-6WG1X		AH6WG1XYSA03	2008	532.4

CEMEX DATA SHEET - MISSING IN ACTION OR NOT APPLICABLE TO OFF-ROAD RULE

ITEM	PLANT ID #	OWNERS EQUIPMENT / UNIT #	VEHICLE TYPE	VEHICLE MANUFACTURER	VEHICLE MODEL	MODEL YEAR	VEHICLE SERIAL NUMBER
130841	37612	280032	SERVICE TRUCK 28003	FORD	4WD	2005	1FDWF37P15EC36563
131023	37612	260120	PICKUP TRUCK 260120	CHEVROLET	4X4	1996	1GCGK24RXTE116276
131024	37612	260121	PICKUP TRUCK 260121	CHEVROLET	4X4	2001	1GCHK29U61E238034
131025	37612	260122	PICKUP TRUCK 260122	FORD	F250 4X4	2003	1FTNF21L93ED00930
131026	37612	260123	PICKUP TRUCK 260123	CHEVROLET	SILVERADO	2005	1GCHK29U35E255153
130842	37612	290013	SWEEPER 290013	TENNANT	0	1988	800 D
130848	37612	2W0021	WATER TRUCK 2W0021	FORD	3800 gal	1978	W90UVCE7659
130849	37612	2W0022	WATER TRUCK 2W0022	PETERBILT	3800 gal	1979	117451P
149449	37612	2W0043	WATER TRUCK 2W0043	FREIGHTLINER	D120042S-T	1999	1FUWDSEA1Y877582

SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

1990 E. Gettysburg Ave., Fresno, CA 93726

(559) 230 - 6000 FAX: (559) 230 - 6061

District BCode 7

SURVEY FOR THE ANNUAL EMISSION INVENTORY : 2018

CEMEX CONSTRUCTION MATERIALS PACIFIC LLC

2365 IRON POINT ROAD, SUITE 120
ATTN: ENVIRONMENTAL MANAGER
FOLSOM, CA 95630

FACILITY ID# : **C-1028**
TAD #: 10-1028
SIC #: 1442

PHONE #: (831) 227-9099

SITE ADDRESS : 13475 N FRIANT RD, FRESNO

Is this information considered:

[ ] **CONFIDENTIAL**
[X] **NOT CONFIDENTIAL**

Note: All requests for confidentiality must be supported by a written justification (Title 17, section 91010, California Administrative Code)

WorkSheet for Permit # : C-1028-2-3

AGGREGATE PRODUCTION PLANT INCLUDING RECEIVING HOPPER, AGGREGATE CONVEYING SYSTEM, SCREENING OPERATION SERVED BY WATER SPRAYS, FOUR CRUSHERS FED FROM THREE HOPPERS, A PERMIT EXEMPT POND SAND SCREENING OPERATION, AND LOG WASHER/CONVEYOR SYSTEM, THREE ENCLOSED HYDRAULIC CYCLONES, ASSOCIATED HOLDING TANKS AND PUMPS, ONE FINISH WET SCREEN, TWO TWIN SAND DEWATERING SCREWS, ONE DEWATERING SCREEN, AND ONE RADIAL STACKING CONVEYOR (LOW EMITTING UNITS)

AGGREGATE MATERIAL HANDLING

Annual Process Rates

Aggregate Conveying: 1,045,282 **Tons of Material**

Aggregate Stored: _____ Tons of Material

Aggregate Handling (Crushing, Screening): 1,045,282 **Tons of Material**

Aggregate Loadout: 1,165,170 **Tons of Material**

Sand Stored 428,348.110 **Tons of Material**

Sand Conveying: _____ **Tons of Material**

Recycled Asphalt Pavement (RAP) Stored/Transfered : _____/_____ **Tons of Material**

Comments:_____

_____

SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

1990 E. Gettysburg Ave., Fresno, CA 93726

(559) 230 - 6000 FAX: (559) 230 - 6061

District BCode 7

SURVEY FOR THE ANNUAL EMISSION INVENTORY : 2018

CEMEX CONSTRUCTION MATERIALS PACIFIC LLC

2365 IRON POINT ROAD, SUITE 120
ATTN: ENVIRONMENTAL MANAGER
FOLSOM, CA 95630

FACILITY ID# : **C-1028**
TAD #: 10-1028
SIC #: 1442

PHONE #: (831) 227-9099

SITE ADDRESS : 13475 N FRIANT RD, FRESNO

Is this information considered:

[ ] CONFIDENTIAL
[X] NOT CONFIDENTIAL

Note: All requests for confidentiality must be supported by a written justification (Title 17, section 91010, California Administrative Code)

WorkSheet for Permit # : C-1028-5-2

GASOLINE DISPENSING OPERATION WITH ONE 1,000 GALLON FIREGUARD ABOVEGROUND STORAGE TANK SERVED BY TWO-POINT PHASE I VAPOR RECOVERY SYSTEM, STANDING LOSS CONTROL (VR-301-F), AND 1 FUELING POINT WITH 1 GASOLINE DISPENSING NOZZLE SERVED BY BALANCE PHASE II VAPOR RECOVERY SYSTEM (G-70-162-A)

GASOLINE DISPENSING

Annual Throughput Rates

Gallons of Gasoline Dispensed (not including diesel): 2712

Comments: _____

Facility Wide Relative Monthly Activity

If the facility has same operating schedule year round, then please check the Default Monthly Activity box. Otherwise, provide the percentage and months the facility operates. The total percentage for the year must add up to 100%. (100% /12 = 8.3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
DEFAULT MONTHLY ACTIVITY	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
RELATIVE MONTHLY ACTIVITY	3	2	8	5	11	12	10	12	9	10	10	8

Facility Daily Schedule

Please indicate with circles the normal operating schedule:

Hours per day: 1 2 3 4 5 6 7 (8) 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Days per week: Sunday (Monday) (Tuesday) (Wednesday) (Thursday) (Friday) Saturday

Responsible Official Information

Facility ID	C-1028
Facility	CEMEX CONSTRUCTION MATERIALS PACIFIC LLC
Questionnaire Answered By, Title	Erin Loza, Environmental Manager
Telephone Number	(831) 227-9099
Responsible Official	Erin Loza
Responsible Official Telephone Number	(831) 227-9099
Responsible Official Signature	Erin M Loza
Date	07/30/2019

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

Twining, Inc.
3310 Airport Way
Long Beach, CA 90806-

Telephone: (562)426-3355
Attention: Yiwen Bu

Number of Pages 12
Date Received 12/14/2018
Date Reported 12/26/2018

Job Number	Order Date	Client
95517	12/14/2018	TWNINC

Project ID: CEMEX
Site: Quarry

Enclosed please find results of analyses of 24 solid samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.

2834 & 2908 North Naomi Street, Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

CHAIN OF CUSTODY RECORD

111001

AETL JOB No. 95517 Page 1 of 2

COMPANY	Twining Inc	PROJECT MANAGER	Yiwen Bu
COMPANY ADDRESS	15950 Bernardo Center Dr, Ste J, San Diego 92127	PHONE	858.974.3750
		FAX	
PROJECT NAME	CEMEX	PROJECT #	
SITE NAME AND ADDRESS	Quarry	PO #	

	SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.
1	ROC1 Box11	95517.01			Solid	Baggy	
2	ROC1 Box20	95517.02					
3	ROC4 Box20	95517.03					
4	ROC5 Box11	95517.04					
5	ROC6 Box8	95517.05					
6	ROC7 Box12	95517.06					
7	ROC2 Box2	95517.07					
8	ROC1 Box3	95517.08					
9	ROC3 Box3	95517.09					
10	ROC5 Box3	95517.10					
11	ROC6 Box3	95517.11					
12	ROC7 Box3	95517.12					
13							
14							
15							

ANALYSIS REQUESTED

	As, Ni, Cr (6010B)	Cr VI (7196A)								
1	X									
2	X	X								
3	X									
4	X									
5	X	X								
6	X									
7	X	X								
8	X									
9	X									
10	X	X								
11	X									
12	X									
13										
14										
15										

TEST INSTRUCTIONS & COMMENTS

HARD ROCK - QUARRY

↓

DG - QUARRY

↓

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	12	PROPERLY COOLED (Y) / N / NA	
CUSTODY SEALS Y / (N) / NA		SAMPLES INTACT (Y) N / NA	
RECEIVED IN GOOD COND. (Y) / N		SAMPLES ACCEPTED (Y) / N	

TURN AROUND TIME

☐ NORMAL ☐ RUSH ☐ SAME DAY ☐ NEXT DAY ☐ 2 DAYS ☐ 3 DAYS

DATA DELIVERABLE REQUIRED

☐ HARD COPY
☐ PDF
☐ GEOTRACKER (GLOBAL ID) _____
☐ OTHER (PLEASE SPECIFY) _____

	RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature:			
Printed Name:			
Date: / Time:		Date: / Time:	Date: / Time:

	RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY LABORATORY: AETL 3.
Signature:			
Printed Name:			Sergey
Date: / Time:		Date: / Time:	Date: 12/14/18 Time: 1400

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

American Environmental Testing Laboratory Inc.

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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

CHAIN OF CUSTODY RECORD

111000

COMPANY: Twining, Inc
PROJECT MANAGER: Yiwen Bu
COMPANY ADDRESS: 15950 Bernardo Center Dr., Ste J, San Diego 92127.
PHONE: 858.974.3750
FAX: 858.974.3752
PROJECT NAME: CEMEX
PROJECT #:
SITE NAME AND ADDRESS: Quarry
PO #:

AETL JOB No. 955517

	SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.	As,Ni,Cr(6010B)	CrVI (7196A)	TEST INSTRUCTIONS & COMMENTS
1	RKF18-1 30-35'	955517.13			SOLID	BAGGY		X		S&G PLANT
2	RKF18-5 25-30'	955517.14						X	X	
3	RKF18-12 60-65'	955517.15						X	X	
4	RKF18-14 85-90'	955517.16						X	X	
5	RKF18-21 65-70'	955517.17						X	X	
6	RKF18-22 25-40'	955517.18						X	X	
7	RKF18-13 9-19'	955517.19						X	X	SCIT PLANT
8	RKF18-15 11-21'	955517.20						X	X	
9	RKF18-18 25-35'	955517.21						X	~~X~~	
10	RKF18-20 32-42'	955517.22						X		
11	RKF18-21 22-32'	955517.23						X	X	
12	RKF18-22 13-23'	955517.24						X		
13										
14										
15										

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	12	PROPERLY COOLED (Y) / N / NA	
CUSTODY SEALS Y / (N) / NA		SAMPLES INTACT (Y) / N / NA	
RECEIVED IN GOOD COND. (Y) / N		SAMPLES ACCEPTED (Y) N	

TURN AROUND TIME

☐ NORMAL ☐ RUSH ☐ SAME DAY ☐ NEXT DAY ☐ 2 DAYS ☐ 3 DAYS

DATA DELIVERABLE REQUIRED

☐ HARD COPY
☐ PDF
☐ GEOTRACKER (GLOBAL ID) _____
☐ OTHER (PLEASE SPECIFY) _____

	RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature:			
Printed Name:			
Date: / Time:			

	RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY LABORATORY: AETL 3.
Signature:			
Printed Name:			Sergey
Date: / Time:			12/14/16 / 1400

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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COOLER RECEIPT FORM

Client Name: Twining Inc.
Project Name:
AETL Job Number: 95517
Date Received: 12/14/18 Received by: sergey
Carrier: ☐ AETL Courier ☐ Client ☐ GSO ☑ FedEx ☐ UPS
☐ Others:

Samples were received in: ☐ Cooler ( ) ☑ Other (Specify): box
Inside temperature of shipping container No 1: 3.3, No 2: , No 3:
Type of sample containers: ☐ VOA, ☐ Glass bottles, ☐ Wide mouth jars, ☐ HDPE bottles, ☐ Metal sleeves, ☑ Others (Specify): baggy
How are samples preserved: ☐ None, ☑ Ice, ☐ Blue Ice, ☐ Dry Ice
✓ None, _ HNO_3, _ NaOH, _ ZnOAc, _ HCl, _ $Na_2S_2O_3$, _ MeOH
_ Other (Specify):

	Yes	No, explain below	Name, if client was notified.
1. Are the COCs Correct?	✓		
2. Are the Sample labels legible?	✓		
3. Do samples match the COC?	✓		
4. Are the required analyses clear?	✓		
5. Is there enough samples for required analysis?	✓		
6. Are samples sealed with evidence tape?		✓	
7. Are sample containers in good condition?	✓		
8. Are samples preserved?	✓		
9. Are samples preserved properly for the intended analysis?	✓		
10. Are the VOAs free of headspace?		✓	
11. Are the jars free of headspace?		✓	

Explain all "No" answers for above questions:

JIM LIN

From: Anthony S Myers [anthonys.myers@cemex.com]
Sent: Tuesday, December 18, 2018 12:51 PM
To: JIM LIN
Cc: Yiwen Bu (Twining Inc.); Christine Novshadayan (AETL)
Subject: Re: Sample list

Here is their response

Hi Anthony,
Please reply as follows to the lab:
For As, Ni, Cr – perform EPA method 6010B
For Hex Cr – perform EPA 7196A
Also, please instruct the lab to hold the samples (after running the tests) until directed by CEMEX. This is in case we need them to re-run something after we get the results back. Thanks!

Anthony Myers
Quality Control Supervisor - Central California - Aggregates Division
Office : (559) 822-2090 , Fax: (559) 822-2092 , Mobile: (559) 477-6228
Address: 13475 North Friant Rd. Friant, CA 93626
E-mail: anthonys.myers@cemex.com
www.cemexusa.com

From: JIM LIN <jiml@aetlab.com>
Sent: Tuesday, December 18, 2018 10:35 AM
To: Anthony S Myers
Cc: Yiwen Bu (Twining Inc.); Christine Novshadayan (AETL)
Subject: RE: Sample list

Hi Anthony,

Got your email & also in contact with Twining.

Question.

What method would you like us to perform?

For As, Ni, Cr – We can perform EPA method 6010B or 6020.

For Hex Cr – EPA method 7199 or 7196A.

Please advise.

Thank you.

Jim, AETL
818-845-8200

12/17/18

Test to perform:

HARD ROCK – QUARRY
ROC 1 Box 11 – Arsenic, Nickel, Total Chromium
ROC 1 Box 20 – Arsenic, Nickel, Total Chromium, Hex Chromium
ROC 4 Box 20 – Arsenic, Nickel, Total Chromium
ROC 5 Box 11 – Arsenic, Nickel, Total Chromium
ROC 6 Box 8 – Arsenic, Nickel, Total Chromium, Hex Chromium
ROC 7 Box 12 – Arsenic, Nickel, Total Chromium

DG – QUARRY
ROC 2 Box 2 – Arsenic, Nickel, Total Chromium, Hex Chromium
ROC 1 Box 3 – Arsenic, Nickel, Total Chromium
ROC 3 Box 3 – Arsenic, Nickel, Total Chromium
ROC 5 Box 3 – Arsenic, Nickel, Total Chromium, Hex Chromium
ROC 6 Box 3 – Arsenic, Nickel, Total Chromium
ROC 7 Box 3 – Arsenic, Nickel, Total Chromium

S&G PLANT
RKF18-1 30-35' – Arsenic, Nickel, Total Chromium
RKF18-5 25-30' – Arsenic, Nickel, Total Chromium, Hex Chromium
RKF18-12 60-65' – Arsenic, Nickel, Total Chromium
RKF18-14 85-90' – Arsenic, Nickel, Total Chromium
RKF18-21 65-70' – Arsenic, Nickel, Total Chromium
RKF18-22 25-40' – Arsenic, Nickel, Total Chromium, Hex Chromium

SILT PLANT
RKF18-13 9-19' – Arsenic, Nickel, Total Chromium
RKF18-15 11-21' – Arsenic, Nickel, Total Chromium, Hex Chromium
RKF18-18 25-35' – Arsenic, Nickel, Total Chromium
RKF18-20 32-42' – Arsenic, Nickel, Total Chromium
RKF18-21 22-32' – Arsenic, Nickel, Total Chromium, Hex Chromium
RKF18-22 13-23' – Arsenic, Nickel, Total Chromium

American Environmental Testing Lab, 12/14/18

The samples are through Yiwen Bu at Twining, we need to have Arsenic, Nickel and Chromium testing done on each product, 24 samples total. If you have any questions, please feel free to call.

Anthony Myers (559) 477-6228

HARD ROCK – QUARRY

ROC 1 Box 11
ROC 1 Box 20
ROC 4 Box 20
ROC 5 Box 11
ROC 6 Box 8
ROC 7 Box 12

DG – QUARRY

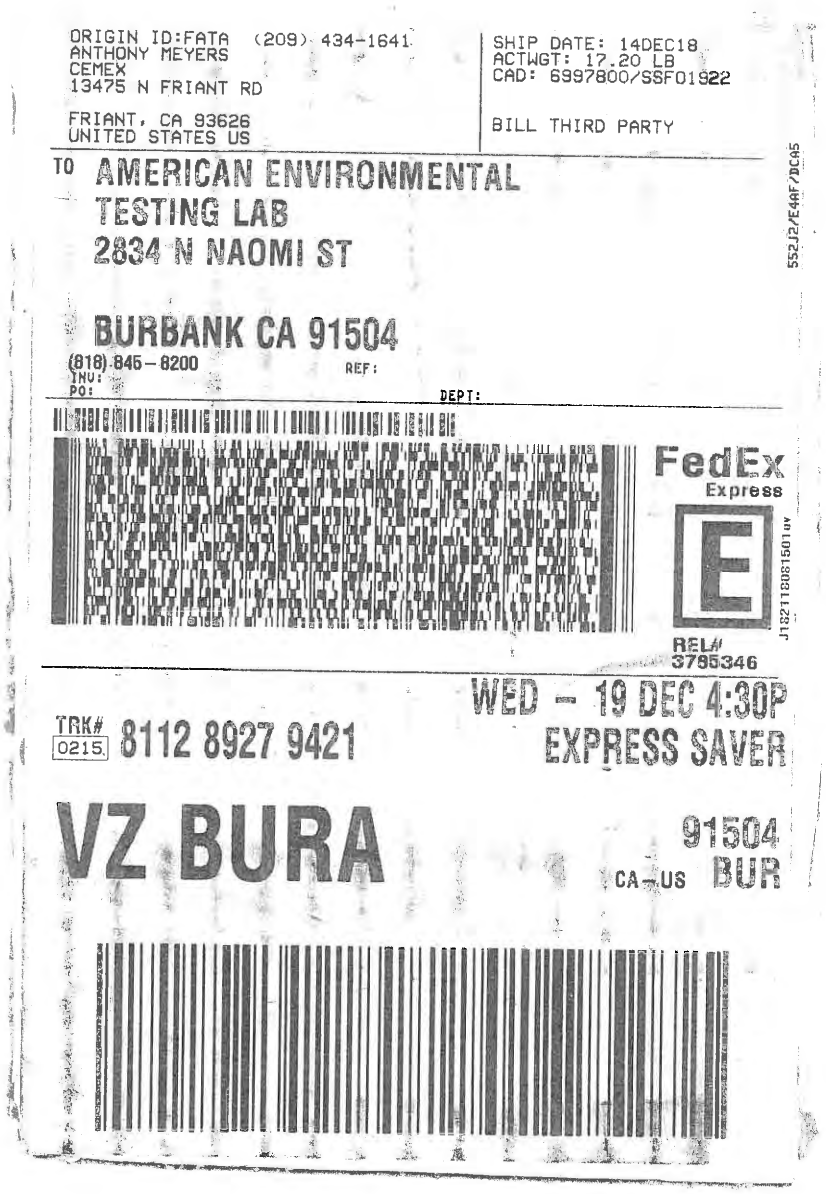
ROC 2 Box 2
ROC 1 Box 3
ROC 3 Box 3
ROC 5 Box 3
ROC 6 Box 3
ROC 7 Box 3

S&G PLANT

RKF18-1 30-35'
RKF18-5 25-30'
RKF18-12 60-65'
RKF18-14 85-90'
RKF18-21 65-70'
RKF18-22 25-40'

SILT PLANT

RKF18-13 9-19'
RKF18-15 11-21'
RKF18-18 25-35'
RKF18-20 32-42'
RKF18-21 22-32'
RKF18-22 13-23'



ORIGIN ID:FATA (209) 434-1641
ANTHONY MEYERS
CEMEX
13475 N FRIANT RD

FRIANT, CA 93626
UNITED STATES US

SHIP DATE: 14DEC18
ACTWGT: 17.20 LB
CAD: 6997800/SSF01922

BILL THIRD PARTY

TO AMERICAN ENVIRONMENTAL
TESTING LAB
2834 N NAOMI ST

BURBANK CA 91504
(818) 845-8200 REF:
INV:
PO: DEPT:

552J2/E44F/DCA5

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Express

J18211808150luv

REL#
3795346

WED - 19 DEC 4:30P
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TRK# 0215 8112 8927 9421

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Ordered By

Twining, Inc.
3310 Airport Way
Long Beach, CA 90806-

Telephone: (562)426-3355
Attention: Yiwen Bu

Project ID: CEMEX
Date Received 12/14/2018
Date Reported 12/26/2018

Job Number	Order Date	Client
95517	12/14/2018	TWNINC

CERTIFICATE OF ANALYSIS
CASE NARRATIVE

AETL received 24 samples with the following specification on 12/14/2018.

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
95517.01	ROC1 Box11	/ /	Solid	1
95517.03	ROC4 Box20	/ /	Solid	1
95517.04	ROC5 Box11	/ /	Solid	1
95517.06	ROC7 Box12	/ /	Solid	1
95517.08	ROC1 Box3	/ /	Solid	1
95517.09	ROC3 Box3	/ /	Solid	1
95517.11	ROC6 Box3	/ /	Solid	1
95517.12	ROC7 Box3	/ /	Solid	1
95517.13	RKF18-1 30-35'	/ /	Solid	1
95517.15	RKF18-12 60-65'	/ /	Solid	1
95517.16	RKF18-14 85-90'	/ /	Solid	1
95517.17	RKF18-21 65-70'	/ /	Solid	1
95517.19	RKF18-13 9-19'	/ /	Solid	1
95517.21	RKF18-18 25-35'	/ /	Solid	1
95517.22	RKF18-20 32-42'	/ /	Solid	1
95517.24	RKF18-22 13-23'	/ /	Solid	1

Method ^ Submethod	Req Date	Priority	TAT	Units
(6010BSCAN) ^ AS,CR,NI	12/21/2018	2	Normal	mg/Kg

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
95517.02	ROC1 Box20	/ /	Solid	1
95517.05	ROC6 Box8	/ /	Solid	1
95517.07	ROC2 Box2	/ /	Solid	1
95517.10	ROC5 Box3	/ /	Solid	1
95517.14	RKF18-5 25-30'	/ /	Solid	1
95517.18	RKF18-22 25-40'	/ /	Solid	1
95517.20	RKF18-15 11-21'	/ /	Solid	1

Continued

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Ordered By

Twining, Inc. **3310 Airport Way** **Long Beach, CA 90806-**	**Project ID: CEMEX** **Date Received 12/14/2018** **Date Reported 12/26/2018**
Telephone: (562)426-3355 **Attention: Yiwen Bu**	

Job Number	Order Date	Client
95517	12/14/2018	TWNINC

CERTIFICATE OF ANALYSIS

CASE NARRATIVE

95517.23 RKF18-21 22-32' / / Solid 1

Method ^ Submethod	Req Date	Priority	TAT	Units
(6010BSCAN) ^ AS,CR,NI	12/21/2018	2	Normal	mg/Kg
(7196A)	12/21/2018	2	Normal	mg/Kg

The samples were analyzed as specified on the enclosed chain of custody.
No analytical non-conformances were encountered.

Unless otherwise noted, all results of soil and solid samples are based on wet weight.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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ANALYTICAL RESULTS

Ordered By

Twining, Inc.
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Long Beach, CA 90806-

Telephone: (562)426-3355
Attn: Yiwen Bu
Page: **2**
Project ID: CEMEX

Site

Quarry

AETL Job Number	Submitted	Client
95517	12/14/2018	TWNINC

Method: (6010BSCAN), Arsenic, Chromium and Nickel by ICP

QC Batch No: 1220182C3

Our Lab I.D.			Method Blank	95517.01	95517.02	95517.03	95517.04
Client Sample I.D.				ROC1 Box11	ROC1 Box20	ROC4 Box20	ROC5 Box11
Date Sampled				/ /	/ /	/ /	/ /
Date Prepared			12/20/2018	12/20/2018	12/20/2018	12/20/2018	12/20/2018
Preparation Method			3050B	3050B	3050B	3050B	3050B
Date Analyzed			12/21/2018	12/21/2018	12/21/2018	12/21/2018	12/21/2018
Matrix			Solid	Solid	Solid	Solid	Solid
Units			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
Arsenic	1.0	10.0	ND	ND	ND	ND	ND
Chromium (Total)	2.5	5.0	ND	15.6	14.4	25.0	17.0
Nickel	2.5	5.0	ND	14.0	12.3	20.2	13.2

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ANALYTICAL RESULTS

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Telephone: (562)426-3355
Attn: Yiwen Bu
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Project ID: CEMEX

Site

Quarry

AETL Job Number	Submitted	Client
95517	12/14/2018	TWNINC

Method: (6010BSCAN), Arsenic, Chromium and Nickel by ICP

QC Batch No: 1220182C3

Our Lab I.D.			95517.05	95517.06	95517.07	95517.08	95517.09
Client Sample I.D.			ROC6 Box8	ROC7 Box12	ROC2 Box2	ROC1 Box3	ROC3 Box3
Date Sampled			/ /	/ /	/ /	/ /	/ /
Date Prepared			12/20/2018	12/20/2018	12/20/2018	12/20/2018	12/20/2018
Preparation Method			3050B	3050B	3050B	3050B	3050B
Date Analyzed			12/21/2018	12/21/2018	12/21/2018	12/21/2018	12/21/2018
Matrix			Solid	Solid	Solid	Solid	Solid
Units			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
Arsenic	1.0	10.0	ND	ND	ND	ND	ND
Chromium (Total)	2.5	5.0	14.6	13.2	11.2	16.1	12.9
Nickel	2.5	5.0	15.6	10.4	8.44	14.9	9.72

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ANALYTICAL RESULTS

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Project ID: CEMEX

Site

Quarry

AETL Job Number	Submitted	Client
95517	12/14/2018	TWNINC

Method: (6010BSCAN), Arsenic, Chromium and Nickel by ICP

QC Batch No: 1220182C3

Our Lab I.D.			95517.10	95517.11	95517.12		
Client Sample I.D.			ROC5 Box3	ROC6 Box3	ROC7 Box3		
Date Sampled			/ /	/ /	/ /		
Date Prepared			12/20/2018	12/20/2018	12/20/2018		
Preparation Method			3050B	3050B	3050B		
Date Analyzed			12/21/2018	12/21/2018	12/21/2018		
Matrix			Solid	Solid	Solid		
Units			mg/Kg	mg/Kg	mg/Kg		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Arsenic	1.0	10.0	ND	ND	ND		
Chromium (Total)	2.5	5.0	42.9	20.5	21.0		
Nickel	2.5	5.0	20.7	17.6	17.8		

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Attn: Yiwen Bu
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Project ID: CEMEX

Site

Quarry

AETL Job Number	Submitted	Client
95517	12/14/2018	TWNINC

Method: (6010BSCAN), Arsenic, Chromium and Nickel by ICP

QC Batch No: 1220182C4

Our Lab I.D.			Method Blank	95517.13	95517.14	95517.15	95517.16
Client Sample I.D.				RKF18-1 30-35'	RKF18-5 25-30'	RKF18-12 60-65'	RKF18-14 85-90'
Date Sampled				/ /	/ /	/ /	/ /
Date Prepared			12/20/2018	12/20/2018	12/20/2018	12/20/2018	12/20/2018
Preparation Method			3050B	3050B	3050B	3050B	3050B
Date Analyzed			12/21/2018	12/21/2018	12/21/2018	12/21/2018	12/21/2018
Matrix			Solid	Solid	Solid	Solid	Solid
Units			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
Arsenic	1.0	10.0	ND	ND	ND	ND	ND
Chromium (Total)	2.5	5.0	ND	5.08	4.37J	9.34	16.4
Nickel	2.5	5.0	ND	2.58J	ND	4.68J	6.94

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Project ID: CEMEX

Site

Quarry

AETL Job Number	Submitted	Client
95517	12/14/2018	TWNINC

Method: (6010BSCAN), Arsenic, Chromium and Nickel by ICP

QC Batch No: 1220182C4

Our Lab I.D.			95517.17	95517.18	95517.19	95517.20	95517.21
Client Sample I.D.			RKF18-21 65-70'	RKF18-22 25-40'	RKF18-13 9-19'	RKF18-15 11-21'	RKF18-18 25-35'
Date Sampled			/ /	/ /	/ /	/ /	/ /
Date Prepared			12/20/2018	12/20/2018	12/20/2018	12/20/2018	12/20/2018
Preparation Method			3050B	3050B	3050B	3050B	3050B
Date Analyzed			12/21/2018	12/21/2018	12/21/2018	12/21/2018	12/21/2018
Matrix			Solid	Solid	Solid	Solid	Solid
Units			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
Arsenic	1.0	10.0	ND	ND	ND	ND	ND
Chromium (Total)	2.5	5.0	104	10.1	11.9	11.8	11.9
Nickel	2.5	5.0	6.85	3.83J	8.45	8.47	8.30

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ANALYTICAL RESULTS

Ordered By

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Attn: Yiwen Bu
Page: **7**
Project ID: CEMEX

Site

Quarry

AETL Job Number	Submitted	Client
95517	12/14/2018	TWNINC

Method: (6010BSCAN), Arsenic, Chromium and Nickel by ICP

QC Batch No: 1220182C4

Our Lab I.D.			95517.22	95517.23	95517.24		
Client Sample I.D.			RKF18-20 32-42'	RKF18-21 22-32'	RKF18-22 13-23'		
Date Sampled			/ /	/ /	/ /		
Date Prepared			12/20/2018	12/20/2018	12/20/2018		
Preparation Method			3050B	3050B	3050B		
Date Analyzed			12/21/2018	12/21/2018	12/21/2018		
Matrix			Solid	Solid	Solid		
Units			mg/Kg	mg/Kg	mg/Kg		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Arsenic	1.0	10.0	ND	ND	ND		
Chromium (Total)	2.5	5.0	12.2	13.2	12.7		
Nickel	2.5	5.0	8.98	9.65	9.41		

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ANALYTICAL RESULTS

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Attn: Yiwen Bu
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Project ID: CEMEX

Site

Quarry

AETL Job Number	Submitted	Client
95517	12/14/2018	TWNINC

Method: (7196A), Chromium, Hexavalent (Colorimetric)

QC Batch No: HC122118-1

Our Lab I.D.			Method Blank	95517.02	95517.05	95517.07	95517.10
Client Sample I.D.				ROC1 Box20	ROC6 Box8	ROC2 Box2	ROC5 Box3
Date Sampled				/ /	/ /	/ /	/ /
Date Prepared			12/21/2018	12/21/2018	12/21/2018	12/21/2018	12/21/2018
Preparation Method			7196A	7196A	7196A	7196A	7196A
Date Analyzed			12/21/2018	12/21/2018	12/21/2018	12/21/2018	12/21/2018
Matrix			Solid	Solid	Solid	Solid	Solid
Units			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
Chromium (VI)	0.25	0.50	ND	ND	ND	ND	ND

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ANALYTICAL RESULTS

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Telephone: (562)426-3355
Attn: Yiwen Bu
Page: **9**
Project ID: CEMEX

Site

Quarry

AETL Job Number	Submitted	Client
95517	12/14/2018	TWNINC

Method: (7196A), Chromium, Hexavalent (Colorimetric)

QC Batch No: HC122118-1

Our Lab I.D.			95517.14	95517.18	95517.20	95517.23	
Client Sample I.D.			RKF18-5 25-30'	RKF18-22 25-40'	RKF18-15 11-21'	RKF18-21 22-32'	
Date Sampled			/ /	/ /	/ /	/ /	
Date Prepared			12/21/2018	12/21/2018	12/21/2018	12/21/2018	
Preparation Method			7196A	7196A	7196A	7196A	
Date Analyzed			12/21/2018	12/21/2018	12/21/2018	12/21/2018	
Matrix			Solid	Solid	Solid	Solid	
Units			mg/Kg	mg/Kg	mg/Kg	mg/Kg	
Dilution Factor			1	1	1	1	
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	
Chromium (VI)	0.25	0.50	ND	ND	ND	ND	

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QUALITY CONTROL RESULTS

Ordered By

Twining, Inc.
3310 Airport Way
Long Beach, CA 90806-

Telephone: (562)426-3355
Attn: Yiwen Bu
Page: **10**
Project ID: CEMEX

Site

Quarry

AETL Job Number	Submitted	Client
95517	12/14/2018	TWNINC

Method: (6010BSCAN), Arsenic, Chromium and Nickel by ICP

QC Batch No: 1220182C3; Dup or Spiked Sample: 95517.01; LCS: Blank; QC Prepared: 12/20/2018; QC Analyzed: 12/21/2018; Units: mg/Kg

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Arsenic	0.00	50.0	40.9	81.8	50.0	43.1	86.2	5.24	75-125	<15
Chromium (Total)	15.6	50.0	55.9	80.6	50.0	56.1	81.0	<1	75-125	<15
Nickel	14.0	50.0	53.3	78.6	50.0	53.4	78.8	<1	75-125	<15

QC Batch No: 1220182C3; Dup or Spiked Sample: 95517.01; LCS: Blank; QC Prepared: 12/20/2018; QC Analyzed: 12/21/2018; Units: mg/Kg

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Arsenic	50.0	52.5	105	50.0	51.1	102	2.90	75-125	<15	
Chromium (Total)	50.0	49.6	99.2	50.0	49.6	99.2	<1	75-125	<15	
Nickel	50.0	51.9	104	50.0	52.0	104	<1	75-125	<15	

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Project ID: CEMEX

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Quarry

AETL Job Number	Submitted	Client
95517	12/14/2018	TWNINC

Method: (6010BSCAN), Arsenic, Chromium and Nickel by ICP

QC Batch No: 1220182C4; Dup or Spiked Sample: 95517.13; LCS: Blank; QC Prepared: 12/20/2018; QC Analyzed: 12/21/2018; Units: mg/Kg

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Arsenic	0.00	50.0	46.9	93.8	50.0	44.3	88.6	5.70	75-125	<15
Chromium (Total)	5.08	50.0	56.1	102	50.0	55.8	101	<1	75-125	<15
Nickel	2.58	50.0	47.0	88.8	50.0	47.0	88.8	<1	75-125	<15

QC Batch No: 1220182C4; Dup or Spiked Sample: 95517.13; LCS: Blank; QC Prepared: 12/20/2018; QC Analyzed: 12/21/2018; Units: mg/Kg

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Arsenic	50.0	51.9	104	50.0	52.5	105	<1	75-125	<15	
Chromium (Total)	50.0	49.5	99.0	50.0	49.4	98.8	<1	75-125	<15	
Nickel	50.0	51.5	103	50.0	51.6	103	<1	75-125	<15	

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Quarry

AETL Job Number	Submitted	Client
95517	12/14/2018	TWNINC

Method: (7196A), Chromium, Hexavalent (Colorimetric)

QC Batch No: HC122118-1; Dup or Spiked Sample: 95517.01; LCS: Blank; QC Prepared: 12/21/2018; QC Analyzed: 12/21/2018; Units: mg/Kg

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Chromium (VI) (Soluble)	0.00	1.00	0.860	86.0	1.00	0.920	92.0	6.7	80-120	<20
Chromium (VI) (Insoluble)	0.00	1,350	1,410	105	1,350	1,410	105	<1	80-120	<20

QC Batch No: HC122118-1; Dup or Spiked Sample: 95517.01; LCS: Blank; QC Prepared: 12/21/2018; QC Analyzed: 12/21/2018; Units: mg/Kg

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Chromium (VI) (Soluble)	1.00	1.04	104	1.00	0.980	98.0	5.9	80-120	<20	
Chromium (VI) (Insoluble)	1,220	1,240	102	1,220	1,240	102	<1	80-120	<20	

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Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

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Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

APPENDIX D WHAT CONSTITUTES AN ADVERSE HEALTH EFFECT OF AIR POLLUTION?

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American Thoracic Society

What Constitutes an Adverse Health Effect of Air Pollution?

THIS OFFICIAL STATEMENT OF THE AMERICAN THORACIC SOCIETY WAS ADOPTED BY THE ATS BOARD OF DIRECTORS, JULY 1999

PURPOSE OF THE STATEMENT

As the twentieth century ends, the health effects of outdoor air pollution remain a public health concern in developing and developed countries alike. In the United States, the principal pollutants monitored for regulatory purposes (carbon monoxide, nitrogen dioxide, sulfur dioxide, particles, ozone, and lead; see Table 1) show general trends of declining concentrations, although ozone pollution now affects many regions of the country besides southern California (1). Yet, even at levels of air pollution now measured in many cities of the United States, associations between air pollution levels and health indicators are being demonstrated at concentrations around those set by standards of the U.S. Environmental Protection Agency (2, 3). In many countries of the developing world, concentrations of air pollutants are rising with industrialization and the increasing numbers of motor vehicles (4, 5). Extremely large and densely populated urban areas, often referred to as "megacities," have the potential to generate unprecedented air quality problems.

There are common principles to air quality management throughout the world. Public health protection unifies all approaches, whether based on voluntary guidelines, mandated standards for concentrations, or source control. The intent is to limit or to avoid any impact of air pollution on the public's health. Air quality management is thus based on a scientific foundation built from the epidemiologic, toxicologic, and clinical evidence on health effects of air pollution. In interpreting this evidence for public health protection, there is a need to identify those effects that are considered "adverse" and to separate them from those effects not considered adverse.

The American Thoracic Society has previously provided guidance on the distinction between adverse and nonadverse health effects of air pollution in its 1985 statement, "Guidelines as to What Constitutes an Adverse Respiratory Health Effect" (6). Definitions of adverse effects have also been offered by the World Health Organization (7–10), but the guidance of the American Thoracic Society has received particular emphasis in the United States. Preparation of the original statement was intended to coincide with consideration of the passage of an amended Clean Air Act and to provide a framework for interpreting scientific evidence relevant to the mandate of the act. In particular, the Clean Air Act requires that the Administrator of the Environmental Protection Agency promulgate, for certain pollutants, standards that will be sufficient to protect against adverse effects of the air pollutants on health. The act is silent on the definition of "adverse effect" and, at the time of the 1985 statement, there was considerable controversy around the interpretation of this language as revision of the act was being considered. Recognizing the need of policy makers for expert guidance, the American Thoracic Society released the 1985 statement, which to date constitutes the sole set of recommendations on this issue from an expert panel convened by a health organization.

The American Thoracic Society has revised the 1985 statement because new scientific findings, published since the original statement, have again raised questions as to the boundary between adverse and nonadverse in considering health effects of air pollution. These new findings reflect improved sensitivity of research approaches and the application of biomarkers that can detect even subtle perturbations of biologic systems by air pollutants. Epidemiologic research designs have been refined and large sample sizes and increasingly accurate methods for exposure assessment have increased the sensitivity of epidemiologic data for detecting evidence of effects. New statistical approaches and advances in software and hardware have facilitated analyses of large databases of mortality and morbidity information. The design of clinical studies-including controlled exposures of volunteers-has also advanced and biologic specimens may be obtained after exposure, for example, by fiberoptic bronchoscopy, to identify changes in levels of markers of injury. Toxicologic studies have also gained in sophistication through incorporation of more sensitive indicators of effect and the careful tracing of the relationship between exposure and biologically relevant doses to target sites, which may now be considered at a molecular level.

New dimensions have been added to the array of outcome measures. Medical outcomes research now recognizes that patient well-being should be broadly conceptualized and measured rigorously, in addition to considering the biological process of the disease itself. As a result, health-related quality of life, the perception of well-being, is now considered a necessary component of outcomes research. Validated instruments have been developed to assess the impact of health-related symptoms and impairment on functional status and quality of life (11-14). The formalization of the concept of environmental justice acknowledges that the effects of specific pollutants cannot be evaluated in isolation without giving consideration to the overlapping exposures of populations, often minority group members of low socioeconomic status, who live in neighborhoods that are heavily exposed to multiple environmental contaminants (15).

This new statement, like the 1985 statement, is intended to provide guidance to policy makers and others who interpret the scientific evidence on the health effects of air pollution for the purpose of risk management. The statement does not offer strict rules or numerical criteria, but rather proposes principles to be used in weighing the evidence and setting boundaries between adverse and nonadverse health effects. Even if the technical tools were available for scaling the consequences of air pollution on the multiple relevant axes, the placement of dividing lines should be a societal judgment and consequently

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TABLE 1

U.S. NATIONAL AMBIENT AIR QUALITY STANDARDS*

Pollutant	NAAQS Concentration (ppm)	NAAQS Concentration ($\mu g/m^3$)	Standard Type
Particulate matter ≥ 10 Pm (PM_{10})			
24-h average		150	Primary and secondary
Annual arithmetic mean		50	Primary and secondary
Particulate matter ≥ 2.5 μm ($PM_{2.5}$)			
24-h average		65	Primary and secondary
Annual arithmetic mean		15	Primary and secondary
Ozone (O_3)			
24-h average	0.12	235	Primary and secondary
Annual arithmetic mean	0.08	157	Primary and secondary
Sulfur dioxide (SO_2)			
24-h average	0.14	365	Primary
Annual arithmetic mean	0.03	80	Primary
3-h average	0.50	1,300	Secondary
Nitrogen dioxide (NO_2)			
Annual arithmetic mean	0.053	100	Primary and secondary
Carbon monoxide (CO)			
1-h average	35	40	Primary
8-h average	9	10	Primary
Lead (Pb)			
Quarterly average		1.5	Primary and secondary

* For detailed information on scientific bases and policy considerations underlying decisions establishing the NAAQS listed here, see the AQCDs, staff papers, and NAAQS Promulgation notices cited in text. Such information can also be obtained from several internet websites (e.g., http://www.epa.giv/airs/criteria.html; http://www.epa.gov/oar/oaqps/publicat.html; and http://www.epa.gov/ncea/biblio.htm).

TABLE 2

ADVERSE RESPIRATORY HEALTH EFFECTS

A. Increased mortality (*Increased* as used here and subsequently means significantly [$p < 0.05$] increased above that recorded in some standard, comparable population. In selected situation, $p < 0.1$ may be appropriate)
B. Increased incidence of cancer
C. Increased frequency of symptomatic asthmatic attacks
D. Increased incidence of lower respiratory tract infections
E. Increased exacerbations of disease in persons with chronic cardiopulmonary or other disease that could be reflected in a variety of ways
   1. Less able to cope with daily activities (i.e., shortness of breath or increased anginal episodes)
   2. Increased hospitalization, both frequency and duration
   3. Increased emergency ward or physician visits
   4. Increased pulmonary medication
   5. Decreased pulmonary function
F. Reduction in FEV_1 or FVC associated with clinical symptoms
   1. Chronic reduction in FEV, or FVC associated with clinical symptoms
   2. A significant increase in number of persons with FEV_1 below normal limits: chronically reduced FEV, is a 'predictor of increased risk of mortality. Transient or reversible reductions that are not associated with an asthmatic attack appear to be less important. It should be emphasized that a small but significant reduction in a population mean FEV, or $FEV_{.75}$ is probably medically significant, as such a difference may indicate an increase in the number of persons witn respiratory impairment in the population. In other words, a small part of the population may manifest a marked change that is medically significant to them, but when diluted with the rest of the population the change appears to be small
   3 An increased rate of decline in pulmonary function (FEV,) relative to the predicted value in adults with increasing age or failure of children to maintain their predicted FEV, growth curve. Such data must be standardized for sex, race, height, and other demographic and anthropometric factors
G. Increased prevalence of wheezing in the chest apart from colds, or of wheezing most days or nights. (The significance of wheezing with colds needs more study and evaluation.)
H. Increased prevalence or incidence of chest tightness
I. Increased prevalence or incidence of cough/phlegm production requiring medical attention
I. Increased incidence of acute upper respiratory infections that interfere with normal activity
K. Acute upper respiratory tract infections that do not interfere with normal activity
L. Eye, nose, and throat irritation that may interfere with normal activity (i.e., driving a car) if severe
M. Odors

this committee does not propose specific boundaries for separating adverse from nonadverse effects.

OVERVIEW OF THE 1985 STATEMENT

The 1985 statement of the American Thoracic Society was directed at respiratory health effects of air pollution and emphasized the interpretation of the epidemiologic evidence. The statement recognized the spectrum of responses to air pollution, which begins with exposure and evidence of exposure and ends at death. This spectrum has been characterized as a pyramid, based in the most common consequence-exposure-and having mortality, the least common and most severe consequence, at its tip. The statement included a table that lists adverse respiratory health effects, seemingly in order of declining severity (Table 2). The 1985 statement hinged the distinction between adverse and nonadverse effects on medical considerations. The committee recognized that the boundary is further influenced by societal considerations: "Where one draws the line to categorize it as an adverse health effect or an action level between pathophysiologic or physiologic change is probably best left to the individual or the community."

The committee's definition of adverse respiratory health effects was ". medically significant physiologic or pathologic changes generally evidenced by one or more of the following: (*1*) interference with the normal activity of the affected person or persons, (2) episodic respiratory illness, (3) incapacitating illness, (4) permanent respiratory injury, and/or (5) progressive respiratory dysfunction." The committee noted that all changes are not adverse, citing the example of carboxyhemoglobin. The level of carboxyhemoglobin, beyond that from endogenous production, is indicative of exposure but it is not predictive of adverse effects until reaching threshold levels, depending on the effect and the susceptibility of the exposed person. The statement recognized that a distinction should be drawn between effects to individuals and effects to populations and that populations are heterogeneous in their susceptibility. The comment was offered that a change in a population could be "medically significant" for that group. The statement also provides guidance on interpretation of'reversible effects and on interpreting irreversible effects. In acknowledging that research would continue to address uncertainties, the committee recommended that the guidelines should be periodically reviewed and updated.

METHODOLOGY FOR DEVELOPING THIS STATEMENT

Following the recommendation of the committee that authored the 1985 statement, the Environmental and Occupational Health Assembly of the American Thoracic Society recognized a need to reconvene a group to review and revise the prior statement. The statement had been used for more than a decade and new investigative approaches were being used to identify effects of air pollution that were not considered by the first committee. In addition, societal perspectives had shifted since the early 1980s and a forma1 concern for the impact of air

pollution on specific groups had been expressed through the environmental justice movement.

To revise the statement, a multidisciplinary committee was convened in 1997 that included expertise in pulmonary medicine, public health, epidemiology, both clinical and animal toxicology, biochemistry, and cellular and molecular biology. This committee conducted several planning meetings and consulted experts in environmental economics and in ethics. In addition, a multidisciplinary workshop was convened to gain input from the range of groups potentially interested in the statement and its application. The committee's approach was discussed at a symposium held at the 1999 Annual Meeting of the American Thoracic Society. After further revisions, the statement was reviewed and submitted to the Board of the American Thoracic Society.

BACKGROUND ON THE CLEAN AIR ACT

The preparation of the original statement was largely motivated by potential ambiguity in interpreting the language of the Clean Air Act, which addresses adverse effects of air pollution without providing clear guidance as to the distinction between adverse and nonadverse effects. In addition, questions regarding this distinction arise repeatedly in interpreting the findings of research studies, whether observational or experimental. Consequently, the 1985 statement has had broader application than just the interpretation of evidence on air pollution and health for the purpose of promulgating air quality regulations. Nonetheless, the committee found the legislative history of the Clean Air Act to be relevant to its charge.

The first national legislation on air pollution, the Air Pollution Control Act, was passed in the mid-1950s; the original Clean Air Act was passed in 1963 and last revised in 1990. The act is lengthy and complex in its provisions; most relevant to considerations in defining an adverse health effect are Sections 108 (Air Quality Criteria and Control Techniques), 109 (National Ambient Air Quality Standards), and 112 (Hazardous Air Pollutants). National Ambient Air Quality Standards (NAAQS) are set individually for six prevalent pollutants (Table 1), often referred to as "criteria pollutants." They are so designated because of the requirement for comprehensively reviewing relevant information in a criteria document. The primary NAAQS are to be set at a level that protects the public health with an adequate margin of safety, regardless of economic or technical feasibility of attainment. The secondary standards are concerned with welfare and environmental consequences.

The hazardous air pollutants, as defined in Section 112, are not covered under Sections 108 and 109 as criteria pollutants. In 1990, the Congress offered a list of 189 such pollutants and a process for listing and delisting substances. The 1990 Clean Air Act states: "The Administrator shall periodically review [and revise] the list [of 189 hazardous air pollutants] by. adding pollutants which present, or may present, through inhalation or other routes of exposure, a threat of adverse human health effects (including, but not limited to substances which are known to be, or may reasonably be anticipated to be, carcinogenic, mutagenic, teratogenic, neurotoxic, which cause reproductive dysfunction, or which are acutely or chronically toxic). ." Section 112(f)(2) further directs the Environmental Protection Agency to assess whether the emissions standards for the listed hazardous air pollutants required under other subsections "provide an ample margin of safety to protect public health" and if not, then the agency is to develop standards that will address the "remaining risk."

The historical record provides an indication of the intent of the Congress in framing the language of the Clean Air Act with regard to protection of the public's health. Research now shows that the most highly susceptible individuals may respond to common exposures that are often at or close to natural background pollutant levels.

With regard to sensitivity, the 1970 Clean Air Act recognized that some persons were so ill as to need controlled environments, e.g., persons in intensive care units or newborn infants in nurseries; the act stated that the standards might not necessarily protect such individuals. It further stated, however, that the standards should protect "particularly sensitive citizens such as bronchial asthmatics and emphysematics who in the normal course of daily activity are exposed to the ambient environment." The act further suggested that the adequacy of any standard could be tested in a statistically representative sample of sensitive individuals. The hearing record on the 1970 act is informative. Dr. Hon T. Middleton (Commissioner, National Air Pollution Control Administration, Department of Health, Education, and Welfare) addressed the Senate Subcommittee on Air and Water Pollution of the Committee on Public Works on May 27, 1970. He testified that the intent of any national air quality standard is to be "protective of health in all places" and set at a level below which effects have not been observed. Dr. Middleton recognized the difficulty of finding a demarcation point of exposure below which there is no effect and he noted that there may be subtle effects and evolving scientific understanding.

Further difficulties in the language of the Clean Air Act were later noted in ***A Legislative History of the Clean Air Act Amendments of 1977: A Continuation of the Clean Air Act Amendments of 1970.*** This document noted the difficulty of applying the margin of safety and the erosion of margins of safety by advancing scientific knowledge. The document also commented on the implicit assumption of a safe threshold in the language of the act and the implausibility of this assumption. The report questioned whether the NAAQS (I) protect against genetic mutations, birth defects, and cancer, (2) take sufficient account of the consequences of long-term low-level exposures or short-term peaks, and (3) sufficiently consider synergism among pollutants and the formation of secondary pollutants, e.g., sulfates, with their own toxicity. These considerations remain relevant more than 20 years later.

This selective review of the historical record indicates that Congress intended that the NAAQS would afford health protection not only to the general population but to subgroups with enhanced susceptibility to air pollution, including people with asthma and people with chronic obstructive lung disease. Nevertheless, it is also clear that some exquisitely susceptible individuals might remain outside the ambit of protection of the NAAQS. A margin of safety was to be provided but quantitative specification was not offered. The evolutionary nature of the supporting scientific evidence was repetitively acknowledged and the need to distinguish adverse from nonadverse effects was at least implicitly recognized. The current language of Section 112 explicitly acknowledges the possibility of shifting understanding of risks of specific hazardous air pollutants.

GENERAL CONSIDERATIONS

In preparing the statement, the committee identified several general considerations that are relevant to interpreting evidence on the health effects of air pollution. Each of these considerations and the committee's judgment as to their proper weighting are detailed below.

Population Health versus Individual Risk

The effects of air pollution can be viewed in the complementary contexts of the increment of an individual's risk for disease—the clinician's measure of impact-and of the additional risk incurred by a population, which is the public health perspectivc (16). Both perspectives arc relevant to interpreting research findings on air pollution and to regulations that are protective of the public's health. Any risk incurred by an exposed individual beyond some boundary, determined by the individual or on a societal basis, could be deemed unacceptable. For example. prolonged exposure to a respiratory carcinogen could result in an individual-level incremental risk of exposure of 10^{-4}, more than two orders of magnitude lower than the baseline lifetime individual risk in the United States. Nevertheless, among an exposed population of IO', the estimated number of cancer cases that might result from such an exposure would number 10^{3}, illustrating that minute individual risks may be significant from the standpoint of population exposures.

Exposure could also enhancc risk for a population to an unacceptable degree, perhaps without shifting the risks of any particular individuals to an unacceptable level. Figure 1 illustrates the distinction. In Figure l A, the population's distribution of exposure shifts toward a higher level and some members of thc population cross the boundary to an unacceptable risk. In Figure lB, the shift affects the position of the population distribution, but no individuals move to an unacceptable level of risk. Effects on persons with asthma are illustrative. A population of children with asthma could have a distribution of lung function such that no individual child has a level associated with significant impairment. Exposure to air pollution could shift the distribution toward lower levels without bringing any individual child to a level that is associated with clinically relevant consequences. Individuals within the population would, however, have diminished reserve function and are at potentially increased risk if affected by another agent, e.g., a viral infection. Assuming that thc relationship between the risk factor and the disease is causal, the committee considered that such a shift in thc risk factor distribution, and hence the risk profilc of the exposed population. should be considered adverse, even in thc absence of the immediate occurrence of frank illness.

Ethics and Equity

The past decade has brought increasing concern over the ethics of heterogeneous, inequitable distributions of environmental and occupational exposures (IS). Within the United States, some groups receive disproportionate exposures to environmental agents that arc injurious to health; the environmental justice movement seeks to redress these inequities. The exposures of concern originate in breathing polluted outdoor air, living in substandard housing with indoor air pollution problems, including exposures to certain bioacrosols and combustion products, and working in jobs with occupational respiratory risks. Groups encompassed by this movement in the United States include various racial and ethnic minority populations. particularly thosc living within urban areas, and the socioccconomically disadvantaged. In the developing world, such exposures can occur at substantially higher levels and may, in some instances, extend to a majority of a given nation's population. Limited access to care and medications may enhance susceptibility to pollution.

The concept of environmental equity had not been formally voiced when the 1985 statement was written. The present committee viewed inequities of exposure as potentially representing a form of susceptibility to air pollution. In other words, individuals within the target groups may be at increased risk of experiencing adverse effects from a given level of ambient air pollution because their baseline risk level may have been raised by other exposures. Moreover, in some instances there may be genetic and nutritional factors enhancing susceptibility as well. It should be noted, however, that there are other exposure scenarios and other subpopulations with increased baseline risks that are not formally included within the environmental justice movement. The heterogeneity of populations needs full acknowledgment, whether it reflects disproportionate noxious exposures or other factors. Observing that there have been few investigations of the effects of other exposures, genetics, or nutrition on susceptibility to air pollution-related effects, either in the United States or internationally, the committee issued a call for additional research in these areas.

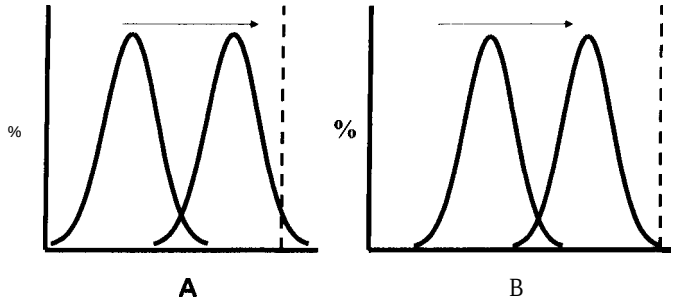

Figure 7. Hypothetical distributions **of exposure for two populations, *A* and *B*. (See text for explanation.)**

Economic Costs

Adverse health effects of air pollution incur costs, including direct costs of providing treatment for illness and indirect costs of lost work time and productivity. Cost-benefit analysis provides an estimate of the balancing of the costs of controls against the benefits; cost effectiveness analysis provides an indication of the level of control accomplished in relation to costs. Cost-benefit and cost-effectiveness analysis are assumption-laden tools now being used for policy-making purposes. Cost estimates depend on the valuation given to illness, lost work time and productivity, and even to lost life. It has been proposed that cost-benefit analysis may facilitate the process of deciding whether a given air pollution-related health impact should be considered adverse. The legislative history of the Clean Air Act explicitly excludes consideration of economic factors in setting ambient air quality standards or in developing emissions standards for hazardous air pollutants. In the context of air quality regulation, cost-benefit analysis is a multistep process involving the articulation of value judgments regarding potential costs (expenditures of public and private resources to reduce pollutant emissions and exposures) versus benefits (avoidance of specified adverse health impacts in a designated population). Benefits, in theory, should be quantified as the willingness of beneficiaries to pay to avoid the adverse impact. In practice, quantification of such health impacts from exposure to air pollution is often based on direct costs related to medical treatment and indirect costs such as school absenteeism, lost work time, decreased productivity, and, at the extreme, person-years of life lost. Valuations of a given effect may vary internationally, as differences in population age distributions, comorbidity, nutritional status, and other circumstances can affect this process. Ideally, cost–bene-

fit analysis should make explicit the value judgments underlying these assessments, highlighting distinctions among alternative pollution control strategies to achieve specific air quality standards. Willingness of individuals to pay to avoid adverse health effects is also estimated from responses to contingent valuation surveys and from market data concerning choices about employment that carries health risks.

Nevertheless, the committee concurred that the specification of which health effects should be considered adverse must precede the application of cost-benefit analysis for evaluation of air pollution control strategies. That is, once a given outcome is designated as adverse, this information can be used as input to cost-benefit analysis. Estimates of costs associated with a given health outcome. while useful from a public policy perspective, cannot be translated into any clinical or biological framework to distinguish adverse from nonadverse effects. Therefore, the committee concluded that however valuable this economists' tool may be for regulatory decision-making, cost-benefit analysis lay outside the scope of this position paper and, indeed, the expertise of the American Thoracic Society.

Susceptibility

The issue of susceptibility has been recognized throughout the history of our initiatives to regulate outdoor air pollution. Susceptibility, broadly defined, may include extrinsic factors, including the profile of exposures to other pollutants, for example, in the workplace or at home, and intrinsic factors, for example, genotype. The size of the population of individuals susceptible to indoor air pollution is large, potentially including infants and the elderly, persons with chronic heart and lung diseases, and the immunocompromised. Persons with multiple deleterious exposures may also be considered as having heightened susceptibility, particularly if the combined effects of the agents are synergistic. Even with the populations considered as susceptible there is a distribution of the degree of susceptibility. For example, levels of nonspecific airway responsiveness in persons with asthma span several orders of magnitude.

The current explosive growth in knowledge of the genetic basis of lung disease, including responses to environmental agents, will provide increasing insights into the mechanistic basis of susceptibility and provide markers of risk status. We already have evidence of between-person variation in the pulmonary function response to ozone and interstrain variation in the pulmonary effects of environmental exposures, including criteria pollutants, in rodent species. As we develop the capacity to more precisely identify those at risk, we may find it increasingly challenging to assure protection for all individuals against adverse health effects.

The present committee agreed with the principle espoused in the Clean Air Act: that regulations should extend protection to include those with enhanced susceptibility to air pollution, recognizing that some highly susceptible individuals may still respond to low-level exposures. Research now shows that some highly susceptible individuals may respond to common exposures that are often unavoidable. Furthermore, by definition, susceptible individuals cannot have the same margin of safety as the nonsusceptible groups within the population.

Heterogeneity of Perspectives

In society there is an extraordinary range of views on environmental issues and tolerance of risk. Looking more globally to other developed countries and to the developing countries, the range of perspectives is even broader. The committee acknowledges that any defined boundaries for distinguishing adverse health effects may not be embraced by all groups. This heterogeneity and the possibility that some may reject the committee's proposal challenged the committee to recommend in principle that control measures should maximize public health benefits while assuring equity.

DIMENSIONS OF ADVERSE EFFECTS

Biomarkers

Biomarkers are indicators of exposure, effect, or susceptibility that are measured in biologic materials, such as blood or bronchoalveolar lavage fluid. The concept of biomarkers has been formalized since the 1985 statement (17) and since then. a continuously increasing number of candidate indicators of exposure, effect, and susceptibility have been developed and applied in laboratory studies of humans and animals and in both occupational and environmental population studies. The progressive refinement of techniques in the field of cellular and molecular biology, and the burgeoning understanding of the complex chemical intracellular and cell-to-cell signaling pathways collectively termed "cytokines" (18), have rapidly expanded the spectrum of candidate markers of effects. It is now possible to detect very early, or initiating phases of responses at the molecular level, such as the production of mRNA for cytokines. Similarly, the progressive development of genetic assays and understanding of the human genome have provided numerous candidate markers of both effects and susceptibility (19).

Biomarkers relevant to air pollution have been measured in blood, exhaled air, urine, sputum, and in bronchoalveolar lavage fluids and tissue specimens collected by bronchoscopy. Bronchoalveolar lavage fluids, for example, are now frequently analyzed for cell numbers and types, cytokines (e.g., several interleukins and tumor necrosis factor α), enzymes (e.g., lactate dehydrogenasc and β-glucoronidase), fibronectin, protein, arachidonic acid metabolites, and reactive oxygen species. Because many of the epithelial cell types of the nasopharyngeal region are similar to epithelia and responses in the trachea, bronchi, and bronchioles, responses of nasal cells have been examined as potential biomarkers for their ability to predict parallel responses in lung airways, which are more difficult to sample.

Biomarkers have been extensively applied in toxicologic studies of air pollution, both in animals and in clinical studies involving exposures of human volunteers. The biomarkcrs are examined for their ability to provide evidence of "biologically effective" doses, including the earliest phases of homeostatic responses, the occurrence of injury, outcomes that are intermediate between injury and disease, and the presence of established disease processes. Genetic markers of susceptibility have begun to be applied to the respiratory system, and this application will undoubtedly expand rapidly. A frequent goal of biomarker development is the ability to readily measure changes that precede and predict continued or progressive events leading to clinical effects and disease (Figure 2).

To date, although biomarkers have proved informative about homeostatic adjustments to exposure and the mechanisms of injury and disease, lack of validation against previously established measures of effect. such as clinical status or even physiologic impairment, remains an important weakness. We do not know if elevations of biomarkers during short-term experimental exposures signal risk for ongoing injury and clinical effects or simply indicate transient responses that can provide insights into mechanisms of injury. The utility of some older biomarkers is well established, such as the relationships among carboxyhemoglobin. exposure to carbon monoxide,

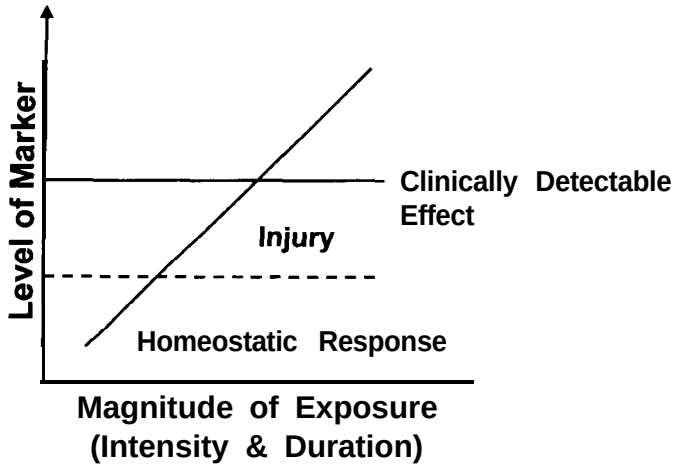

figure 2. Schema for considering biomarkers of response.

impairment of oxygen-carrying capacity, and the risk for angina in the presence of ischemic heart disease. However, the interpretative value for the majority of the many promising new cytokine and genetic biomarkers remains to be established. Not only is it difficult to assess the value of many biomarkers for distinguishing between physiological, homeostatic responses and injury, but it is also difficult to judge the value of changes during short-term exposures for predicting ongoing injury or risk for longer-term clinical effects.

The committee concluded that the continued development of biomarkers is an important need because of their considerable potential not only for detecting the adverse effects of air pollution exposure, but also for aiding the determination of the types and levels of response that should be considered adverse. We often do not know in a parallel, iterative manner, whether the exploration and validation of biomarkers will unquestionably advance our understanding of the mechanisms of homeostatic and injury responses. At this time, however, few of the rapidly growing list of candidate biomarkers have been validated to such an extent that their responses can be used with confidence to define the point at which a response should be equated to an adverse effect warranting preventive measures. Thus, we presently have only a very modest ability to translate evidence from biomarkers directly into a taxonomy of adverse health effects. Consequently, the committee cautions that not all changes in biomarkers related to air pollution should be considered as indicative of injury that represents an adverse effect.

Quality of Life

Health, in its broadest definition, includes not only the absence of disease but the attainment of well-being. Since the preparation of the 198.5 statement, the National Institutes of Health, the Centers of Disease Control, the Food and Drug Administration, and the World Health Organization have broadened their perspective of health to incorporate the concept of health-related quality of life as a valid and important health outcome. Health-related quality of life (HRQL) refers to the individual's perception of well-being, and includes such factors as self-care functioning, mental health, pain, and sense of overall well-being. Decreased health-related quality of life is widely accepted to be an adverse health effect. For this reason, measurable negative effects of air pollution on quality of life, whether for persons with chronic respiratory conditions or the population in general, were consequently considered by this committee to be adverse health effects. Air pollution exposure can adversely affect several domains of quality of life including physical functioning (particularly for persons with respiratory or cardiovascular conditions) and general well-being. Stinging, watery eyes resulting from air pollution not only reflect a chronic physical symptom but may decrease overall quality of life. Outdoor air pollution and odors have been associated with psychiatric symptoms, including anxiety and depression. Increased levels of some air pollutants have been reported to be associated with an increase in psychiatric admissions. The potential effects of air pollution and respiratory symptoms on different domains of quality of life are illustrated in Figure 3.

Measurement of the impact of air pollution on health-related quality of life can be accomplished either by measuring specific domains that may be influenced by air quality (e.g., anxiety, functional status), or by using specific quality of life instruments designed to measure multiple health-related domains (e.g., MOS-SF-36, St. George's Respiratory Questionnaire). The cost-benefits of improved air quality on health-related quality of life could also be measured by the use of quality of life measures that employ utility rating scales. The effects of air pollution of a magnitude considered to be clinically significant with these instruments should be regarded as adverse in interpreting evidence on the health effects of air pollution, regardless of the affected dimension. Additional research is needed to develop an information base for interpreting data from new and more sensitive instruments directed specifically at air pollution.

Physiological impact

The 198.5 statement acknowledged a distinction between reversible and irreversible effects. Healthy persons may sustain transient reductions in pulmonary function associated with air pollution exposure, e.g., reduction of the forced vital capacity (FVC) with exercise at times of higher levels of ozone pollution. However, the committee recommends that a small, transient loss of lung function, by itself, should not automatically be designated as adverse. In drawing the distinction between adverse and nonadverse reversible effects, this committee recommended that reversible loss of lung function in combination with the presence of symptoms should be considered as adverse. This recommendation is consistent with the 1985 statement. The Environmental Protection Agency has also needed to address the interpretation of such data. The Envi-

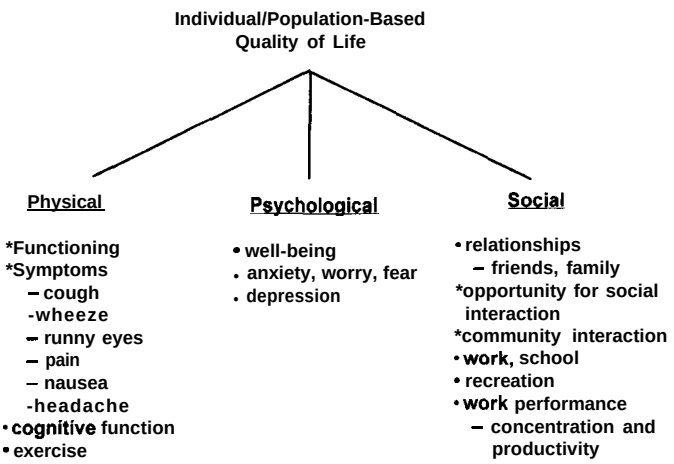

Figure 3. Quality of life domains vulnerable to the adverse health/respiratory effects of air pollution.

ronmental Protection Agency, in its 1989 review of ozone (20), offered a graded classification of lung function changes in persons with asthma. Reduction of the forced expiratory volume in 1 s (FEV_1) was graded as mild, moderate, or severe for reductions of less than 10%, 10–20%, and more than 20%, respectively. This classification has not been validated for acceptability or against other measures.

There is also epidemiologic evidence that air pollution may adversely affect lung growth or accelerate the age-related decline of lung function. Epidemiologic studies are limited in their power to detect such permanent effects and any evidence of association between air pollution exposure and permanent loss of function is indicative of an adverse effect at the population level. Some individuals may sustain clinically relevant, permanent losses of lung function. This committee considered that any detectable level of permanent lung function loss attributable to air pollution exposure should be considered as adverse.

Symptoms

Air pollution exposure can evoke symptoms in persons without underlying chronic heart or lung conditions and also provoke or increase symptom rates in persons with asthma and chronic obstructive lung disease. The Environmental Protection Agency also offered a scale for cough and pain on taking a deep breath in its 1989 ozone review (20). "Infrequent cough" was classified as "None/Normal."

Do all levels of increased symptom occurrence constitute an adverse health effect? The committee judged that air pollution-related symptoms associated with diminished quality of life or with a change in clinical status should be considered as adverse at the individual level. Characterizing the degree of symptomatology associated with diminished quality of life is an appropriate focus for research and a topic that could be investigated using new approaches for assessing quality of life. A change in clinical status can be appropriately set in a medical framework as one requiring medical care or a change in medication. At the population level, any detectable increment in symptom frequency should be considered as constituting an adverse health effect.

Clinical Outcomes

A wide range of clinical outcome measures has been considered in relation to air pollution, including population-level effects, such as increases in numbers of emergency room visits for asthma or hospitalizations for pneumonia, and individual-level effects, such as increased need for bronchodilator therapy. The present committee shared the view of the previous group: detectable effects of air pollution on clinical measures should be considered adverse.

At the population level, the magnitude of the detectable air pollution effect will depend on the extent of the data available for evaluation and methodological aspects of the data, including the degree of error affecting exposure and outcome variables. With large databases, seemingly modest effects may be detectable. However, the committee recommends that no level of effect of air pollution on population-level clinical indicators can be considered acceptable.

Mortality

Following the development of new approaches for the analysis of time-series data, extensive analyses have now been reported on the relationship between daily mortality counts and levels of air pollution on the same or prior days. Several prospective cohort studies have also addressed the effect of longer-term indicators of air pollution exposure on mortality, controlling for relevant individual factors, including age, sex, cigarette smoking, and occupational exposures, among others. Cross-sectional studies-comparing mortality across locations having different levels of air pollution while controlling for a variety of potential confounding factors-have also been conducted. The air pollution-associated mortality findings figured prominently in the recent revision of the U.S. NAAQS for particulate matter.

Associations between air pollution levels and daily mortality counts have been interpreted by some as reflecting the impact of air pollution on a pool of frail individuals with severe underlying heart or lung disease. One explanation for the day-to-day associations attributes them to a brief advancement of the time of death for extremely frail individuals who would have been expected to die soon even in the absence of an air pollution-related insult (21). Work has shown, however, that while this phenomenon of advancement, referred to as mortality displacement, may occur, it cannot provide a full explanation of the associations repeatedly found between daily fluctuations of air pollution and mortality (22, J. Schwartz, "Harvesting and long term exposure effects in the relationship between air pollution and mortality" [1999, unpublished manuscript]). In addition, some mortality time-series studies have found effects across all age strata, not just among the elderly or the very young, suggesting potentially substantial effects on person-years of life lost. Finally, studies of long-term exposures have shown a gradient of mortality risk from cardiopulmonary disease as well as differences in life expectancy across cities with different long-term pollution levels. Thus, although we still have little insight into the extent to which mortality displacement occurs, the evidentiary ensemble from several types of study designs consistently shows that air pollution can shorten the life span to an unacceptable degree.

Risk Assessment

Since the publication of the 1985 statement, quantitative risk assessment has emerged as a key tool for summarizing information on risks to health from environmental agents. Quantitative risk assessment offers a framework for organizing information on risks within its four elements: hazard identification, exposure assessment, dose-response assessment, and risk characterization. The findings of a risk assessment, encompassed in the risk characterization component, may include an overall assessment of impact, a description of the distribution of risk in the population, and an evaluation of risk for susceptible persons within the population. Quantitative risk assessment has been a cornerstone in evaluating risks of environmental carcinogens and we anticipate increasing application to non-carcinogenic health effects of environmental agents, including air pollution.

In interpreting the findings of risk assessments, guidance can be found in precedents offered by key interpretations of regulatory requirements, including the Supreme Court's decision on the benzene standard proposed by the Occupational Safety and Health Administration, and in pollutant-specific regulatory actions. Risks may be couched as the numbers of attributable events in the population and also as the level of risk incurred by individual members of the population.

The committee recognized the rising use and potential utility of quantitative risk assessment in characterizing the health effects of air pollution. However, the committee noted that the results of quantitative risk assessment can often be sensitive to assumptions regarding the distribution and magnitude of exposure, the choice of an appropriate dose-response relationship, and other input decisions. Judgments on acceptability of risk are societal and made through complex regulatory

processes involving extensive public input. The committee did not consider that its mandate extended to offering specific guidance on acceptable risk levels for populations or individuals, nor is risk assessment an appropriate basis for determining what constitutes an adverse effect.

CONCLUSIONS

Since the preparation of the 1985 statement of the American Thoracic Society, there have been tremendous advances in the scientific methods used to investigate the health effects of air pollution. These advances range from the molecular to the behavioral levels of inquiry. As a result, this statement covers topics that are new since the 1985 statement. Yet, this committee, like the 1985 group, was confronted by a lack of formal research or investigation on the very topic of this statement: the boundary between adverse and nonadverse effects. Consequently, the committee needed to exercise its collective judgment on matters that should be based in some broader, societal decision-making **process. Its recommendations are summarized below.**

- ***Biomarkers.*** Few of the rapidly growing list of candidate biomarkers have been validated sufficiently that their responses can be used with confidence to define the point at which a response should be equated to an adverse effect warranting preventive measures. The committee cautions that not all changes in biomarkers related to air pollution should be considered as indicative of injury that represents an adverse effect.
- ***Quality of life.*** Decreased health-related quality of life is widely accepted as an adverse health effect. For this reason, measurable negative effects of air pollution on quality of life, whether for persons with chronic respiratory conditions or for the population in general, were consequently considered to be adverse by this committee.
- ***Physiological impact.*** The committee recommends that a small, transient loss of lung function, by itself. should not automatically be designated as adverse. In drawing the distinction between adverse and nonadverse reversible effects, this committee recommended that reversible loss of lung function in combination with the presence of symptoms should be considered adverse. This committee considered that any detectable level of permanent lung function loss attributable to air pollution exposure should be considered adverse.
- ***Symptoms.*** The committee judged that air pollution-related symptoms associated with diminished quality of life or with a change in clinical status should be considered adverse at the individual level.
- ***Clinical outcomes.*** The present committee shared the view of the previous group: detectable effects of air pollution on clinical measures should be considered as adverse.
- ***Mortality.*** This committee agreed with the conclusion articulated by the 1985 group that any effect on mortality should be judged as adverse. In addition, we are now faced with the challenge of interpreting the findings of time-series studies of effects on short time frames. In interpreting this type of evidence, consideration needs to be given to the extent of life-shortening underlying the association.
- ***Population health versus individual risk.*** Assuming that the relationship between the risk factor and the disease is causal, the committee considered that such a shift in the risk factor distribution, and hence the risk profile of the exposed population, should be considered adverse, even in the absence of the immediate occurrence of frank illness.

This statement was prepared by an ad-hoc committee of the Assembly on Environmental and Occupational Health. Members of the committee are:

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APPENDIX E POLICY, PLANS, AND POTENTIAL FUTURE RULES

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POLICY, PLANS, AND POTENTIAL FUTURE RULES

The following regulatory measures are scheduled for consideration by the San Joaquin Air Pollution Control District during 2026.

- Rule 4550 (Conservation Management Practices). Potential amendments will satisfy commitments in the *2024 PM2.5 Plan* to evaluate potential emission reductions of PM2.5 from agricultural operations, to the extent that further controls and/or work practices are technologically and economically feasible.
- Rules 4601 (Architectural Coatings), 4603 (Surface Coating of Metal Parts and Products, Plastic Parts and Products, and Pleasure Crafts), 4604 (Can and Coil Coating Operations), 4653 (Adhesives and Sealants), and 4663 (Organic Solvent Cleaning, Storage, and Disposal) Potential amendments will satisfy commitments in the District's *Ozone Contingency Measure SIP Revision for the 2008 and 2015 8-Hour Ozone Standards*, to further strengthen the District's contingency measure strategy for these standards.
- Rule 4901 (Wood-Burning Fireplaces and Wood-Burning Heaters) Potential amendments will satisfy commitments in the *2024 PM2.5 Plan* to further reduce PM2.5 emissions from wood-burning devices, including the extension of the wood-burning season through March 31.
- Rule 4905 (Natural Gas-Fired, Fan-Type Central Furnaces) Potential amendments will include an extension of the emission fee period for the manufactured homes furnace category to provide additional time for the development of compliant furnace technologies, as no current feasible compliant technology exists for manufactured homes to meet applicable emission limits at this time.

Table E.1 Summary of County of Fresno General Plan Air Policies

Policy or Program		Applies to Project?
Policy OS-G.1:	The County shall develop standard methods for determining and mitigating project air quality impacts and related thresholds of significance for use in environmental documents. The County will do this in conjunction with the San Joaquin Valley Air Pollution Control District (SJVAPCD) and the cities in Fresno County.	No, project does not interfere with the County's ability to develop methods or thresholds.
Policy OS-G.2:	The County shall ensure that air quality impacts identified during the CEQA review process are fairly and consistently mitigated. The County shall require projects to comply with the County's adopted air quality impact assessment and mitigation procedures.	Yes, however, the appropriate environmental analysis has been conducted and is the purpose of this report. Therefore, while this policy applies to the project, its requirements are satisfied by the existence of the Report.
Policy OS-G.3:	The County shall participate with cities, surrounding counties, and regional agencies to address cross-jurisdictional and regional transportation and air quality issues.	No, project does not interfere with the County's ability to participate with other entities regarding transportation and air quality issues.
Policy OS-G.4:	The County shall consult with the SJVAPCD during CEQA review for projects that require air quality impact analysis and ensure that the SJVAPCD is on the distribution list for all CEQA documents.	No, project does not interfere with the County's ability to consult with the SJVAPCD
Policy OS-G.5:	The County shall participate with cities, surrounding counties, and regional agencies in the San Joaquin Valley in efforts to promote consistent air quality programs and implementation programs to the extent possible (e.g., transportation control measures, trip reduction ordinances, indirect source programs, etc.).	No, project does not interfere with the County's ability to promote consistent air quality programs.
Policy OS-G.6:	The County shall develop and implement employer-based trip reduction programs for County employees.	No, project does not interfere with the County's ability to develop trip reduction programs.
Policy OS-G.7:	The County shall encourage its departments to consider telecommuting programs as a trip reduction strategy.	No, project does not interfere with the County's ability to consider telecommuting.

Policy or Program		Applies to Project?
Policy OS-G.8:	The County fleet vehicle operators shall implement vehicle replacement practices that place a priority on replacement of older higher-emission vehicles and on purchasing new vehicles with engines using best available technologies and advanced fuels where feasible, consistent with cost effective management of the program.	No, project does not interfere with the County's ability to implement vehicle replacement practices.
Policy OS-G.9:	The County shall support the use of teleconferencing in lieu of employee travel to conferences and meetings when feasible.	No, project does not interfere with the County's ability to support the use of teleconferencing.
Policy OS-G.10:	The County shall encourage the establishment of public/private partnerships to develop satellite and neighborhood work centers for telecommuting.	No, project does not interfere with the County's ability to develop satellite and neighborhood work centers.
Policy OS-G.11:	The County shall continue, through its land use planning processes, to avoid inappropriate location of residential uses and sensitive receptors in relation to uses that include but are not limited to industrial and manufacturing uses and any other use which have the potential for creating a hazardous or nuisance effect.	No, project does not interfere with the County's ability to avoid inappropriate location of residential uses.
Policy OS-G.12:	The County shall require future development projects under the GPR/ZOU, to the maximum extent feasible, to use architectural coating materials, as defined in the San Joaquin Valley Air Pollution Control District's (SJVAPCD) Rule 4601, that are zero-emission or have a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available, or feasible, the coating with the lowest ROG rating available shall be used. These measures shall be noted on all construction plans, and the County shall perform periodic site inspections during construction to verify compliance.	Possibly, the project may include application of architectural coatings during maintenance activities for proposed facility features that would need to comply with Rule 4601.
Policy OS-G.13:	The County shall continue to promote public awareness of Valley Fever risks relating to ground disturbing activities through the provision of educational materials, webpages and resource contact information. For projects involving ground disturbance on unpaved areas left undisturbed for 6 months or more, the County shall require developers to provide project-specific Valley Fever training and training materials.	Yes, the project would affect unpaved areas left undisturbed for 6 months or more. Therefore, the Project would need to provide project-specific Valley Feber training and training materials to employees that may be exposed.
Policy OS-G.14:	The County shall include fugitive dust control measures as a requirement for subdivision maps, site plans, and grading permits. This will assist in implementing the SJVUAPCD's particulate matter of less than ten (10) microns (PM10) regulation (Regulation VIII). Enforcement actions can be coordinated with the Air District's Compliance Division.	No, does not apply to project.

Policy or Program		Applies to Project?
Policy OS-G.15:	The County shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.	Potentially applies to project. The Report considers minimization and appropriate materials in project.
Policy OS-G.16:	The County shall continue to work to reduce PM10 and PM2.5 emissions from County-maintained roads by considering shoulder treatments for dust control as part of road reconstruction projects.	No, project does not interfere with the County's ability to consider shoulder treatments for dust control.
Policy OS-G.17:	The County shall require the use of natural gas or the installation of low emission, EPA-certified fireplace inserts in all open hearth fireplaces in new homes. The County shall promote the use of natural gas over wood products in space heating devices and fireplaces in all existing and new homes.	No, project does not interfere with the County's ability to require low emission fireplace inserts.

Policy or Program		Applies to Project?
Policy EJ-A.1.	The County, during the development review process, shall require proposed new sensitive land uses (such as residential uses, schools, senior care facilities, and day care facilities) to be located an appropriate distance, to be. determined during the development review process, from freeways, major roadways, and railroad tracks based on analysis of physical circumstances of the project location so as to minimize potential impacts including, but not limited to, air and water pollution exposure, odor emissions, light, and glare.	No, the project is not a new sensitive land use.
Policy EJ-A.2.	The County shall require buffering and screening requirements as part of the development review process for all new potentially pollution producing land uses proposed to be located adjacent to existing sensitive land uses that have historically been associated with heightened levels of pollution. These land uses associated with pollution include industrial land uses, agricultural operations using pesticides applied by spray techniques, wastewater treatment plants, and landfills and waste treatment facilities.	No, the project may be adjacent to sensitive receptors but those receptors have CalEnviroScreen 3.0 scores less than the 75th percentile as presented in Figure EJ-5 (Pg. 2-196, General Plan) and are not considered disadvantaged communities.
Policy EJ-A.3.	The County shall during the development review land use process coordinate with local commercial and industrial developments to review and require incorporation into their projects the latest technologies and best practices to reduce emissions.	Yes, the County has reviewed feasible technologies and best practices for the project and they are incorporated where appropriate.
Policy EJ-A.4.	The County shall partner with the Fresno County Tobacco Free Coalition, and local nonprofits to educate and enhance public awareness on improving resident air quality, including lead mitigation and clean air technologies (HEPA filters and ventilation systems) and reducing secondhand smoke exposure to residents in multi-unit housing as funding allows.	No, the project will not affect the County's ability to partner with the Coalition and other non-profits.

Policy or Program		Applies to Project?
Policy EJ-A.5.	The County shall seek funding, such as the Congestion Mitigation and Air Quality Improvement Program (CMAQ), to develop projects to mitigate roadway pollution, such as widening roadway shoulders, the creation of green barriers and the prohibition of truck routing near or through sensitive land uses in an effort to improve Diesel Particulate Matter pollution along major thoroughfares the County.	No, the project will not affect the County's ability to seek funding.
Policy EJ-A.6.	The County shall coordinate with Caltrans to encourage the development of projects to mitigate roadway pollution along major interstates, such as the development of green barriers near existing sensitive land uses.	No, the project will not affect the County's ability to coordinate with Caltrans.
Policy EJ-A.7.	During the development review process, the County shall direct project applicants for projects located within the South-Central Fresno area to coordinate with the San Joaquin Valley Air Pollution Control District (District) to ensure review by the District regarding implementation of the strategies outlined within the District's Community Emissions Reduction Program (CERP) for the South-Central Fresno area. Prior to action on applicable development permits, the County shall require the applicant to provide documentation from the District verifying that CERP strategies have been reviewed/addressed.	No, the project is located outside of the South-Central Fresno area.
Policy EJ-A.8.	The County shall provide residents within disadvantaged communities the opportunity to review and comment on discretionary development projects within their communities.	Yes, a EIR has been prepared for the project and communities within the County have had the opportunity to review and comment.
Policy EJ-A.9.	The County shall partner with the San Joaquin Valley Air Pollution Control District to support dispersing public education and information regarding the threat of air quality hazards and options for increasing personal health and safety related to pollution exposure.	No, the project will not affect the County's ability to partner with the air district.
Policy EJ-A.10.	Annually, the County shall coordinate a meeting with community water and sewer providers to identify system upgrade, expansion, and consolidation of funding opportunities to ensure all community members have access to safe drinking water and wastewater services.	No, the project will not affect the County's ability to coordinate meetings.
Policy EJ-A.11.	The County shall give priority to disadvantaged communities when seeking infrastructure and active transportation funding opportunities.	No, the project will not affect the County's ability to give priority to disadvantaged communities.
Policy EJ-A.12.	New industrial development, which has the potential to create compatibility conflicts with surrounding sensitive uses, shall incorporate measures such as landscaped setbacks along road frontage, block walls, signage disclosing on-site emergency contact information, enclosed loading docks, and placement of loading docks and idling areas away from sensitive receptors in order to minimize potential impacts.	Yes, the project has incorporated measures that minimize potential impacts. Mitigation measures include a dust control plan and other requirements that will minimize potential impacts to less than significant levels.

Policy or Program		Applies to Project?
Policy EJ-A.13.	Automobile parking areas for new industrial development shall be planted with trees in a manner to provide adequate shade cover of at least 35% of the parking area utilizing trees or a combination of trees and photovoltaic solar shade structures. Landscaping for new industrial development shall use drought tolerant species with low biogenic emissions.	Yes, the project would have parking for employees and will provide adequate shade cover for those vehicles.
Policy EJ-A.14.	The County shall prohibit truck traffic from new industrial development to traverse through existing residentially zoned areas.	No, the project will not affect the County's ability to prohibit truck traffic from residentially zoned areas.
Policy EJ-A.15.	Consistent with the provisions contained in the California Air Resources Board (CARB) Air Quality and Land Use Handbook, project applicants shall identify appropriate measures for projects with sensitive uses located within 500 feet of freeways, heavily traveled arterials (daily vehicle trips of 10,000 or more), railways, and other sources of diesel particulate matter (DPM) and other known carcinogens. The County shall require development projects that are located within 500 feet of freeways, heavily traveled arterials (daily vehicle trips of 10,000 or more), railways, and other sources of DPM and other known carcinogens to retain a qualified air quality consultant to prepare a health risk assessment (HRA)in accordance with the CARB and the California Environmental Protection Agency's Office of Environmental Health and Hazard Assessment requirements to determine the exposure of nearby sensitive receptors to emission sources resulting from the project. Measures identified in the HRA shall be enforced by the County.	Maybe, the referenced Handbook omits industrial development projects from consideration. It is unclear if this applies to the project. Nevertheless, a HRA was prepared for this project.
Policy EJ-A.16.	The County shall, within one year of General Plan adoption, prepare a chart based on General Plan Amendment No. 559 (SB 244 Analysis), approved by the County in 2020 summarizing infrastructure deficits in disadvantaged unincorporated communities, and funding sources that could be used to remedy the infrastructure deficits. In each annual general plan progress report, the County shall report on what funding was sought and whether the funding was appropriated or awarded.	No, the project will not affect the County's ability to prepare a chart.

Table E.2 Fresno County Council of Governments Priority Climate Action Plan

GHG Reduction Measure		Applies to Project?
Transportation 1.	Develop a robust public electric vehicle charging network in Fresno County, including in the disadvantaged communities, to increase electric vehicle adoption in Fresno County. (Implementing measures could include a neighborhood electric vehicle (NEV) network).	No, the project will not affect the County's ability to develop a robust public electric vehicle charging network.
Transportation 2.	Continue to convert the municipal fleet (including transit) into zero emission vehicles and provide a sustainable and reliable	No, the project will not affect the County's ability to

GHG Reduction Measure		Applies to Project?
	support system for such zero-emission fleet which could include, but not limited to maintenance, charging facilities, training of personnel, etc. (Implementing measures could include fleet electrification, installation of electric vehicle charging infrastructure, etc.)	convert the municipal fleet into zero-emission vehicles.
Transportation 3.	Build a well-connected bike and pedestrian system that provides alternative transportation options including micromobility such as shared e-bike and e-scooter. (Implementing measures could include pedestrian network improvements, bike parking, expanded bikeway networks, electric bikeshare program, scooter share program, dedicate land for bike trails)	No, the project will not affect the County's ability to build a well-connected bike and pedestrian system.
Transportation 4.	Enhance the public transportation system by maintaining/expanding the existing transit system and implementing other transit strategies such as micro transit.	No, the project will not affect the County's ability to enhance the public transportation system.
Transportation 5.	Provide incentives for carpool and vanpool, and other shared mobility options. (Implementation measures could include commute trip reduction programs, end-of trip facilities, car-sharing program, employer-sponsored vanpool/shuttle, priced workplace parking, and/or employee parking "cash-out" programs.)	No, the project will not affect the County's ability to provide incentives for shared mobility options.
Building Energy 1.	Incentive programs for the purchase of certified energy efficient appliances, heating and cooling equipment, lighting, and building products to replace inefficient products. (Implementation could include air distribution system updates such as right-sizing fan system equipment and converting to a variable-air-volume system, heating and cooling system upgrades, reductions in supplemental energy load consumption by installing ENERGY STAR equipment, window films, and adding insulation or reflective roof coating and/or installation of energy-efficient lighting.)	No, the project will not affect the County's ability to provide incentives for energy efficient appliances and building systems.
Building Energy 2.	Incorporate water efficiency measures that reduce water heating energy consumption by installing alternative types of water heaters in place of gas storage tank heaters in residences.	No, the project is industrial and uses primarily unheated water.
Building Energy 3.	Bundle on-site renewable energy generation with energy efficiency improvements in residences and commercial buildings. (Implementation could include establishment of on-site renewable energy systems such as solar power with fuel cells and battery storage, biomass combustion, and/or wind power, limitations on non-renewable energy sources.)	No, the project is industrial and has no residences or commercial buildings.
Solid Waste and Wastewater 1.	Programs and incentives to reduce or divert waste (including food and/or yard waste) through improved production practices, improved collection services, and increased reuse or recycling rates. (Implementation measures could include organics diversion	No, the project does not affect the County's ability to create programs and incentives to reduce or divert waste. However, the project does include

GHG Reduction Measure		Applies to Project?
	program, educational programs to inform residents about reuse, recycling, composting, waste to energy, and zero waste programs. Local recycling and composting initiatives at the neighborhood level, expansion of local business recycling and composting efforts.)	equipment that would divert and recycle waste concrete debris generated by construction projects in the region.
Solid Waste and Wastewater 2.	Installation of renewable energy and energy efficiency measures at wastewater treatment facilities.	No, the project is not a wastewater treatment facility.
Agriculture 1.	Programs and incentives to reduce GHG emissions associated with manure management from livestock and poultry operations.	No, the project does not involve manure management.
Agriculture 2.	Programs and incentives to reduce GHG emissions associated with agricultural burning, including orchards and vineyards, through chipping and use for soil incorporation, on-site land application on agricultural land, off-site beneficial re-use, or other approved methods. (Implementation measures could include additional funding or outreach support for existing programs available through the San Joaquin Valley Air Pollution Control District (SJVAPCD) and USDA-NRCS, educational programs, or other direct funding opportunities for projects proposed as part of PCAP development.)	No, the project does not affect the County's ability to administrate programs or incentives; and does not involve agricultural burning.
Agriculture 3.	Programs and incentives to reduce GHG emissions associated with the operation of various agricultural equipment, such as tractors, harvesting equipment, utility terrain vehicles, dairy feed mixing electrification and agricultural pumps through zero-emission replacement as well as the installation of charging or re-fueling stations to support deployment. (Implementation measures could include additional funding or outreach support for existing programs available through USDA-NRCS and the SJVAPCD, educational programs, or other direct funding opportunities for projects proposed as part of PCAP development.)	No, the project does not affect the County's ability to administrate programs or incentives; and does not involve agricultural equipment.

Table E.3 Federal GHG Actions

Date	Action	Description
April 2, 2007	*Massachusetts v. EPA*, 549 U.S. 497	Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. (528-29.)
September 22, 2009	Mandatory Reporting Rule	This rule and subsequent rules which amend 40 CFR Part 98 require and govern the collection accurate and timely data on GHG emissions that can be used to inform future policy decisions.

Date	Action	Description
December 7, 2009	EPA Endangerment Findings	• Elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding." • Combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding." (*Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act* (Dec. 15, 2009) 74 Fed. Reg. 66496, 546.)
December 19, 2007	Energy Independence and Security Act (EISA)	• Increase the supply of alternative fuel sources by requiring fuel producers to use at least 36 billion gallons of biofuel in 2022. • Set a target of 35 miles per gallon (mpg) for the combined fleet of cars and light trucks by model year 2020 and establish a fuel economy program for medium and heavy duty vehicles. • Prescribe or revise standards affecting regional efficiency for heating and cooling products.
April 2010, September 2011, and August 2012	EPA and NHTSA Joint Final Rules for Vehicle Standards	• In 2010, established a National program consisting of new standards for light-duty vehicles model years 2012 through 2016 which achieve the 250 g CO_2/mile (35 mpg) target in the EISA beginning with the 2016 model year fleet. • In 2011, approved GHG emissions standards for medium and heavy duty trucks model years 2014 through 2018. • In 2012, approved standards for model year 2017 and beyond light duty vehicles to 163 g CO_2/mile (i.e., 54.5 mpg if achieved only by fuel efficiency) for model year 2025.
January 2, 2011	Clean Air Act Permitting for GHGs	On June 23, 2014, the U.S. Supreme Court issued its decision in Utility Air Regulatory Group v. EPA, 134 S. Ct. 2427 (2014) ("UARG"). The Court held that EPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD or title V permit. The Court also held that PSD permits that are otherwise required (based on emissions of other pollutants) may continue to require limitations on GHG emissions based on the application of Best Available Control Technology (BACT).
August 3, 2015	Clean Power Plan	The Plan provides standards for power plants, customized goals for states to cut the carbon pollution from power plants, national consistency, accountability and a level playing field while reflecting each state's energy mix. On February 9, 2016, the Supreme Court stayed implementation of the Clean Power Plan pending judicial review. EPA claims "The Court's decision was not on the merits of the rule. EPA firmly believes the Clean Power Plan will be upheld when the merits are considered because the rule rests on strong scientific and legal foundations."

Table E.3 Climate Change Policies and Measures

Recommended Action	Applies to Project?
Implement SB 350 by 2030: • Increase the Renewables Portfolio Standard to 50 percent of retail sales by 2030 and ensure grid reliability. • Establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030. • Reduce GHG emissions in the electricity sector through the implementation of the above measures and other actions as modeled in IRPs to meet GHG emissions reductions planning targets in the IRP process. Load-serving entities and publicly- owned utilities meet GHG emissions reductions planning targets through a combination of measures as described in IRPs.	No, Project will purchase grid electricity.
Implement Mobile Source Strategy (Cleaner Technology and Fuels): • At least 1.5 million zero emission and plug-in hybrid light-duty electric vehicles by 2025. • At least 4.2 million zero emission and plug-in hybrid light-duty electric vehicles by 2030. • Further increase GHG stringency on all light-duty vehicles beyond existing Advanced Clean Cars regulations. • Medium- and heavy-duty GHG Phase 2. • Innovative Clean Transit: Transition to a suite of to-be-determined innovative clean transit options. Assumed 20 percent of new urban buses purchased beginning in 2018 will be zero emission buses with the penetration of zero-emission technology ramped up to 100 percent of new sales in 2030. Also, new natural gas buses, starting in 2018, and diesel buses, starting in 2020, meet the optional heavy-duty low-NO_X standard. • Last Mile Delivery: New regulation that would result in the use of low NO_X or cleaner engines and the deployment of increasing numbers of zero-emission trucks primarily for class 3-7 last mile delivery trucks in California. This measure assumes ZEVs comprise 2.5 percent of new Class 3–7 truck sales in local fleets starting in 2020, increasing to 10 percent in 2025 and remaining flat through 2030. • Further reduce VMT through continued implementation of SB 375 and regional Sustainable Communities Strategies; forthcoming statewide implementation of SB 743; and potential additional VMT reduction strategies not specified in the Mobile Source Strategy but included in the document "Potential VMT Reduction Strategies for Discussion."	No, Project vehicles are heavy-heavy duty and were not subject to heavy-duty GHG Phase 1 regulations. Thus, they would be unlikely to be subject to these measures.
Increase stringency of SB 375 Sustainable Communities Strategy (2035 targets).	No, Project does not affect SB 375 targets.
By 2019, adjust performance measures used to select and design transportation facilities. • Harmonize project performance with emissions reductions, and increase competitiveness of transit and active transportation modes (e.g. via guideline documents, funding programs, project selection, etc.).	No, Project does not affect viability of transit or active modes.
By 2019, develop pricing policies to support low-GHG transportation (e.g. low-emission vehicle zones for heavy duty, road user, parking pricing, transit discounts).	No, Project does not affect government pricing policies.

Recommended Action	Applies to Project?
Implement California Sustainable Freight Action Plan: • Improve freight system efficiency. • Deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize both zero and near-zero emission freight vehicles and equipment powered by renewable energy by 2030.	No, Project does not affect whether Freight Action Plan can be implemented.
Adopt a Low Carbon Fuel Standard with a CI reduction of 18 percent.	No, Project does not affect CARB's ability to adopt standards.
Implement the Short-Lived Climate Pollutant Strategy by 2030: • 40 percent reduction in methane and hydrofluorocarbon emissions below 2013 levels. • 50 percent reduction in black carbon emissions below 2013 levels.	No, Project does not affect whether SLCP strategy can be implemented.
By 2019, develop regulations and programs to support organic waste landfill reduction goals in the SLCP and SB 1383.	No, Project does not affect CARB's ability to adopt regulations.
Implement the post-2020 Cap-and-Trade Program with declining annual caps.	No, Project does not affect CARB's ability to implement Cap-and-Trade.
By 2018, develop Integrated Natural and Working Lands Implementation Plan to secure California's land base as a net carbon sink: • Protect land from conversion through conservation easements and other incentives. • Increase the long-term resilience of carbon storage in the land base and enhance sequestration capacity • Utilize wood and agricultural products to increase the amount of carbon stored in the natural and built environments • Establish scenario projections to serve as the foundation for the Implementation Plan	No, Project does not affect ability to develop such a plan.
Establish a carbon accounting framework for natural and working lands as described in SB 859 by 2018.	No, Project does not affect ability to establish such a framework.
Implement Forest Carbon Plan	No, Project does not affect ability to implement such a plan.
Identify and expand funding and financing mechanisms to support GHG reductions across all sectors.	No, Project does not affect whether CARB can identify and expand funding.

Source: (CARB, 2017, pp. 103-104).

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APPENDIX F CONSTRUCTION PHASE EMISSIONS
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CEMEX Rockfield Custom Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	CEMEX Rockfield
Construction Start Date	2/16/2026
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70000
Precipitation (days)	31.2000
Location	36.95507882131341, -119.73210939193791
County	Fresno
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2508
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.43

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Industrial	1.000000	User Defined Unit	350.000	0.00000	0.00000	0.00000	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.44583	0.37462	4.43089	4.48804	0.00971	0.13556	0.00000	0.13556	0.12472	0.00000	0.12472	—	1,051.21	1,051.21	0.04264	0.00853	0.00000	1,054.81
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.14138	3.48935	68.0710	72.2596	0.13349	2.81932	29.1462	31.9655	2.59377	13.8231	16.4169	—	14,735.0	14,735.0	0.59807	0.13084	0.02804	14,789.0
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	—	4.86967	5.03833	0.01027	0.17705	1.05344	1.23049	0.16288	0.47946	0.64235	—	1,123.43	1,123.43	0.04553	0.00954	0.01765	1,127.42
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	—	0.88871	0.91950	0.00188	0.03231	0.19225	0.22456	0.02973	0.08750	0.11723	—	185.996	185.996	0.00754	0.00158	0.00292	186.658
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Threshold	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	No	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.44583	0.37462	4.43089	4.48804	0.00971	0.13556	0.00000	0.13556	0.12472	0.00000	0.12472	—	1,051.21	1,051.21	0.04264	0.00853	0.00000	1,054.81
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	4.14138	3.48935	68.0710	72.2596	0.13349	2.81932	29.1462	31.9655	2.59377	13.8231	16.4169	—	14,735.0	14,735.0	0.59807	0.13084	0.02804	14,789.0
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	NaN	NaN	4.86967	5.03833	0.01027	0.17705	1.05344	1.23049	0.16288	0.47946	0.64235	—	1,123.43	1,123.43	0.04553	0.00954	0.01765	1,127.42
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	NaN	NaN	0.88871	0.91950	0.00188	0.03231	0.19225	0.22456	0.02973	0.08750	0.11723	—	185.996	185.996	0.00754	0.00158	0.00292	186.658

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.74146	3.14387	29.1635	28.8082	0.04890	1.24251	—	1.24251	1.14311	—	1.14311	—	5,297.94	5,297.94	0.21491	0.04298	—	5,316.12
Dust From Material Movement	—	—	—	—	—	—	19.6570	19.6570	—	10.1024	10.1024	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10251	0.08613	0.79900	0.78927	0.00134	0.03404	—	0.03404	0.03132	—	0.03132	—	145.149	145.149	0.00589	0.00118	—	145.647
Dust From Material Movement	—	—	—	—	—	—	0.53855	0.53855	—	0.27678	0.27678	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01871	0.01572	0.14582	0.14404	0.00024	0.00621	—	0.00621	0.00572	—	0.00572	—	24.0311	24.0311	0.00097	0.00019	—	24.1135
Dust From Material Movement	—	—	—	—	—	—	0.09829	0.09829	—	0.05051	0.05051	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06381	0.06188	0.04437	0.48488	0.00000	0.00000	0.09521	0.09521	0.00000	0.02232	0.02232	—	92.2320	92.2320	0.00386	0.00451	0.00935	93.6830
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00185	0.00173	0.00109	0.01353	0.00000	0.00000	0.00256	0.00256	0.00000	0.00060	0.00060	—	2.61716	2.61716	0.00010	0.00012	0.00426	2.66065
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00034	0.00032	0.00020	0.00247	0.00000	0.00000	0.00047	0.00047	0.00000	0.00011	0.00011	—	0.43330	0.43330	0.00002	0.00002	0.00071	0.44050
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.3. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.62261	3.04400	27.2253	27.5707	0.06093	1.12137	—	1.12137	1.03166	—	1.03166	—	6,598.58	6,598.58	0.26767	0.05353	—	6,621.22
Dust From Material Movement	—	—	—	—	—	—	9.20359	9.20359	—	3.65375	3.65375	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19850	0.16679	1.49180	1.51072	0.00334	0.06145	—	0.06145	0.05653	—	0.05653	—	361.566	361.566	0.01467	0.00293	—	362.807
Dust From Material Movement	—	—	—	—	—	—	0.50431	0.50431	—	0.20021	0.20021	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03623	0.03044	0.27225	0.27571	0.00061	0.01121	—	0.01121	0.01032	—	0.01032	—	59.8613	59.8613	0.00243	0.00049	—	60.0668
Dust From Material Movement	—	—	—	—	—	—	0.09204	0.09204	—	0.03654	0.03654	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07293	0.07072	0.05071	0.55415	0.00000	0.00000	0.10881	0.10881	0.00000	0.02550	0.02550	—	105.408	105.408	0.00441	0.00516	0.01068	107.066
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00423	0.00395	0.00250	0.03093	0.00000	0.00000	0.00584	0.00584	0.00000	0.00137	0.00137	—	5.98209	5.98209	0.00022	0.00028	0.00974	6.08150
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00077	0.00072	0.00046	0.00564	0.00000	0.00000	0.00107	0.00107	0.00000	0.00025	0.00025	—	0.99040	0.99040	0.00004	0.00005	0.00161	1.00686
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44583	0.37462	4.43089	4.48804	0.00971	0.13556	—	0.13556	0.12472	—	0.12472	—	1,051.21	1,051.21	0.04264	0.00853	—	1,054.81
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.44583	0.37462	4.43089	4.48804	0.00971	0.13556	—	0.13556	0.12472	—	0.12472	—	1,051.21	1,051.21	0.04264	0.00853	—	1,054.81
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.23941	0.20117	2.37933	2.41002	0.00521	0.07280	—	0.07280	0.06697	—	0.06697	—	564.483	564.483	0.02290	0.00458	—	566.420
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.04369	0.03671	0.43423	0.43983	0.00095	0.01329	—	0.01329	0.01222	—	0.01222	—	93.4566	93.4566	0.00379	0.00076	—	93.7773
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.7. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.90546	0.76084	7.11822	9.93804	0.01395	0.31987	—	0.31987	0.29428	—	0.29428	—	1,510.59	1,510.59	0.06128	0.01226	—	1,515.78
Paving	NaN	NaN	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02481	0.02084	0.19502	0.27227	0.00038	0.00876	—	0.00876	0.00806	—	0.00806	—	41.3861	41.3861	0.00168	0.00034	—	41.5281
Paving	NaN	NaN	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00453	0.00380	0.03559	0.04969	0.00007	0.00160	—	0.00160	0.00147	—	0.00147	—	6.85194	6.85194	0.00028	0.00006	—	6.87545
Paving	NaN	NaN	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05470	0.05304	0.03803	0.41562	0.00000	0.00000	0.08161	0.08161	0.00000	0.01913	0.01913	—	79.0560	79.0560	0.00331	0.00387	0.00801	80.2997
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00159	0.00148	0.00094	0.01160	0.00000	0.00000	0.00219	0.00219	0.00000	0.00051	0.00051	—	2.24328	2.24328	0.00008	0.00011	0.00365	2.28056
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00029	0.00027	0.00017	0.00212	0.00000	0.00000	0.00040	0.00040	0.00000	0.00009	0.00009	—	0.37140	0.37140	0.00001	0.00002	0.00060	0.37757
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	01/01/2026	1/14/2026	5.00000	10.00000	—
Grading	Grading	01/01/2026	1/28/2026	5.00000	20.0000	10 Acres graded
Building Construction	Building Construction	01/01/2026	10/01/2026	5.00000	196.000	—
Paving	Paving	01/01/2026	1/14/2026	5.00000	10.00000	—

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	Worker	17.5000	7.70000	LDA,LDT1,LDT2
Site Preparation	Vendor	—	4.00000	HHDT,MHDT
Site Preparation	Hauling	0.00000	20.0000	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	Worker	20.0000	7.70000	LDA,LDT1,LDT2
Grading	Vendor	—	4.00000	HHDT,MHDT
Grading	Hauling	0.00000	20.0000	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	Worker	0.00000	7.70000	LDA,LDT1,LDT2
Building Construction	Vendor	0.00000	4.00000	HHDT,MHDT
Building Construction	Hauling	0.00000	20.0000	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	Worker	15.0000	7.70000	LDA,LDT1,LDT2
Paving	Vendor	—	4.00000	HHDT,MHDT
Paving	Hauling	0.00000	20.0000	HHDT
Paving	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	15.0000	0.00000	0.00000
Grading	—	—	60.0000	0.00000	0.00000
Paving	0.00000	0.00000	0.00000	0.00000	NaN

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	31.3700	annual days of extreme heat
Extreme Precipitation	1.85000	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	11.5600	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

8. User Changes to Default Data

8.4. Construction

8.4.1. Construction Phases

Phase Type	Phase Name	Model Parameter	Default Value	New Value
Site Preparation	Site Preparation	Start Date	8/31/2027	01/01/2026
Site Preparation	Site Preparation	End Date	8/1/2028	1/14/2026
Site Preparation	Site Preparation	Work Days per Phase	240.000	10.00000
Grading	Grading	Start Date	8/2/2028	01/01/2026
Grading	Grading	End Date	12/18/2030	1/28/2026
Grading	Grading	Work Days per Phase	620.000	20.0000
Grading	Grading	Description	—	10 Acres graded
Building Construction	Building Construction	Start Date	12/19/2030	01/01/2026
Building Construction	Building Construction	End Date	9/24/2054	10/01/2026
Building Construction	Building Construction	Work Days per Phase	6,200.00	196.000
Paving	Paving	Start Date	9/25/2054	01/01/2026
Paving	Paving	End Date	6/2/2056	1/14/2026
Paving	Paving	Work Days per Phase	440.000	10.00000

CE01_Rockfield_Addendum_Paving

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.20	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Unit represents a single road system covering a total area of 1.2 acres.

Construction Phase -

Road Dust - Area will not be paved prior to contstruction of paved roads.

Consumer Products -

Construction Off-road Equipment Mitigation - Assuming 3% moisture content due to continuous watering. Per AP-42 Section 13.2.2 this is approximately equivalent to 80% control as outlined in The Report.

CE01_Rockfield_Addendum_Paving - Fresno County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	3
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	10
tblConstructionPhase	PhaseEndDate	10/22/2020	1/6/2050
tblConstructionPhase	PhaseEndDate	8/12/2021	1/20/2050
tblConstructionPhase	PhaseStartDate	10/17/2020	1/1/2050
tblConstructionPhase	PhaseStartDate	7/30/2021	1/7/2050
tblLandUse	LotAcreage	0.00	1.20
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	100	0

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2050	4.6500e-003	0.0186	0.0577	1.2000e-004	0.0108	4.8000e-004	0.0113	5.3200e-003	4.8000e-004	5.8000e-003	0.0000	10.5200	10.5200	3.7000e-004	0.0000	10.5291
Maximum	**4.6500e-003**	**0.0186**	**0.0577**	**1.2000e-004**	**0.0108**	**4.8000e-004**	**0.0113**	**5.3200e-003**	**4.8000e-004**	**5.8000e-003**	**0.0000**	**10.5200**	**10.5200**	**3.7000e-004**	**0.0000**	**10.5291**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2050	4.6500e-003	0.0186	0.0577	1.2000e-004	4.8400e-003	4.8000e-004	5.3200e-003	2.2400e-003	4.8000e-004	2.7200e-003	0.0000	10.5200	10.5200	3.7000e-004	0.0000	10.5291
Maximum	**4.6500e-003**	**0.0186**	**0.0577**	**1.2000e-004**	**4.8400e-003**	**4.8000e-004**	**5.3200e-003**	**2.2400e-003**	**4.8000e-004**	**2.7200e-003**	**0.0000**	**10.5200**	**10.5200**	**3.7000e-004**	**0.0000**	**10.5291**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**55.35**	**0.00**	**53.00**	**57.89**	**0.00**	**53.10**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
118	12-17-2049	3-16-2050	0.0237	0.0237
		Highest	0.0237	0.0237

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2050	1/6/2050	5	4	
2	Paving	Paving	1/7/2050	1/20/2050	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2050

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3200e-003	4.4900e-003	9.6000e-003	3.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	2.9644	2.9644	1.1000e-004	0.0000	2.9670
Total	**1.3200e-003**	**4.4900e-003**	**9.6000e-003**	**3.0000e-005**	**9.8300e-003**	**1.3000e-004**	**9.9600e-003**	**5.0500e-003**	**1.3000e-004**	**5.1800e-003**	**0.0000**	**2.9644**	**2.9644**	**1.1000e-004**	**0.0000**	**2.9670**

3.2 Grading - 2050

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.7000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1028	0.1028	0.0000	0.0000	0.1028
Total	**2.0000e-005**	**1.0000e-005**	**1.7000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1028**	**0.1028**	**0.0000**	**0.0000**	**0.1028**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.8300e-003	0.0000	3.8300e-003	1.9700e-003	0.0000	1.9700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3200e-003	4.4900e-003	9.6000e-003	3.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	2.9644	2.9644	1.1000e-004	0.0000	2.9670
Total	**1.3200e-003**	**4.4900e-003**	**9.6000e-003**	**3.0000e-005**	**3.8300e-003**	**1.3000e-004**	**3.9600e-003**	**1.9700e-003**	**1.3000e-004**	**2.1000e-003**	**0.0000**	**2.9644**	**2.9644**	**1.1000e-004**	**0.0000**	**2.9670**

3.2 Grading - 2050

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.7000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1028	0.1028	0.0000	0.0000	0.1028
Total	**2.0000e-005**	**1.0000e-005**	**1.7000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1028**	**0.1028**	**0.0000**	**0.0000**	**0.1028**

3.3 Paving - 2050

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.2200e-003	0.0140	0.0472	8.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004	0.0000	7.0351	7.0351	2.6000e-004	0.0000	7.0415
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.2200e-003**	**0.0140**	**0.0472**	**8.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.6000e-004**	**3.6000e-004**	**0.0000**	**7.0351**	**7.0351**	**2.6000e-004**	**0.0000**	**7.0415**

3.3 Paving - 2050

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	5.0000e-005	7.1000e-004	0.0000	8.1000e-004	0.0000	8.1000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.4177	0.4177	0.0000	0.0000	0.4178
Total	**9.0000e-005**	**5.0000e-005**	**7.1000e-004**	**0.0000**	**8.1000e-004**	**0.0000**	**8.1000e-004**	**2.1000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.4177**	**0.4177**	**0.0000**	**0.0000**	**0.4178**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.2200e-003	0.0140	0.0472	8.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004	0.0000	7.0351	7.0351	2.6000e-004	0.0000	7.0415
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.2200e-003**	**0.0140**	**0.0472**	**8.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.6000e-004**	**3.6000e-004**	**0.0000**	**7.0351**	**7.0351**	**2.6000e-004**	**0.0000**	**7.0415**

3.3 Paving - 2050

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	5.0000e-005	7.1000e-004	0.0000	8.1000e-004	0.0000	8.1000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.4177	0.4177	0.0000	0.0000	0.4178
Total	**9.0000e-005**	**5.0000e-005**	**7.1000e-004**	**0.0000**	**8.1000e-004**	**0.0000**	**8.1000e-004**	**2.1000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.4177**	**0.4177**	**0.0000**	**0.0000**	**0.4178**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.492212	0.031147	0.169820	0.116157	0.015815	0.004502	0.033398	0.126328	0.002363	0.001519	0.005062	0.001083	0.000594

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CE01_Rockfield_Addendum_Paving

Fresno County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Cement and Mortar Mixers	Diesel	No Change	0	1	No Change	0.00
Graders	Diesel	No Change	0	1	No Change	0.00
Pavers	Diesel	No Change	0	1	No Change	0.00
Rollers	Diesel	No Change	0	1	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	1	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	2	No Change	0.00
Paving Equipment	Diesel	No Change	0	1	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Cement and Mortar Mixers	2.20000E-004	1.38000E-003	1.16000E-003	0.00000E+000	5.00000E-005	5.00000E-005	0.00000E+000	1.71850E-001	1.71850E-001	2.00000E-005	0.00000E+000	1.72300E-001
Graders	3.80000E-004	7.30000E-004	2.30000E-003	1.00000E-005	3.00000E-005	3.00000E-005	0.00000E+000	1.04572E+000	1.04572E+000	3.00000E-005	0.00000E+000	1.04650E+000
Pavers	7.70000E-004	2.11000E-003	1.19900E-002	2.00000E-005	1.00000E-004	1.00000E-004	0.00000E+000	1.86175E+000	1.86175E+000	6.00000E-005	0.00000E+000	1.86330E+000
Paving Equipment	8.60000E-004	2.25000E-003	1.38500E-002	3.00000E-005	1.00000E-004	1.00000E-004	0.00000E+000	2.16045E+000	2.16045E+000	7.00000E-005	0.00000E+000	2.16216E+000
Rollers	5.60000E-004	3.58000E-003	8.50000E-003	1.00000E-005	5.00000E-005	5.00000E-005	0.00000E+000	1.20934E+000	1.20934E+000	4.00000E-005	0.00000E+000	1.21046E+000
Rubber Tired Dozers	6.60000E-004	2.12000E-003	3.20000E-003	2.00000E-005	8.00000E-005	8.00000E-005	0.00000E+000	1.34755E+000	1.34755E+000	5.00000E-005	0.00000E+000	1.34885E+000
Tractors/Loaders/ Backhoes	1.09000E-003	6.34000E-003	1.58200E-002	3.00000E-005	7.00000E-005	7.00000E-005	0.00000E+000	2.20280E+000	2.20280E+000	9.00000E-005	0.00000E+000	2.20493E+000

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Cement and Mortar Mixers	2.20000E-004	1.38000E-003	1.16000E-003	0.00000E+000	5.00000E-005	5.00000E-005	0.00000E+000	1.71850E-001	1.71850E-001	2.00000E-005	0.00000E+000	1.72300E-001
Graders	3.80000E-004	7.30000E-004	2.30000E-003	1.00000E-005	3.00000E-005	3.00000E-005	0.00000E+000	1.04571E+000	1.04571E+000	3.00000E-005	0.00000E+000	1.04650E+000
Pavers	7.70000E-004	2.11000E-003	1.19900E-002	2.00000E-005	1.00000E-004	1.00000E-004	0.00000E+000	1.86175E+000	1.86175E+000	6.00000E-005	0.00000E+000	1.86330E+000
Paving Equipment	8.60000E-004	2.25000E-003	1.38500E-002	3.00000E-005	1.00000E-004	1.00000E-004	0.00000E+000	2.16044E+000	2.16044E+000	7.00000E-005	0.00000E+000	2.16215E+000
Rollers	5.60000E-004	3.58000E-003	8.50000E-003	1.00000E-005	5.00000E-005	5.00000E-005	0.00000E+000	1.20934E+000	1.20934E+000	4.00000E-005	0.00000E+000	1.21046E+000
Rubber Tired Dozers	6.60000E-004	2.12000E-003	3.20000E-003	2.00000E-005	8.00000E-005	8.00000E-005	0.00000E+000	1.34755E+000	1.34755E+000	5.00000E-005	0.00000E+000	1.34885E+000
Tractors/Loaders/Backhoes	1.09000E-003	6.34000E-003	1.58200E-002	3.00000E-005	7.00000E-005	7.00000E-005	0.00000E+000	2.20279E+000	2.20279E+000	9.00000E-005	0.00000E+000	2.20492E+000

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Cement and Mortar Mixers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	9.56279E-006	9.56279E-006	0.00000E+000	0.00000E+000	0.00000E+000
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	4.62867E-006	4.62867E-006	0.00000E+000	0.00000E+000	4.62500E-006
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	4.53968E-006	4.53968E-006	0.00000E+000	0.00000E+000	4.53529E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
Yes	Soil Stabilizer for unpaved Roads	PM10 Reduction	80.00	PM2.5 Reduction	80.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	61.00	PM2.5 Reduction	61.00	Frequency (per day)	3.00
Yes	Unpaved Road Mitigation	Moisture Content %	3.00	Vehicle Speed (mph)	10.00		
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Grading	Fugitive Dust	0.01	0.01	0.00	0.00	0.61	0.61
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value

No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.00	0.15		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			
No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				

No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			
No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	150.00
No	Use Low VOC Paint (Residential Exterior)	150.00
No	Use Low VOC Paint (Non-residential Interior)	150.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
No	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	
No	% Electric Leafblower	
No	% Electric Chainsaw	

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

APPENDIX G PROJECT EMISSIONS

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		Baseline									
		Ton/hr	Ton/day	ton/yr	ton/hour material imports	ton/year material imports	Gal/year diesel imports	Paved Trip Length (miles)	Unpaved Trip Length (miles)	trips/day	trips/yr
	Plant Site										
Plant Site	Asphalt Plant										
	Ready Mix Plant	382	2,548	381,375	45	44,544 (b)		0.31	0.16	289	43,206
	Recycle Plant	225	1,500	25,000	225	25,000	3210.17	0.31	0.28	242	2,000
	Aggregates Plant	475	6,000	1,580,413				0.31	0.28	480	84,922
	Mined Aggregate										
	Site Services, Visitors, Mobile Equipment Diesel Delivery						263,262 (d)	0.31	0.28	4	1,072
	Employee Trips									108	26,926
	Quarry Site										
Quarry Site	Asphalt Plant										
	Ready Mix Plant										
	Recycle Plant										
	Aggregates Plant										
	Mined Aggregate	475	6,000	1,580,413				0	0.85	480	112,500
	Site Services, Visitors, Mobile Equipment Diesel Delivery										
	Employee Trips									2	500

Shaded Cells represent lack of source or source with de mimimis emissions
Production based on email from John Buada Dated 7/18/19
Annual Trips and Baseline aggregates production based on TIS Tables 4.1 - 4.4 Dated 11/15/19 (Appendix C)
Daily Trips calculated based on maximum day and may differ from TIS tables
Site Services and Visitor Trips Include Diesel Delivery for Onsite Mobile Equiptment
Trip lenghts based on Google Earth Measurments and Email from John Buada Dated 5/3/18
Site Services and Visitor Trips Devided by site based on produced
tonnage for Years 0 - 30, and are assumed to take the longest possible path
Assumes 1 Asphalt plant diesel delivery and 2 mobile equiptment diesel deliveries in Max Day
a - based on 0.05 tons liquid asphalt/ton asphalt
b - based on 0.140 ton cement and supplment/ton concrete

d - based on historic peak sales document
General Assumptions:

9.5	yards RMC per load
27	tons asphalt oil per load
27	tons cement and/or supplement per load
25	tons asphalt per load
25	tons aggregate or recycled material per load
7500	gal diesel per load
2.012	tons/yd3 concrete
1.15	Scaling factor to account for 15% waste

		Years 0 - 30									
		ton/hr	ton/day	ton/yr	ton/hour material imports	ton/year material imports	Gal/year diesel imports	Paved Trip Length (miles)	Unpaved Trip Length (miles)	trips/day	trips/yr
	Plant Site										
Plant Site	Asphalt Plant	500	3,333	500,000	25	25,000 (a)	0 (c)	0.27	0.24	281	41,852
	Ready Mix Plant	382	2,548	603,600	45	70,500 (b)		0.31	0.16	289	68,380
	Recycle Plant	225	1,500	200,000	225	200,000	25,681	0.31	0.28	242	32,007
	Aggregates Plant	475	4,000	275,000				0.31	0.28	320	22,000
	Mined Aggregate	800	4,000	275,000				0	0.2	320	11,000
	Site Services, Visitors, Mobile Equipment Diesel Delivery						209,175 (d)	0.31	0.28	9	1,362
	Employee Trips									94	24,252
	Quarry Site										
Quarry Site	Asphalt Plant										
	Ready Mix Plant										
	Recycle Plant										
	Aggregates Plant	1,100	12,000	2,725,000				0.39	0.31	960	218,000
	Mined Aggregate	1,100	12,000	2,725,000				0	0.85	960	218,000
	Site Services, Visitors, Mobile Equipment Diesel Delivery						361,080 (d)	0.39	0.31	9	1,228
	Employee Trips									24	6,000

Shaded Cells represent lack of source or source with de mimimis emissions
Production based on email from John Buada Dated 7/18/19
Baseline trips and annual aggregates production based on TIS Tables 4.1 - 4.4 Dated 11/15/19 (Appendix C)
Trips conservatively estimated based on potential materials sales/usage and may differ from TIS Tables
Site Services and Visitor Trips Include Diesel Delivery for Onsite Mobile Equiptment
Trip lenghts based on Google Earth Measurments and Email from John Buada Dated 5/3/18
Site Services and Visitor Trips Devided by site based on produced
tonnage for Years 0 - 30, and are assumed to take the longest possible path
Assumes 2 mobile equiptment diesel deliveries in Max Day
a - based on 0.05 tons liquid asphalt/ton asphalt
b - based on 0.140 ton cement and supplment/ton concrete
c - assumes natural gas fired asphalt plant
d - assumes 0.132506377 gal diesel used in mobile equiptment per ton of total export scaled from baseline
General Assumptions:

9.5	yards RMC per load
27	tons asphalt oil per load
27	tons cement and/or supplement per load
25	tons asphalt per load
25	tons aggregate or recycled material per load
7500	gal diesel per load
2.012	tons/yd3 concrete

		Years 31 - 100									
		ton/hr	ton/day	ton/yr	ton/hour material imports	ton/year material imports	Gal/year diesel imports	Paved Trip Length (miles)	Unpaved Trip Length (miles)	trips/day	trips/yr
	Plant Site										
Plant Site	Asphalt Plant										
	Ready Mix Plant										
	Recycle Plant										
	Aggregates Plant										
	Mined Aggregate										
	Site Services, Visitors, Mobile										
	Equipment Diesel Delivery										
	Employee Trips										
	Quarry Site										
Quarry Site	Asphalt Plant	500	3,333	500,000	25	25,000 (a)	0 (c)	0.36	0.00	280	41,852
	Ready Mix Plant	382	2,548	603,600	45	70,500 (b)		0.48	0.00	289	68,380
	Recycle Plant	225	1,500	200,000	225	200,000	25,681	0.39	0.31	240	32,007
	Aggregates Plant	1,100	14,000	3,000,000				0.39	0.31	1,120	240,000
	Mined Aggregate	1,100	14,000	3,000,000				0.00	0.20	1,120	240,000
	Site Services, Visitors, Mobile										
	Equipment Diesel Delivery						570,254 (d)	0.39	0.31	10	1,388
	Employee Trips									118	30,252

Shaded Cells represent lack of source or source with de mimimis emissions
Production based on email from John Buada Dated 7/18/19
Baseline trips and annual aggregates production based on TIS Tables 4.1 - 4.4 Dated 11/15/19 (Appendix C)
Trips conservatively estimated based on potential materials sales/usage and may differ from TIS Tables
Site Services and Visitor Trips Include Diesel Delivery for Onsite Mobile Equiptment
Trip lenghts based on Google Earth Measurments and Email from John Buada Dated 5/3/18
Site Services and Visitor Trips Devided by site based on produced
tonnage for Years 0 - 30, and are assumed to take the longest possible path
Assumes 2 mobile equiptment diesel deliveries in Max Day
a - based on 0.05 tons liquid asphalt/ton asphalt
b - based on 0.140 ton cement and supplment/ton concrete
c - assumes natural gas fired asphalt plant
d - assumes 0.132506377 gal diesel used in mobile equiptment per ton of total export scaled from baseline
General Assumptions:

9.5	yards RMC per load
27	tons asphalt oil per load
27	tons cement and/or supplement per load
25	tons asphalt per load
25	tons aggregate or recycled material per load
7500	gal diesel per load
2.012	tons/yd3 concrete

Plant Site

(units followed by * are permitted)	Baseline (lbs/year) ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	-	-	-	-	-	-	-	-
Asphalt Plant Dryer*	-	-	-	-		-	-	-
Asphalt Plant Silos*	-	-	-	-		-	-	-
Asphalt Plant Oil Heater*	-	-	-	-		-	-	-
Asphalt Plant Fugitive Dust*				-		-	-	
Asphalt Plant Onsite Haul	-	-	-	-	-	-	-	-
Ready Mix Plant Total	43.7	109.8	473.8	10,088.9	16.3	10,105.2	2,180.8	0.4
Ready Mix Plant*				381.1		381.1	111.3	
Ready Mix Onsite Haul	43.7	109.8	473.8	9,707.8	16.3	9,724.1	2,069.5	0.4
Recycle Plant Total	31.8	146.1	349.7	823.9	10.5	834.4	182.3	0.7
Recycle Plant*				38.9		38.9	5.7	
Recycle Engine*	29.2	139.8	322.2		9.5	9.5	9.5	0.7
Recycle Plant Onsite Haul	2.5	6.4	27.5	785.0	0.9	786.0	167.1	0.0
Aggregates Plant Total	107.9	270.8	1,169.1	49,538.9	40.1	49,579.1	11,827.0	0.9
Aggregates Processing*				4,428.3		4,428.3	1,293.1	
Total Aggregates Mining								
Quarrying Fugitive Ems.								
Offroad Engines								
Aggregates Drops				236.8		236.8	69.1	
Aggregates Storage*				11,541.3		11,541.3	3,370.1	
Aggregates Plant Onsite Haul	107.9	270.8	1,169.1	33,332.5	40.1	33,372.6	7,094.8	0.9
Visitors, Diesel Delivery Onsite	1.4	3.4	14.8	420.8	0.5	421.3	89.6	0.0
Employee Commute	962.8	12,132.6	753.7		31.7	31.7	14.8	2.7
Total Permitted	29.2	139.8	322.2	16,389.6	9.5	16,399.1	4,789.6	0.7
Total Permit-Exempt	155.5	390.4	1,685.2	44,482.9	57.9	44,540.8	9,490.1	1.3
Total Plant Site	**1,147.5**	**12,662.7**	**2,761.1**	**60,872.5**	**99.1**	**60,971.6**	**14,294.4**	**4.7**
Plant Site Models (g/s)	**0.017**	**0.183**	**0.040**	**0.878**	**0.001**	**0.879**	**0.206**	**0.000**

Plant Site

(units followed by * are permitted)	Years 0 - 30 (lbs/year) ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	12,248.4	67,683.9	4,897.5	15,941.9	6.6	15,948.5	3,568.8	1,710.3
Asphalt Plant Dryer*	4,100.0	65,000.0	4,371.4	1,244.3	-	1,244.3	291.6	1,700.0
Asphalt Plant Silos*	8,055.0	1,265.0	-	27.8	-	27.8	27.8	-
Asphalt Plant Oil Heater*	91.9	1,402.8	425.9	126.9	-	126.9	126.9	10.0
Asphalt Plant Fugitive Dust*				462.0		462.0	134.9	
Asphalt Plant Onsite Haul	1.5	16.1	100.3	14,081.0	6.6	14,087.6	2,987.6	0.3
Ready Mix Plant Total	2.3	24.2	151.0	15,967.3	9.9	15,977.2	3,437.0	0.5
Ready Mix Plant*				603.1		603.1	176.1	
Ready Mix Onsite Haul	2.3	24.2	151.0	15,364.1	9.9	15,374.1	3,260.9	0.5
Recycle Plant Total	221.1	1,118.1	2,377.0	12,874.1	73.3	12,947.4	2,778.5	5.7
Recycle Plant*				311.2		311.2	45.6	
Recycle Engine*	219.7	1,103.9	2,288.3		67.4	67.4	67.4	5.4
Recycle Plant Onsite Haul	1.4	14.2	88.7	12,562.9	5.8	12,568.8	2,665.5	0.3
Aggregates Plant Total	919.8	5,810.1	10,734.3	12,871.0	434.3	13,305.4	3,466.7	15.2
Aggregates Processing*				1,022.0		1,022.0	298.4	
Total Aggregates Mining	918.9	5,800.3	10,673.3	1,155.0	430.3	1,585.3	735.0	15.1
Quarrying Fugitive Ems.				1,155.0		1,155.0	337.3	
Offroad Engines	918.9	5,800.3	10,673.3		430.3	430.3	397.7	15.1
Aggregates Drops				50.6		50.6	14.8	
Aggregates Storage*				2,008.2		2,008.2	586.4	
Aggregates Plant Onsite Haul	0.9	9.8	61.0	8,635.2	4.0	8,639.2	1,832.1	0.2
Visitors, Diesel Delivery Onsite	0.1	0.6	3.8	534.6	0.2	534.8	113.4	0.0
Employee Commute	743.0	9,048.6	466.0		27.7	27.7	12.3	2.3
Total Permitted	12,466.5	68,771.7	7,085.6	5,805.6	67.4	5,873.0	1,755.2	1,715.5
Total Permit-Exempt	925.1	5,865.2	11,078.0	52,383.3	457.0	52,840.3	11,609.2	16.3
Total Plant Site	**14,134.6**	**83,685.5**	**18,629.6**	**58,188.9**	**552.0**	**58,741.0**	**13,376.7**	**1,734.0**
Plant Site Models (g/s)	**0.204**	**1.207**	**0.269**	**0.839**	**0.008**	**0.847**	**0.193**	**0.025**

Plant Site

(units followed by * are permitted)	Years 31 - 100 (lbs/year)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total								
Asphalt Plant Dryer*								
Asphalt Plant Silos*								
Asphalt Plant Oil Heater*								
Asphalt Plant Fugitive Dust*								
Asphalt Plant Onsite Haul								
Ready Mix Plant Total								
Ready Mix Plant*								
Ready Mix Onsite Haul								
Recycle Plant Total								
Recycle Plant*								
Recycle Engine*								
Recycle Plant Onsite Haul								
Aggregates Plant Total								
Aggregates Processing*								
Total Aggregates Mining								
Quarrying Fugitive Ems.								
Offroad Engines								
Aggregates Drops								
Aggregates Storage*								
Aggregates Plant Onsite Haul								
Visitors, Diesel Delivery Onsite								
Employee Commute								
Total Permitted								
Total Permit-Exempt								
Total Plant Site								
Plant Site Models (g/s)								

Quarry Site

	Baseline (lbs/year)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total								
Asphalt Plant Dryer*								
Asphalt Plant Silos*								
Asphalt Plant Oil Heater*								
Asphalt Plant Fugitive Dust*								
Asphalt Plant Onsite Haul								
Ready Mix Plant Total								
Ready Mix Plant*								
Ready Mix Onsite Haul								
Recycle Plant Total								
Recycle Plant*								
Recycle Engine*								
Recycle Plant Onsite Haul								
Aggregates Plant Total	9,701.0	53,614.2	125,012.7	166,206.5	5,233.5	171,440.0	42,691.3	110.5
Aggregates Processing*								
Aggregates Mining Total	9,496.3	53,100.3	122,794.6	33,261.4	5,157.4	38,418.7	14,453.3	108.7
Quarrying Fugitive Ems.				33,261.4		33,261.4	9,712.3	
Offroad Engines	9,496.3	53,100.3	122,794.6		5,157.4	5,157.4	4,741.0	108.7
Blasting								
Aggregates Drops								
Aggregates Storage*								
Aggregates Plant Onsite Haul	204.7	513.9	2,218.1	132,945.1	76.2	133,021.3	28,238.0	1.8
Visitors, Diesel Delivery Onsite								
Employee Commute	17.9	225.3	14.0		0.6	0.6	0.3	0.0
Total Permitted	-	-	-	-	-	-	-	-
Total Permit-Exempt	9,701.0	53,614.2	125,012.7	166,206.5	5,233.5	171,440.0	42,691.3	110.5
Total Quarry Site	**9,718.9**	**53,839.5**	**125,026.7**	**166,206.5**	**5,234.1**	**171,440.6**	**42,691.6**	**110.6**
Quarry Site Models (total g/s)	**0.140**	**0.777**	**1.803**	**2.397**	**0.075**	**2.473**	**0.616**	**0.002**

Quarry Site

	Years 0 - 30 (lbs/year)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total								
Asphalt Plant Dryer*								
Asphalt Plant Silos*								
Asphalt Plant Oil Heater*								
Asphalt Plant Fugitive Dust*								
Asphalt Plant Onsite Haul								
Ready Mix Plant Total								
Ready Mix Plant*								
Ready Mix Onsite Haul								
Recycle Plant Total								
Recycle Plant*								
Recycle Engine*								
Recycle Plant Onsite Haul								
Aggregates Plant Total	9,116.2	148,877.6	129,636.9	137,984.8	4,311.0	142,295.8	36,705.5	2,876.4
Aggregates Processing*				10,127.3		10,127.3	2,957.2	
Aggregates Mining Total	9,105.2	148,763.6	128,925.2	12,694.6	4,264.2	16,958.7	7,684.4	2,874.1
Quarrying Fugitive Ems.				12,694.6		12,694.6	3,743.4	
Offroad Engines	9,105.2	57,476.1	105,762.7		4,264.2	4,264.2	3,941.0	149.1
Blasting		91,287.5	23,162.5					2,725.0
Aggregates Drops				501.4		501.4	146.4	
Aggregates Storage*				19,899.9		19,899.9	5,810.8	
Aggregates Plant Onsite Haul	11.0	114.0	711.7	94,761.6	46.8	94,808.5	20,106.7	2.3
Visitors, Diesel Delivery Onsite	0.1	0.6	4.0	533.8	0.3	534.1	113.3	0.0
Employee Commute	183.8	2,238.6	115.3		6.8	6.8	3.0	0.6
Total Permitted	-	-	-	30,027.2	-	30,027.2	8,767.9	-
Total Permit-Exempt	9,116.3	148,878.2	129,640.9	108,491.4	4,311.3	112,802.7	28,050.8	2,876.4
Total Quarry Site	**9,300.1**	**151,116.9**	**129,756.2**	**138,518.6**	**4,318.1**	**142,836.7**	**36,821.8**	**2,877.0**
Quarry Site Models (total g/s)	**0.134**	**2.180**	**1.871**	**1.998**	**0.062**	**2.060**	**0.531**	**0.041**

Quarry Site

	Years 31 - 100 (lbs/year)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	12,256.9	67,791.9	4,866.0	1,915.0	6.0	1,921.0	597.9	1,710.4
Asphalt Plant Dryer*	4,100.0	65,000.0	4,371.4	1,244.3	-	1,244.3	291.6	1,700.0
Asphalt Plant Silos*	8,055.0	1,265.0	-	27.8	-	27.8	27.8	-
Asphalt Plant Oil Heater*	91.9	1,402.8	425.9	126.9	-	126.9	126.9	10.0
Asphalt Plant Fugitive Dust*				462.0		462.0	134.9	
Asphalt Plant Onsite Haul	10.1	124.1	68.7	54.1	6.0	60.0	16.7	0.4
Ready Mix Plant Total	1.7	19.0	68.9	700.2	10.9	711.1	24.5	0.4
Ready Mix Plant*				603.1		603.1		
Ready Mix Onsite Haul	1.7	19.0	68.9	97.1	10.9	108.0	24.5	0.4
Recycle Plant Total	116.5	1,076.7	348.4	14,224.1	17.3	14,241.4	3,007.6	5.7
Recycle Plant*				311.2		311.2	45.6	
Recycle Engine*	115.3	1,063.7	301.3		9.8	9.8	9.8	5.4
Recycle Plant Onsite Haul	1.2	13.0	47.2	13,912.9	7.5	13,920.4	2,952.3	0.3
Aggregates Plant Total	6,483.0	149,689.8	40,178.1	151,797.6	492.4	152,290.0	36,475.9	3,183.8
Aggregates Processing*				11,149.4		11,149.4	3,255.6	
Aggregates Mining Total	6,474.3	149,592.0	39,824.5	13,849.6	436.3	14,285.9	4,520.7	3,181.8
Quarrying Fugitive Ems.				13,849.6		13,849.6	4,084.4	
Offroad Engines	6,474.3	49,092.0	14,324.5		436.3	436.3	436.3	181.8
Blasting		100,500.0	25,500.0			-		3,000.0
Aggregates Drops				565.8		565.8	165.2	
Aggregates Storage*				21,908.1		21,908.1	6,397.2	
Aggregates Plant Onsite Haul	8.7	97.7	353.6	104,324.8	56.1	104,380.8	22,137.2	2.1
Visitors, Diesel Delivery Onsite	0.1	0.6	2.0	603.3	0.3	603.7	128.0	0.0
Employee Commute	335.0	6,279.3	51.1		29.1	29.1	10.5	2.3
Total Permitted	12,362.1	68,731.5	5,098.5	35,832.8	9.8	35,842.6	10,289.4	1,715.5
Total Permit-Exempt	6,496.0	149,846.5	40,364.9	133,407.6	517.1	133,924.6	29,944.6	3,185.0
Total Quarry Site	**19,193.2**	**224,857.3**	**45,514.5**	**169,240.3**	**556.0**	**169,796.3**	**40,244.4**	**4,902.7**
Quarry Site Models (total g/s)	**0.277**	**3.243**	**0.656**	**2.441**	**0.008**	**2.449**	**0.580**	**0.071**

		Baseline (lbs/year)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Off-site	Non-Employee Vehicles (Haul Trucks)	Impacts assessed based on change in regional activity (Appendix J).							
	Between Sites	436.0	1,094.7	4,725.0	605.2	162.3	767.5	242.5	3.8
	Employee Commutes	980.7	12,357.9	767.7	-	32.3	32.3	15.0	2.7
	Electricity	-		-	-	-	-	-	-
	Total Off-site	**1,416.7**	**13,452.5**	**5,492.7**	**605.2**	**194.6**	**799.8**	**257.6**	**6.5**

PROJECT TOTALS (BOTH SITES)	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Total Permitted	29.2	139.8	322.2	16,389.6	9.5	16,399.1	4,789.6	0.7
Total Permit-Exempt	11,273.2	67,457.1	132,190.6	211,294.6	5,485.9	216,780.6	52,439.0	118.3
Grand Total	11,302.5	67,596.9	132,512.8	227,684.3	5,495.5	233,179.7	57,228.6	119.0
Total Permitted (tons)	0.0	0.1	0.2	8.2	0.0	8.2	2.4	0.0
Total Permit-Exempt (tons)	5.6	33.7	66.1	105.6	2.7	108.4	26.2	0.1
Grand Total (tons)	5.7	33.8	66.3	113.8	2.7	116.6	28.6	0.1
Total Both Sites ton/yr	5.7	33.8	66.3	113.8	2.7	116.6	28.6	0.1
Total Both Sites MT/yr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Net Increase Permitted (tons)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Net Permit-Exempt (tons)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Net Increase MT/yr	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.
Shaded Cells represent lack of source or source with de mimimis emissions

		Years 0 - 30 (lbs/year)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Off-site	Non-Employee Vehicles (Haul Trucks)	19.7	91.2	857.4	ND	ND	23.8	22.7	7.9
	Between Sites	7.3	76.2	475.6	302.6	31.3	333.9	75.7	1.5
	Employee Commutes	926.8	11,287.3	581.3	-	34.5	34.5	15.3	2.8
	Electricity	-	-	-	-	-	-	-	-
	Total Off-site	**953.8**	**11,454.7**	**1,914.2**	**302.6**	**65.8**	**392.2**	**113.8**	**12.2**
	PROJECT TOTALS (BOTH SITES)	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
	Total Permitted	12,466.5	68,771.7	7,085.6	35,832.8	67.4	35,900.2	10,523.1	1,715.5
	Total Permit-Exempt	10,995.2	166,198.0	142,633.1	161,177.4	4,834.0	166,035.1	39,773.8	2,905.0
	Grand Total	23,461.7	234,969.8	149,718.7	197,010.2	4,901.4	201,935.4	50,297.0	4,620.4
	Total Permitted (tons)	6.2	34.4	3.5	17.9	0.0	18.0	5.3	0.9
	Total Permit-Exempt (tons)	5.5	83.1	71.3	80.6	2.4	83.0	19.9	1.5
	Grand Total (tons)	11.7	117.5	74.9	98.5	2.5	101.0	25.1	2.3
	Total Both Sites ton/yr	11.7	117.5	74.9	98.5	2.5	101.0	25.1	2.3
	Total Both Sites MT/yr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Net Increase Permitted (tons)	**6.2**	**34.3**	**3.4**	**9.7**	**0.0**	**9.8**	**2.9**	**0.9**
	Net Permit-Exempt (tons)	**-0.1**	**49.4**	**5.2**	**-25.1**	**-0.3**	**-25.4**	**-6.3**	**1.4**
	Net Increase MT/yr	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.
Shaded Cells represent lack of source or source with de mimimis emissions

		Years 31 - 100 (lbs/year)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Off-site	Non-Employee Vehicles (Haul Trucks)	19.7	91.2	857.4	ND	ND	23.8	22.7	7.9
	Between Sites	-	-	-	-	-	-	-	-
	Employee Commutes	335.0	6,279.3	51.1	-	29.1	29.1	10.5	2.3
	Electricity	-	-	-	-	-	-	-	-
	Total Off-site	**354.7**	**6,370.5**	**908.4**	**-**	**29.1**	**52.9**	**33.2**	**10.2**
	PROJECT TOTALS (BOTH SITES)	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
	Total Permitted	12,362.1	68,731.5	5,098.5	35,832.8	9.8	35,842.6	10,289.4	1,715.5
	Total Permit-Exempt	6,850.7	156,217.0	41,273.3	133,407.6	546.2	133,977.5	29,977.8	3,195.2
	Grand Total	19,212.8	224,948.5	46,371.9	169,240.3	556.0	169,820.1	40,267.2	4,910.6
	Total Permitted (tons)	6.2	34.4	2.5	17.9	0.0	17.9	5.1	0.9
	Total Permit-Exempt (tons)	3.4	78.1	20.6	66.7	0.3	67.0	15.0	1.6
	Grand Total (tons)	9.6	112.5	23.2	84.6	0.3	84.9	20.1	2.5
	Total Both Sites ton/yr	9.6	112.5	23.2	84.6	0.3	84.9	20.1	2.5
	Total Both Sites MT/yr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Net Increase Permitted (tons)	**6.2**	**34.3**	**2.4**	**9.7**	**0.0**	**9.7**	**2.7**	**0.9**
	Net Permit-Exempt (tons)	**-2.2**	**44.4**	**-45.5**	**-38.9**	**-2.5**	**-41.4**	**-11.2**	**1.5**
	Net Increase MT/yr	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.

Plant Site

(units followed by * are permitted)	Baseline (lbs/day) ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	-	-	-	-	-	-	-	-
Asphalt Plant Dryer*	-	-	-	-		-	-	-
Asphalt Plant Silos*	-	-	-	-		-	-	-
Asphalt Plant Oil Heater*	-	-	-	-		-	-	-
Asphalt Plant Fugitive Dust*				-		-	-	
Asphalt Plant Onsite Haul	-	-	-	-	-	-	-	-
Ready Mix Plant Total	0.3	0.8	3.3	67.4	0.1	67.5	14.6	0.0
Ready Mix Plant*				2.5		2.5	0.7	
Ready Mix Onsite Haul	0.3	0.8	3.3	64.9	0.1	65.0	13.8	0.0
Recycle Plant Total	3.5	15.9	38.1	99.3	1.1	100.4	21.8	0.1
Recycle Plant*				4.3		4.3	0.6	
Recycle Engine*	3.2	15.1	34.8		1.0	1.0	1.0	0.1
Recycle Plant Onsite Haul	0.3	0.8	3.3	95.0	0.1	95.1	20.2	0.0
Aggregates Plant Total	0.6	1.5	6.6	238.0	0.2	238.3	54.6	0.0
Aggregates Processing*				16.8		16.8	4.9	
Total Aggregates Mining								
Quarrying Fugitive Ems.								
Offroad Engines								
Aggregates Drops				1.2		1.2	0.4	
Aggregates Storage*				31.6		31.6	9.2	
Aggregates Plant Onsite Haul	0.6	1.5	6.6	188.4	0.2	188.6	40.1	0.0
Visitors, Diesel Delivery Onsite	0.0	0.0	0.0	1.4	0.0	1.4	0.3	0.0
Employee Commute								
Total Permitted	3.2	15.1	34.8	55.3	1.0	56.3	16.5	0.1
Total Permit-Exempt	1.2	3.1	13.3	350.9	0.5	351.3	74.8	0.0
Total Plant Site	**4.4**	**18.2**	**48.1**	**406.1**	**1.5**	**407.6**	**91.3**	**0.1**
Plant Site Models (g/s)	0.0230	0.095	0.253	2.132	0.008	2.140	0.479	0.000

Plant Site

(units followed by * are permitted)	Years 0 - 30 (lbs/day) ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	81.3	445.7	31.0	106.4	0.0	106.5	23.4	11.4
Asphalt Plant Dryer*	27.3	433.3	29.1	8.3	-	8.3	1.9	11.3
Asphalt Plant Silos*	53.7	8.4	-	0.2	-	0.2	0.2	-
Asphalt Plant Oil Heater*	0.3	3.8	1.2	0.3	-	0.3	0.3	0.0
Asphalt Plant Fugitive Dust*				3.1		3.1	0.9	
Asphalt Plant Onsite Haul	0.0	0.1	0.7	94.5	0.0	94.6	20.1	0.0
Ready Mix Plant Total	0.0	0.1	0.6	67.4	0.0	67.4	14.5	0.0
Ready Mix Plant*				2.5		2.5	0.7	
Ready Mix Onsite Haul	0.0	0.1	0.6	64.9	0.0	64.9	13.8	0.0
Recycle Plant Total	3.2	15.2	35.5	99.3	1.1	100.3	21.7	0.1
Recycle Plant*				4.3		4.3	0.6	
Recycle Engine*	3.2	15.1	34.8	-	1.0	1.0	1.0	0.1
Recycle Plant Onsite Haul	0.0	0.1	0.7	95.0	0.0	95.0	20.2	0.0
Aggregates Plant Total	1.9	10.6	25.0	163.5	1.2	164.7	38.6	0.0
Aggregates Processing*				14.9		14.9	4.3	
Total Aggregates Mining	1.9	10.4	24.1	16.8	1.2	18.0	5.8	0.0
Quarrying Fugitive Ems.				16.8		16.8	4.9	
Offroad Engines	1.9	10.4	24.1		1.2	1.2	0.9	0.0
Aggregates Drops				0.7		0.7	0.2	
Aggregates Storage*				5.5		5.5	1.6	
Aggregates Plant Onsite Haul	0.0	0.1	0.9	125.6	0.1	125.7	26.6	0.0
Visitors, Diesel Delivery Onsite	0.0	0.0	0.0	3.5	0.0	3.5	0.7	0.0
Employee Commute								
Total Permitted	84.4	460.6	65.1	39.1	1.0	40.1	11.6	11.4
Total Permit-Exempt	1.9	10.9	27.0	401.1	1.4	402.4	87.4	0.0
Total Plant Site	**86.3**	**471.5**	**92.1**	**440.2**	**2.4**	**442.6**	**99.1**	**11.5**
Plant Site Models (g/s)	0.453	2.476	0.484	2.311	0.013	2.323	0.520	0.060

Plant Site

(units followed by * are permitted)	Years 31 - 100 (lbs/day)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total								
Asphalt Plant Dryer*								
Asphalt Plant Silos*								
Asphalt Plant Oil Heater*								
Asphalt Plant Fugitive Dust*								
Asphalt Plant Onsite Haul								
Ready Mix Plant Total								
Ready Mix Plant*								
Ready Mix Onsite Haul								
Recycle Plant Total								
Recycle Plant*								
Recycle Engine*								
Recycle Plant Onsite Haul								
Aggregates Plant Total								
Aggregates Processing*								
Total Aggregates Mining								
Quarrying Fugitive Ems.								
Offroad Engines								
Aggregates Drops								
Aggregates Storage*								
Aggregates Plant Onsite Haul								
Visitors, Diesel Delivery Onsite								
Employee Commute								
Total Permitted								
Total Permit-Exempt								
Total Plant Site								
Plant Site Models (g/s)								

		Baseline (lbs/day)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Quarry Site	Asphalt Plant Total								
	Asphalt Plant Dryer*								
	Asphalt Plant Silos*								
	Asphalt Plant Oil Heater*								
	Asphalt Plant Fugitive Dust*								
	Asphalt Plant Onsite Haul								
	Ready Mix Plant Total								
	Ready Mix Plant*								
	Ready Mix Onsite Haul								
	Recycle Plant Total								
	Recycle Plant*								
	Recycle Engine*								
	Recycle Plant Onsite Haul								
	Aggregates Plant Total	36.9	203.8	475.7	592.7	19.9	612.6	145.9	0.4
	Aggregates Processing*								
	Aggregates Mining Total	36.1	201.6	466.2	25.5	19.6	45.1	25.4	0.4
	Quarrying Fugitive Ems.				25.5		25.5	7.4	
	Offroad Engines	36.1	201.6	466.2		19.6	19.6	18.0	0.4
	Blasting								
	Aggregates Drops								
	Aggregates Storage*								
	Aggregates Plant Onsite Haul	0.9	2.2	9.5	567.2	0.3	567.6	120.5	0.0
	Visitors, Diesel Delivery Onsite								
	Employee Commute	0.1	0.9	0.1		0.0	0.0	0.0	0.0
	Total Permitted	-	-	-	-	-	-	-	-
	Total Permit-Exempt	36.9	203.8	475.7	592.7	19.9	612.6	145.9	0.4
	Total Quarry Site	**36.9**	**204.7**	**475.7**	**592.7**	**19.9**	**612.6**	**145.9**	**0.4**
	Quarry Site Models (g/s)	**0.194**	**1.075**	**2.497**	**3.112**	**0.105**	**3.216**	**0.766**	**0.002**

		Baseline (lbs/day)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Off-site	Non-Employee Vehicles (Haul Trucks)	Impacts assessed based on change in regional activity (Appendix J).							
	Between Sites	2.6	4.7	20.2	2.6	0.7	3.3	1.0	0.0
	Employee Commutes	0.1	0.9	0.1	-	0.0	0.0	0.0	0.0
	Electricity	-		-	-	-	-	-	-
	Total Off-site	**2.7**	**5.6**	**20.2**	**2.6**	**0.7**	**3.3**	**1.0**	**0.0**

	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Total Permitted	3.2	15.1	34.8	55.3	1.0	56.3	16.5	0.1
Total Permit-Exempt	40.8	212.4	509.2	946.2	21.1	967.2	221.8	0.4
Grand Total	44.0	228.4	544.0	1,001.4	22.1	1,023.5	238.2	0.5
Total Both Sites MT/day	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Net Increase Permitted (lbs/day)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Net Increse Permit Exempt (lbs/day)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.
Shaded Cells represent lack of source or source with de mimimis emissions

		Years 0 - 30 (lbs/day)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Quarry Site	Asphalt Plant Total								
	Asphalt Plant Dryer*								
	Asphalt Plant Silos*								
	Asphalt Plant Oil Heater*								
	Asphalt Plant Fugitive Dust*								
	Asphalt Plant Onsite Haul								
	Ready Mix Plant Total								
	Ready Mix Plant*								
	Ready Mix Onsite Haul								
	Recycle Plant Total								
	Recycle Plant*								
	Recycle Engine*								
	Recycle Plant Onsite Haul								
	Aggregates Plant Total	40.1	655.6	570.9	590.7	19.0	609.7	156.7	12.7
	Aggregates Processing*				44.6		44.6	13.0	
	Aggregates Mining Total	40.1	655.1	567.7	72.1	18.8	90.9	38.6	12.7
	Quarrying Fugitive Ems.				72.1		72.1	21.2	
	Offroad Engines	40.1	253.1	465.7		18.8	18.8	17.4	0.7
	Blasting		402.0	102.0					12.0
	Aggregates Drops				2.2		2.2	0.6	
	Aggregates Storage*				54.5		54.5	15.9	
	Aggregates Plant Onsite Haul	0.0	0.5	3.1	417.3	0.2	417.5	88.5	0.0
	Visitors, Diesel Delivery Onsite	0.0	0.0	0.0	3.9	0.0	3.9	0.8	0.0
	Employee Commute	0.7	9.0	0.5		0.0	0.0	0.0	0.0
	Total Permitted	-	-	-	99.1	-	99.1	28.9	-
	Total Permit-Exempt	40.1	253.6	468.9	495.5	19.0	514.5	128.6	0.7
	Total Quarry Site	**40.9**	**664.6**	**571.4**	**594.7**	**19.0**	**613.7**	**157.5**	**12.7**
	Quarry Site Models (g/s)	**0.215**	**3.489**	**3.000**	**3.122**	**0.100**	**3.222**	**0.827**	**0.067**

		Years 0 - 30 (lbs/day)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Off-site	Non-Employee Vehicles (Haul Trucks)	0.1	0.4	3.4	ND	ND	0.1	0.1	0.0
	Between Sites	0.0	0.3	2.0	1.3	0.1	1.4	0.3	0.0
	Employee Commutes	0.7	9.0	0.5	-	0.0	0.0	0.0	0.0
	Electricity	-	-	-	-	-	-	-	-
	Total Off-site	**0.8**	**9.6**	**5.9**	**1.3**	**0.2**	**1.5**	**0.4**	**0.0**

	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Total Permitted	84.4	460.6	65.1	138.2	1.0	139.3	40.6	11.4
Total Permit-Exempt	42.9	274.1	501.8	897.9	20.5	918.5	216.4	0.7
Grand Total	128.1	1,145.8	669.4	1,036.1	21.6	1,057.8	257.1	24.2
Total Both Sites MT/day	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Net Increase Permitted (lbs/day)	**81.3**	**457.5**	**61.9**	**135.1**	**-2.1**	**136.1**	**37.4**	**8.3**
Net Increse Permit Exempt (lbs/day)	**2.1**	**233.3**	**461.0**	**857.1**	**-20.3**	**877.7**	**175.6**	**-40.1**

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.
Shaded Cells represent lack of source or source with de mimimis emissions

Quarry Site

	Years 31 - 100 (lbs/day)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	90.6	561.0	67.5	21.6	1.0	22.5	9.3	11.6
Asphalt Plant Dryer*	27.3	433.3	29.1	8.3	-	8.3	2.4	11.3
Asphalt Plant Silos*	53.7	8.4	-	0.2	-	0.2	0.2	-
Asphalt Plant Oil Heater*	0.3	3.8	1.2	0.3	-	0.3	0.3	0.0
Asphalt Plant Fugitive Dust*				3.1		3.1	0.9	
Asphalt Plant Onsite Haul	9.3	115.4	37.2	9.7	1.0	10.6	5.4	0.2
Ready Mix Plant Total	0.0	0.1	0.3	3.0	0.0	3.0	0.1	0.0
Ready Mix Plant*				2.5		2.5		
Ready Mix Onsite Haul	0.0	0.1	0.3	0.4	0.0	0.5	0.1	0.0
Recycle Plant Total	1.6	14.5	4.4	108.6	0.2	108.8	22.8	0.1
Recycle Plant*				4.3		4.3	0.6	
Recycle Engine*	1.6	14.4	4.1		0.1	0.1	0.1	0.1
Recycle Plant Onsite Haul	0.0	0.1	0.4	104.3	0.1	104.4	22.1	0.0
Aggregates Plant Total	30.3	698.6	187.5	682.6	2.3	684.9	162.7	14.9
Aggregates Processing*				52.0		52.0	15.2	
Aggregates Mining Total	30.2	698.1	185.8	80.5	2.0	82.6	25.7	14.8
Quarrying Fugitive Ems.				80.5		80.5	23.7	
Offroad Engines	30.2	229.1	66.8		2.0	2.0	2.0	0.8
Blasting		469.0	119.0			-		14.0
Aggregates Drops				3.2		3.2	0.9	
Aggregates Storage*				60.0		60.0	17.5	
Aggregates Plant Onsite Haul	0.0	0.5	1.7	486.8	0.3	487.1	103.3	0.0
Visitors, Diesel Delivery Onsite	0.0	0.0	0.0	4.3	0.0	4.3	0.9	0.0
Employee Commute	1.3	24.5	0.2		0.1	0.1	0.0	0.0
Total Permitted	82.8	459.9	34.4	130.8	0.1	130.9	37.3	11.4
Total Permit-Exempt	39.6	345.1	106.4	689.4	3.4	692.7	158.6	1.1
Total Quarry Site	**123.7**	**1,298.5**	**259.9**	**820.1**	**3.6**	**823.8**	**195.9**	**26.5**
Quarry Site Models (g/s)	**0.649**	**6.817**	**1.365**	**4.306**	**0.019**	**4.325**	**1.028**	**0.139**

Off-site

	Years 31 - 100 (lbs/day)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Non-Employee Vehicles (Haul Trucks)	0.1	0.4	3.4	ND	ND	0.1	0.1	0.0
Between Sites	-	-	-	-	-	-	-	-
Employee Commutes	1.3	24.5	0.2	-	0.1	0.1	0.0	0.0
Electricity	-	-	-	-	-	-	-	-
Total Off-site	**1.4**	**24.9**	**3.6**	**-**	**0.1**	**0.2**	**0.1**	**0.0**

	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Total Permitted	82.8	459.9	34.4	130.8	0.1	130.9	37.3	11.4
Total Permit-Exempt	41.0	370.0	110.0	689.4	3.5	692.9	158.7	1.1
Grand Total	125.1	1,323.4	263.6	820.1	3.7	824.0	196.0	26.6
Total Both Sites MT/day	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Net Increase Permitted (lbs/day)	**79.7**	**456.8**	**31.2**	**127.6**	**-3.0**	**127.8**	**34.1**	**8.3**
Net Increse Permit Exempt (lbs/day)	**0.1**	**329.2**	**69.2**	**648.5**	**-37.3**	**652.1**	**117.9**	**-39.7**

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.

Plant Site

	Baseline (lbs/hr)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Plant Dryer	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Asphalt Plant Silos	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Asphalt Plant Oil Heater	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Asphalt Plant Fugitive Dust				0.0		0.0	0.0	
Asphalt Plant Onsite Haul	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ready Mix Plant Total	0.0	0.1	0.5	10.1	0.0	10.1	2.2	0.0
Ready Mix Plant				0.4		0.4	0.1	
Ready Mix Onsite Haul	0.0	0.1	0.5	9.7	0.0	9.7	2.1	0.0
Recycle Plant Total	0.3	1.4	3.4	14.6	0.1	14.7	3.2	0.0
Recycle Plant				0.4		0.4	0.0	
Recycle Engine	0.3	1.3	2.9		0.1	0.1	0.1	0.0
Recycle Plant Onsite Haul	0.0	0.1	0.5	14.2	0.0	14.3	3.0	0.0
Aggregates Plant Total	0.0	0.1	0.5	17.7	0.0	17.7	4.0	0.0
Aggregates Processing				1.3		1.3	0.4	
Aggregates Mining								
Quarrying Fugitive Ems								
Offroad Engines								
Aggregates Drops				0.1		0.1	0.0	
Aggregates Storage				1.3		1.3	0.4	
Aggregates Plant Onsite Haul	0.0	0.1	0.5	14.9	0.0	14.9	3.2	0.0
Visitors, Diesel Delivery Onsite	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.0
Employee Commute								
Total Permitted	**0.3**	**1.3**	**2.9**	**3.4**	**0.1**	**3.5**	**1.0**	**0.0**
Total Permit-Exempt	**0.1**	**0.3**	**1.5**	**39.2**	**0.1**	**39.3**	**8.4**	**0.0**
Total Plant Site	**0.4**	**1.6**	**4.4**	**42.6**	**0.1**	**42.8**	**9.4**	**0.0**
Plant Site Models (g/s)	0.051	0.202	0.555	5.369	0.017	5.387	1.182	0.001

Plant Site

	Years 0 - 30 (lbs/hr)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	12.2	66.4	4.5	15.9	0.0	15.9	3.5	1.7
Asphalt Plant Dryer	4.1	65.0	4.4	1.2	0.0	1.2	0.4	1.7
Asphalt Plant Silos	8.1	1.3	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Plant Oil Heater	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Plant Fugitive Dust				0.5		0.5	0.1	
Asphalt Plant Onsite Haul	0.0	0.0	0.1	14.2	0.0	14.2	3.0	0.0
Ready Mix Plant Total	0.0	0.0	0.1	10.1	0.0	10.1	2.2	0.0
Ready Mix Plant				0.4		0.4	0.1	
Ready Mix Onsite Haul	0.0	0.0	0.1	9.7	0.0	9.7	2.1	0.0
Recycle Plant Total	0.2	1.3	2.7	14.6	0.1	14.7	3.1	0.0
Recycle Plant				0.4		0.4	0.0	
Recycle Engine	0.2	1.2	2.6		0.1	0.1	0.1	0.0
Recycle Plant Onsite Haul	0.0	0.0	0.1	14.2	0.0	14.3	3.0	0.0
Aggregates Plant Total	0.1	0.7	1.3	20.4	0.1	17.1	4.8	0.0
Aggregates Processing				1.8		1.8	0.5	
Aggregates Mining	0.1	0.6	1.2	3.4	0.0	0.0	1.0	0.0
Quarrying Fugitive Ems				3.4			1.0	
Offroad Engines	0.1	0.6	1.2		0.0	0.0	0.0	0.0
Aggregates Drops				0.1		0.1	0.0	
Aggregates Storage				0.2		0.2	0.1	
Aggregates Plant Onsite Haul	0.0	0.0	0.1	14.9	0.0	14.9	3.2	0.0
Visitors, Diesel Delivery Onsite	0.0	0.0	0.0	0.5	0.0	0.5	0.1	0.0
Employee Commute								
Total Permitted	**12.4**	**67.7**	**7.0**	**4.5**	**0.1**	**4.6**	**1.3**	**1.7**
Total Permit-Exempt	**0.1**	**0.7**	**1.6**	**57.1**	**0.1**	**53.8**	**12.4**	**0.0**
Total Plant Site	**12.5**	**68.4**	**8.6**	**61.6**	**0.1**	**58.4**	**13.8**	**1.7**
Plant Site Models (g/s)	1.578	8.615	1.085	7.759	0.019	7.354	1.734	0.216

Plant Site	Years 31 - 100 (lbs/hr)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total								
Asphalt Plant Dryer								
Asphalt Plant Silos								
Asphalt Plant Oil Heater								
Asphalt Plant Fugitive Dust								
Asphalt Plant Onsite Haul								
Ready Mix Plant Total								
Ready Mix Plant								
Ready Mix Onsite Haul								
Recycle Plant Total								
Recycle Plant								
Recycle Engine								
Recycle Plant Onsite Haul								
Aggregates Plant Total								
Aggregates Processing								
Aggregates Mining								
Quarrying Fugitive Ems								
Offroad Engines								
Aggregates Drops								
Aggregates Storage								
Aggregates Plant Onsite Haul								
Visitors, Diesel Delivery Onsite								
Employee Commute								
Total Permitted								
Total Permit-Exempt								
Total Plant Site								
Plant Site Models (g/s)								

		Baseline (lbs/hr)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Quarry Site	Asphalt Plant Total								
	Asphalt Plant Dryer								
	Asphalt Plant Silos								
	Asphalt Plant Oil Heater								
	Asphalt Plant Fugitive Dust								
	Asphalt Plant Onsite Haul								
	Ready Mix Plant Total								
	Ready Mix Plant								
	Ready Mix Onsite Haul								
	Recycle Plant Total								
	Recycle Plant								
	Recycle Engine								
	Recycle Plant Onsite Haul								
	Aggregates Plant Total	1.5	8.4	20.6	54.9	0.8	55.7	13.2	0.0
	Aggregates Processing								
	Aggregates Mining Total	1.5	8.2	19.8	10.0	0.8	10.8	3.6	0.0
	Quarrying Fugitive Ems.				10.0		10.0	2.9	
	Offroad Engines	1.5	8.2	19.8		0.8	0.8	0.7	0.0
	Blasting								
	Aggregates Drops								
	Aggregates Storage								
	Aggregates Plant Onsite Haul	0.1	0.2	0.7	44.9	0.0	44.9	9.5	0.0
	Visitors, Diesel Delivery Onsite Employee Commute								
	Total Permitted	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
	Total Permit-Exempt	**1.5**	**8.4**	**20.6**	**54.9**	**0.8**	**55.7**	**13.2**	**0.0**
	Total Quarry Site	**1.5**	**8.4**	**20.6**	**54.9**	**0.8**	**55.7**	**13.2**	**0.0**
	Quarry Site Models (total g/s)	**0.195**	**1.061**	**2.591**	**6.918**	**0.102**	**7.020**	**1.660**	**0.002**

		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Off-site	Non-Employee Vehicles (Haul Trucks)	Impacts assessed based on change in regional activity (Appendix J).							
	Between Sites	0.1	0.4	1.6	0.2	0.1	0.3	0.1	0.0
	Employee Commutes	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
	Electricity	ND	ND	ND	ND	ND	ND	ND	ND
	Total Off-site	0.2	0.6	1.6	0.2	0.1	0.3	0.1	0.0

	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Total Permitted	0.3	1.3	2.9	3.4	0.1	3.5	1.0	0.0
Total Permit-Exempt	1.9	9.4	23.7	94.3	0.9	95.3	21.6	0.0
Grand Total	2.1	10.6	26.6	97.7	1.0	98.7	22.6	0.0

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.
Shaded Cells represent lack of source or source with de mimimis emissions

Quarry Site	Years 0 - 30 (lbs/hr)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total								
Asphalt Plant Dryer								
Asphalt Plant Silos								
Asphalt Plant Oil Heater								
Asphalt Plant Fugitive Dust								
Asphalt Plant Onsite Haul								
Ready Mix Plant Total								
Ready Mix Plant								
Ready Mix Onsite Haul								
Recycle Plant Total								
Recycle Plant								
Recycle Engine								
Recycle Plant Onsite Haul								
Aggregates Plant Total	1.0	43.3	21.6	69.1	0.5	69.6	17.6	1.1
Aggregates Processing				4.1		4.1	1.2	
Aggregates Mining Total	1.0	43.2	21.3	24.3	0.5	24.8	7.5	1.1
Quarrying Fugitive Ems.				24.3		24.3	7.1	
Offroad Engines	1.0	6.4	12.0		0.5	0.5	0.4	0.0
Blasting		36.9	9.4					1.1
Aggregates Drops				0.2		0.2	0.1	
Aggregates Storage				2.3		2.3	0.7	
Aggregates Plant Onsite Haul	0.0	0.0	0.3	38.3	0.0	38.3	8.1	0.0
Visitors, Diesel Delivery Onsite	0.0	0.0	0.0	0.6	0.0	0.6	0.1	0.0
Employee Commute								
Total Permitted	**0.0**	**0.0**	**0.0**	**6.4**	**0.0**	**6.4**	**1.9**	**0.0**
Total Permit-Exempt	**1.0**	**43.3**	**21.6**	**63.4**	**0.5**	**63.8**	**15.8**	**1.1**
Total Quarry Site	**1.0**	**43.3**	**21.6**	**69.7**	**0.5**	**70.2**	**17.7**	**1.1**
Quarry Site Models (total g/s)	**0.130**	**5.454**	**2.724**	**8.785**	**0.060**	**8.846**	**2.229**	**0.141**

Off-site	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Non-Employee Vehicles (Haul Trucks)	0.0	0.0	0.3	ND	ND	0.0	0.0	0.0
Between Sites	0.0	0.0	0.2	0.1	0.0	0.1	0.0	0.0
Employee Commutes	0.2	2.2	0.1	0.0	0.0	0.0	0.0	0.0
Electricity	ND	ND	ND	ND	ND	ND	ND	ND
Total Off-site	0.2	2.3	0.6	0.1	0.0	0.1	0.0	0.0

	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Total Permitted	12.4	67.7	7.0	10.8	0.1	10.9	3.2	1.7
Total Permit-Exempt	1.3	46.3	23.8	120.6	0.6	117.8	28.3	1.1
Grand Total	13.7	114.0	30.8	131.4	0.6	128.7	31.5	2.8

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.
Shaded Cells represent lack of source or source with de mimimis emissions

Quarry Site	Years 31 - 100 (lbs/hr)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	12.3	67.6	4.8	2.0	0.0	2.1	0.7	1.7
Asphalt Plant Dryer	4.1	65.0	4.4	1.2	0.0	1.2	0.4	1.7
Asphalt Plant Silos	8.1	1.3	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Plant Oil Heater	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Plant Fugitive Dust				0.5		0.5	0.1	
Asphalt Plant Onsite Haul	0.1	1.2	0.4	0.3	0.0	0.3	0.1	0.0
Ready Mix Plant Total	0.0	0.0	0.0	0.4	0.0	0.5	0.1	0.0
Ready Mix Plant				0.4		0.4	0.1	
Ready Mix Onsite Haul	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0
Recycle Plant Total	0.2	2.0	4.5	3.0	0.3	3.3	0.7	0.0
Recycle Plant				0.4		0.4	0.0	
Recycle Engine	0.1	1.2	0.3		0.0	0.0	0.0	0.0
Recycle Plant Onsite Haul	0.1	0.8	4.2	2.7	0.2	2.9	0.7	0.0
Aggregates Plant Total	0.7	41.8	10.9	69.4	0.1	69.5	17.3	1.1
Aggregates Processing				4.1		4.1	1.2	
Aggregates Mining Total	0.7	41.8	10.8	24.3	0.0	24.4	7.1	1.1
Quarrying Fugitive Ems.				24.3		24.3	7.1	
Offroad Engines	0.7	4.9	1.4		0.0	0.0	0.0	0.0
Blasting		36.9	9.4					1.1
Aggregates Drops				0.3		0.3	0.1	
Aggregates Storage				2.5		2.5	0.7	
Aggregates Plant Onsite Haul	0.0	0.0	0.1	38.3	0.0	38.3	8.1	0.0
Visitors, Diesel Delivery Onsite	0.0	0.0	0.0	0.7	0.0	0.7	0.1	0.0
Employee Commute								
Total Permitted	**12.3**	**67.6**	**4.8**	**9.1**	**0.0**	**9.1**	**2.6**	**1.7**
Total Permit-Exempt	**0.9**	**43.8**	**15.5**	**66.5**	**0.3**	**66.9**	**16.3**	**1.1**
Total Quarry Site	**13.2**	**111.4**	**20.3**	**75.6**	**0.3**	**76.0**	**18.9**	**2.8**
Quarry Site Models (total g/s)	**1.659**	**14.036**	**2.557**	**9.526**	**0.044**	**9.570**	**2.386**	**0.359**

Off-site	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Non-Employee Vehicles (Haul Trucks)	0.0	0.0	0.3	ND	ND	0.0	0.0	0.0
Between Sites	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Employee Commutes	0.3	6.1	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	ND	ND	ND	ND	ND	ND	ND	ND
Total Off-site	0.3	6.2	0.3	0.0	0.0	0.0	0.0	0.0

	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Total Permitted	12.3	67.6	4.8	9.1	0.0	9.1	2.6	1.7
Total Permit-Exempt	1.2	49.9	15.9	66.5	0.4	66.9	16.3	1.1
Grand Total	13.5	117.6	20.6	75.6	0.4	76.0	19.0	2.9

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.
Shaded Cells represent lack of source or source with de mimimis emissions

Aggregates Fugitive Mining, Storage, and Sitewide Drop Emissions

Drops from stationary equipment (i.e., conveyors) are included in the plant emissions calculations.

Drop and Mining Emission Factors, Storage Pile Emissions

Material Transfer Point Controlled Emission Factor from SSP1610:

PM10 EF (lb/ton) =	0.000046
PM2.5 EF[2] (lb/ton) =	0.000013

PM2.5 emission factor assumed to be 29.2% of PM10 based on SCAQMD's Updated CEIDARS

Storage Pile Emissions (Controlled Factor from SSP1610 - Aggregate Processing)

lb PM10/acre/day (mitigated) 1.054 lb PM10/acre/day (baseline) 1.054

	Site	Area (acres)	Hourly Emissions (lbs)	Daily Emissions (lbs)	Annual Emissions (lbs)
Basline Storage (Acres)	South	30.0	1.3	31.6	11541.3
Yr 0 - 29 Storage (Acres)	South	5.2	0.2	5.5	2008.2
Yr 30 - 99 Storage (Acres)	South	0.0	0.0	0.0	0.0
Basline Storage (Acres)	North	0	0	0	0
Yr 0 - 29 Storage (Acres)	North	51.7	2.3	54.5	19899.9
Yr 30 - 99 Storage (Acres)	North	56.9	2.5	60.0	21908.1
Control Factor:	80%				

Drop and Mining Emissions - Baseline

		Throughput			PM10 Emissions			PM2.5 Emissions		
Activity	Location	Peak Hour (tph)	Peak Day (tpd)	Peak Annual (tpy)	Peak Hour (lb/hr)	Peak Day (lb/day)	Peak Annual (lb/yr)	Peak Hour (lb/hr)	Peak Day (lb/day)	Peak Annual (lb/yr)
Excavation Process	North Site	475	6,000	1,580,413	10.0	25.2	33,188.7	2.9	7.4	9,691.1
Excavation to Haul Truck	North Site	475	6,000	1,580,413	0.0	0.3	72.7	0.0	0.1	21.2
Haul Truck to Plant Feed/Pile	South Site	475	6,000	1,580,413	0.0	0.3	72.7	0.0	0.1	21.2
Loader to Plant	South Site	1,082	10,048	1,580,413	0.0	0.5	72.7	0.0	0.1	21.2
Loader to Export Trucks	South Site	1,082	10,048	1,986,787	0.0	0.5	91.4	0.0	0.1	26.7

Drop and Mining Emissions - Future Years 0 - 29

		Throughput			PM10 Emissions			PM2.5 Emissions		
Activity	**Location**	**Peak Hour (tph)**	**Peak Day (tpd)**	**Peak Annual (tpy)**	**Peak Hour (lb/hr)**	**Peak Day (lb/day)**	**Peak Annual (lb/yr)**	**Peak Hour (lb/hr)**	**Peak Day (lb/day)**	**Peak Annual (lb/yr)**
Hard Rock Excavation and Blasting	North Site	1,100	12,000	2,725,000	24.3	72.1	12,694.6	7.1	21.1	3,706.8
Hard Rock Excavation to Pile	North Site	1,100	12,000	2,725,000	0.1	0.6	125.4	0.0	0.2	36.6
Pile to Conveyor	North Site	1,100	12,000	2,725,000	0.1	0.6	125.4	0.0	0.2	36.6
Conveyor to Pile	North Site	1,100	12,000	2,725,000	0.1	0.6	125.4	0.0	0.2	36.6
Loader to Export or Waste Trucks	North Site	1,100	12,000	2,725,000	0.1	0.6	125.4	0.0	0.2	36.6
Drop to Pile for Waste Material (10%)	North Site	1,100	12,000	272,500	0.1	0.6	12.5	0.0	0.2	3.7
Alluvial Excavation Process	South Site	800	4,000	275,000	3.4	16.8	1,155.0	1.0	4.9	337.3
Alluvial Excavation to Pile	South Site	800	4,000	275,000	0.0	0.2	12.7	0.0	0.1	3.7
Pile to Conveyor	South Site	800	4,000	275,000	0.0	0.2	12.7	0.0	0.1	3.7
Conveyor to Pile	South Site	800	4,000	275,000	0.0	0.2	12.7	0.0	0.1	3.7
Loader to Export or Waste Trucks	South Site	475	4,000	275,000	0.0	0.2	12.7	0.0	0.1	3.7
Drop to Pile for Waste Material (10%)	South Site	800	4,000	27,500	0.0	0.2	1.3	0.0	0.1	0.4
	Total:				**28.1**	**92.6**	**14,415.4**	**8.2**	**27.0**	**4,209.3**

Drop and Mining Emissions - Future Years 30 - 99

		Throughput			PM10 Emissions			PM2.5 Emissions		
Activity	**Location**	**Peak Hour (tph)**	**Peak Day (tpd)**	**Peak Annual (tpy)**	**Peak Hour (lb/hr)**	**Peak Day (lb/day)**	**Peak Annual (lb/yr)**	**Peak Hour (lb/hr)**	**Peak Day (lb/day)**	**Peak Annual (lb/yr)**
Hard Rock Excavation and Blasting	North Site	1,100	14,000	3,000,000	24.3	80.5	13,849.6	7.1	23.5	4,044.1
Hard Rock Excavation to Pile	North Site	1,100	14,000	3,000,000	0.1	0.6	138.0	0.0	0.2	40.3
Pile to Conveyor	North Site	1,100	14,000	3,000,000	0.1	0.6	138.0	0.0	0.2	40.3
Conveyor to Pile	North Site	1,100	14,000	3,000,000	0.1	0.6	138.0	0.0	0.2	40.3
Loader to Export or Waste Trucks	North Site	1,100	14,000	3,000,000	0.1	0.6	138.0	0.0	0.2	40.3
Drop to Pile for Waste Material (10%)	North Site	1,100	14,000	300,000	0.1	0.6	13.8	0.0	0.2	4.0
	Total:				**24.6**	**83.7**	**14,415.4**	**7.2**	**24.5**	**4,209.3**

Note: San Diego Air Pollution Control District (SDAPCD) Emissions factors are utilized for Drilling/Blasting/Quarry Emissions as SJVAPCD does not have applicable guidance for emissions calculations from these emissions source types

Quarrying Emissions Factors (SDAPCD Calculation Method Q01, Quarry Operations, General)

Standard factor lb pm10/ton quarried :	0.021
Control Factor Applied for Watering:	80%
lb pm10/ton quarried (mitigated)	0.0042

Blasting Emissions Data (SDAPCD Calculation Methods O20-D01, O29-B04)

3,000,000	Ua - annual quarry material blasted (tons)
0.00008	EF - Particulate emissions factor for wet drilling (lbs/ton quarried)
52	N - Annual Number of blasts (DEIR Pg 2-42, 2-43 states 1 - 2 blasts per week, 1 larger blast is more conservative)
19231	A - Average blast area (ft^2/blast)
19	lbs PM10 Emissions per blast
50	Avg borehole depth (ft) (DEIR Pg 2-42, 2-43)
50	Avg Bench Width (DEIR Pg 2-42, 2-43)
57,692	tons material blasted/blast
961,538	ft^3 material blasted/blast
385	Avg Bench Length (ft) (Calculated)
2	days of drilling per blast
16	hours of drilling per blast
1010	Annual PM10 Emissions from blasting (lbs)

Criteria Pollutant Blasting Emissions Factors - (SDAPCD Calculation Method O29-B04 Blasting Operations, Ammonium Nitrate With Fuel Oil, Bumping)

Factor Description	NOx	CO	SOx
District emissions factor, lbs pollutant/ton explosive	17	67	2
Calculated emissions factor in lbs pollutant/ton quarried	0.0085	0.0335	0.001

Note: Calculated emissions factor assumes 1 lb explosive used per ton Quarried

Hard Rock Excavation and Blasting Emissions - Years 0 - 29								
Nox Emissions			**CO Emissions**			**Sox**		
Peak Hour (lb/hr)	**Peak Day (lb/day)**	**Peak Annual (lb/yr)**	**Peak Hour (lb/hr)**	**Peak Day (lb/day)**	**Peak Annual (lb/yr)**	**Peak Hour (lb/hr)**	**Peak Day (lb/day)**	**Peak Annual (lb/yr)**
9.4	102.0	23,162.5	36.9	402.0	91,287.5	1.1	12.0	2,725.0

Hard Rock Excavation and Blasting Emissions - Years 30 - 99								
NOX Emissions			**CO Emissions**			**SOX Emissions**		
Peak Hour (lb/hr)	**Peak Day (lb/day)**	**Peak Annual (lb/yr)**	**Peak Hour (lb/hr)**	**Peak Day (lb/day)**	**Peak Annual (lb/yr)**	**Peak Hour (lb/hr)**	**Peak Day (lb/day)**	**Peak Annual (lb/yr)**
9.4	119.0	25,500.0	36.9	469.0	100,500.0	1.1	14.0	3,000.0

Aggregates Plant - Baseline

Basline Factor PM10 Emissions (lbs/ton)	0.002802
Basline Factor PM2.5 Emissions (lbs/ton)	0.000818
Total PM10 Emissions, lb/hr	1.3
Total PM2.5 Emissions, lb/hr	0.4

	Max (ton/hr)
Processing	475

Emission Point	Location From	Location To	Scale Estimated HP	Scale Max. (tph)	Operation Type Code	Operation Type Description	Emiss. Factor PM10 (lb/ton)	Emiss. Max. (lb/hr)
1	Truck	Hopper	0	475	9	*Truck Unloading Stone*	0.000016	0.01
3	Hopper	Conveyor 1	0	475	7	*Conv. Transfer Pt.*	0.000046	0.02
4	Conveyor 1	Crusher 1	10	475	7	*Conv. Transfer Pt.*	0.000046	0.02
5	Crusher 1	Conveyor 2	215	475	2	*Primary Crushing*	0.000540	0.26
6	Conveyor 2	Screen 1	10	475	7	*Conv. Transfer Pt.*	0.000046	0.02
7	Screen 1	Conveyor 3, 4, 5	60	475	1	*Screening*	0.000740	0.35
8	Conveyor 3	Pile 1	10	119	7	*Conv. Transfer Pt.*	0.000046	0.01
9	Conveyor 4	Crusher 2	10	178	3	*Secondary Crushing*	0.000540	0.10
10	Conveyor 5	Crusher 3	10	178	3	*Secondary Crushing*	0.000540	0.10
11	Crusher 2	Conveyor 6	400	178	7	*Conv. Transfer Pt.*	0.000046	0.01
12	Crusher 3	Conveyor 6	400	178	7	*Conv. Transfer Pt.*	0.000046	0.01
13	Conveyor 6	Screen 2	10	356	1	*Screening*	0.000740	0.26
14	Screen 2	Conveyor 7, 8	60	356	7	*Conv. Transfer Pt.*	0.000046	0.02
15	Conveyor 7	Pile 2	10	119	7	*Conv. Transfer Pt.*	0.000046	0.01
16	Conveyor 8	Crusher 4	10	238	7	*Conv. Transfer Pt.*	0.000046	0.01
17	Crusher 4	Conveyor 9	400	238	4	*Tertiary Crushing*	0.000540	0.13
18	Conveyor 9	Pile 3	10	238	7	*Conv. Transfer Pt.*	0.000046	0.01
		Total HP:	1625					

Plant equipment from San Joaquin Valley Air Pollution Control Distruct Survey Aurvey for the Annual Emission Inventory: 2016 (Appendix C)
Horse power esimtated based on future plant equiptment horse power, which is detailed on the following pages.

Table 3 - Emission Factors (lb/ton)
AP 42 Table 11.19.2-2, 8/04

Operation Type	Description	PM 10 No Control	PM 10 Control	% Reduction
0	Mis. Ops	0.000000	0	
1	Screening	0.008700	0.000740	0.91
2	Primary Crushing	0.002400	0.000540	0.78
3	Secondary Crushing	0.002400	0.000540	0.78
4	Tertiary Crushing	0.002400	0.000540	0.78
5	Fines Crushing	0.015000	0.001200	0.92
6	Fines Screening	0.072000	0.002200	0.97
7	Conv. Transfer Pt.	0.001100	0.000046	0.96
8	Wet Drilling	0.000080		
9	Truck Unloading Stone	0.000016		

Emission Factors from AP-42 Table 11.19.2-2
PM2.5 emission factor assumed to be 29.2% of PM10 based on SCAQMD's Updated CEIDARS
Wet processing not included as emissions are zero

Aggregates Plant - Future Year 0 - 30

Future Factor PM10 Emissions (lbs/ton)	0.0037
Future Factor PM2.5 Emissions (lbs/ton)	0.0011
Total PM10 Emissions, lb/hr	4.1
Total PM2.5 Emissions, lb/hr	1.2

	Max (ton/hr)
Processing	1100

Emission Point	Location From	Location To	Scale Max. (tph)	Operation Type Code	Operation Type Description	Emiss.Factor PM10 (lb/ton)	Emiss. Max. (lb/hr)
1	Truck	Vibrating Grizzly Feed 1	550	9	*Truck Unloading Stone*	0.000016	0.01
2	Truck	Vibrating Grizzly Feed 2	550	9	*Truck Unloading Stone*	0.000016	0.01
3	Vibrating Grizzly Feed 1	Jaw Crusher 1	451	7	*Conv. Transfer Pt.*	0.000046	0.02
4	Vibrating Grizzly Feed 2	Jaw Crusher 2	451	7	*Conv. Transfer Pt.*	0.000046	0.02
5	Vibrating Grizzly Feed 1	Conveyor 1	99	7	*Conv. Transfer Pt.*	0.000046	0.00
6	Vibrating Grizzly Feed 2	Conveyor 2	99	7	*Conv. Transfer Pt.*	0.000046	0.00
7	Jaw Crusher 1	Conveyor 1	451	2	*Primary Crushing*	0.000540	0.24
8	Jaw Crusher 2	Conveyor 2	451	2	*Primary Crushing*	0.000540	0.24
9	Conveyor 1	Conveyor 3	550	7	*Conv. Transfer Pt.*	0.000046	0.03
10	Conveyor 2	Conveyor 3	550	7	*Conv. Transfer Pt.*	0.000046	0.03
11	Conveyor 3	Conveyor 4	1100	7	*Conv. Transfer Pt.*	0.000046	0.05
12	Conveyor 4	Primary Screen	1100	7	*Conv. Transfer Pt.*	0.000046	0.05
13	Primary Screen	Conveyors 5a, 6a, 7a	231	1	*Screening*	0.000740	0.17
14	Conveyor 5a	Conveyor 5b	231	7	*Conv. Transfer Pt.*	0.000046	0.01
15	Conveyor 5b	Conveyor 5c	231	7	*Conv. Transfer Pt.*	0.000046	0.01
16	Conveyor 5c	Pile 1	231	7	*Conv. Transfer Pt.*	0.000046	0.01
17	Conveyor 6a	Conveyor 6b	107	7	*Conv. Transfer Pt.*	0.000046	0.00
18	Conveyor 6b	Conveyor 6c	653	7	*Conv. Transfer Pt.*	0.000046	0.03
19	Conveyor 7a	Conveyor 7b	762	7	*Conv. Transfer Pt.*	0.000046	0.04
20	Conveyor 6c	Cone Crusher 1	653	7	*Conv. Transfer Pt.*	0.000046	0.03
21	Conveyor 7b	Cone Crusher 2	762	7	*Conv. Transfer Pt.*	0.000046	0.04
22	Cone Crusher 1	Conveyor 8	653	3	*Secondary Crushing*	0.000540	0.35
23	Cone Crusher 2	Conveyor 8	762	3	*Secondary Crushing*	0.000540	0.41
24	Conveyor 8	Conveyor 9	1414	7	*Conv. Transfer Pt.*	0.000046	0.07
25	Conveyor 9	Secondary Screen A	707	1	*Screening*	0.000740	0.52
26	Conveyor 9	Secondary Screen B	707	1	*Screening*	0.000740	0.52
27	Secondary Screen A	Conveyors 10, 11	707	7	*Conv. Transfer Pt.*	0.000046	0.03
28	Secondary Screen B	Conveyors 10, 12	707	7	*Conv. Transfer Pt.*	0.000046	0.03
29	Conveyor 10	Conveyor 6b	546	7	*Conv. Transfer Pt.*	0.000046	0.03
30	Conveyor 11	Conveyor 13	429	7	*Conv. Transfer Pt.*	0.000046	0.02
31	Conveyor 12	Conveyor 13	429	7	*Conv. Transfer Pt.*	0.000046	0.02
32	Conveyor 13	Conveyor 14	858	7	*Conv. Transfer Pt.*	0.000046	0.04
33	Conveyor 14	Tertiary Screen 1	429	7	*Conv. Transfer Pt.*	0.000046	0.02
34	Conveyor 14	Tertiary Screen 2	429	7	*Conv. Transfer Pt.*	0.000046	0.02
35	Tertiary Screen 1	Conveyors 15a, 16a, 17a, 18a, 19	429	1	*Screening*	0.000740	0.32
36	Tertiary Screen 2	Pump, Conveyors 16a, 17a, 18a, 19	429	1	*Screening*	0.000740	0.32
37	Conveyor 15a	Conveyor 15b	98	7	*Conv. Transfer Pt.*	0.000046	0.00
38	Conveyor 15b	Conveyor 15c	98	7	*Conv. Transfer Pt.*	0.000046	0.00
39	Conveyor 15c	Pile 2	98	7	*Conv. Transfer Pt.*	0.000046	0.00
40	Conveyor 16a	Conveyor 16b	311	7	*Conv. Transfer Pt.*	0.000046	0.01
41	Conveyor 16b	Pile 3	311	7	*Conv. Transfer Pt.*	0.000046	0.01
42	Conveyor 17a	Conveyor 17b	54	7	*Conv. Transfer Pt.*	0.000046	0.00
43	Conveyor 17b	Pile 4	54	7	*Conv. Transfer Pt.*	0.000046	0.00
44	Conveyor 18a	Conveyor 18b	61	7	*Conv. Transfer Pt.*	0.000046	0.00
45	Conveyor 18b	Pile 5	61	7	*Conv. Transfer Pt.*	0.000046	0.00
46	Conveyor 19	Conveyor 20	204	7	*Conv. Transfer Pt.*	0.000046	0.01
47	Conveyor 20	VSI Crusher	448	7	*Conv. Transfer Pt.*	0.000046	0.02
48	VIS Crusher	Conveyor 21	448	4	*Tertiary Crushing*	0.000540	0.24

Plant equipment based on diagrams and equiptment list provided by Cemex and provided on following pages.

Equiptment Names above do not match equiptment list in an effort to provide unique identification for each piece of equiptment, as well as a linear progression of plant equiptment. Horse-power is included in following diagrams.

Aggregates Plant - Future Year 30 - 100

Future Factor PM10 Emissions (lbs/ton)	0.0037
Future Factor PM2.5 Emissions (lbs/ton)	0.0011
Total PM10 Emissions, lb/hr	4.1
Total PM2.5 Emissions, lb/hr	1.2

	Max (ton/hr)
Processing	1100

Emission Point	Location From	Location To	Scale Max. (tph)	Operation Type Code	Operation Type Description	Emiss.Factor PM10 (lb/ton)	Emiss. Max. (lb/hr)
1	Truck	Vibrating Grizzly Feed 1	550	9	*Truck Unloading Stone*	0.000016	0.01
2	Truck	Vibrating Grizzly Feed 2	550	9	*Truck Unloading Stone*	0.000016	0.01
3	Vibrating Grizzly Feed 1	Jaw Crusher 1	451	7	*Conv. Transfer Pt.*	0.000046	0.02
4	Vibrating Grizzly Feed 2	Jaw Crusher 2	451	7	*Conv. Transfer Pt.*	0.000046	0.02
5	Vibrating Grizzly Feed 1	Conveyor 1	99	7	*Conv. Transfer Pt.*	0.000046	0.00
6	Vibrating Grizzly Feed 2	Conveyor 2	99	7	*Conv. Transfer Pt.*	0.000046	0.00
7	Jaw Crusher 1	Conveyor 1	451	2	*Primary Crushing*	0.000540	0.24
8	Jaw Crusher 2	Conveyor 2	451	2	*Primary Crushing*	0.000540	0.24
9	Conveyor 1	Conveyor 3	550	7	*Conv. Transfer Pt.*	0.000046	0.03
10	Conveyor 2	Conveyor 3	550	7	*Conv. Transfer Pt.*	0.000046	0.03
11	Conveyor 3	Conveyor 4	1100	7	*Conv. Transfer Pt.*	0.000046	0.05
12	Conveyor 4	Primary Screen	1100	7	*Conv. Transfer Pt.*	0.000046	0.05
13	Primary Screen	Conveyors 5a, 6a, 7a	231	1	*Screening*	0.000740	0.17
14	Conveyor 5a	Conveyor 5b	231	7	*Conv. Transfer Pt.*	0.000046	0.01
15	Conveyor 5b	Conveyor 5c	231	7	*Conv. Transfer Pt.*	0.000046	0.01
16	Conveyor 5c	Pile 1	231	7	*Conv. Transfer Pt.*	0.000046	0.01
17	Conveyor 6a	Conveyor 6b	107	7	*Conv. Transfer Pt.*	0.000046	0.00
18	Conveyor 6b	Conveyor 6c	653	7	*Conv. Transfer Pt.*	0.000046	0.03
19	Conveyor 7a	Conveyor 7b	762	7	*Conv. Transfer Pt.*	0.000046	0.04
20	Conveyor 6c	Cone Crusher 1	653	7	*Conv. Transfer Pt.*	0.000046	0.03
21	Conveyor 7b	Cone Crusher 2	762	7	*Conv. Transfer Pt.*	0.000046	0.04
22	Cone Crusher 1	Conveyor 8	653	3	*Secondary Crushing*	0.000540	0.35
23	Cone Crusher 2	Conveyor 8	762	3	*Secondary Crushing*	0.000540	0.41
24	Conveyor 8	Conveyor 9	1414	7	*Conv. Transfer Pt.*	0.000046	0.07
25	Conveyor 9	Secondary Screen A	707	1	*Screening*	0.000740	0.52
26	Conveyor 9	Secondary Screen B	707	1	*Screening*	0.000740	0.52
27	Secondary Screen A	Conveyors 10, 11	707	7	*Conv. Transfer Pt.*	0.000046	0.03
28	Secondary Screen B	Conveyors 10, 12	707	7	*Conv. Transfer Pt.*	0.000046	0.03
29	Conveyor 10	Conveyor 6b	546	7	*Conv. Transfer Pt.*	0.000046	0.03
30	Conveyor 11	Conveyor 13	429	7	*Conv. Transfer Pt.*	0.000046	0.02
31	Conveyor 12	Conveyor 13	429	7	*Conv. Transfer Pt.*	0.000046	0.02
32	Conveyor 13	Conveyor 14	858	7	*Conv. Transfer Pt.*	0.000046	0.04
33	Conveyor 14	Tertiary Screen 1	429	7	*Conv. Transfer Pt.*	0.000046	0.02
34	Conveyor 14	Tertiary Screen 2	429	7	*Conv. Transfer Pt.*	0.000046	0.02
35	Tertiary Screen 1	Conveyors 15a, 16a, 17a, 18a, 19	429	1	*Screening*	0.000740	0.32
36	Tertiary Screen 2	Pump, Conveyors 16a, 17a, 18a, 19	429	1	*Screening*	0.000740	0.32
37	Conveyor 15a	Conveyor 15b	98	7	*Conv. Transfer Pt.*	0.000046	0.00
38	Conveyor 15b	Conveyor 15c	98	7	*Conv. Transfer Pt.*	0.000046	0.00
39	Conveyor 15c	Pile 2	98	7	*Conv. Transfer Pt.*	0.000046	0.00
40	Conveyor 16a	Conveyor 16b	311	7	*Conv. Transfer Pt.*	0.000046	0.01
41	Conveyor 16b	Pile 3	311	7	*Conv. Transfer Pt.*	0.000046	0.01
42	Conveyor 17a	Conveyor 17b	54	7	*Conv. Transfer Pt.*	0.000046	0.00
43	Conveyor 17b	Pile 4	54	7	*Conv. Transfer Pt.*	0.000046	0.00
44	Conveyor 18a	Conveyor 18b	61	7	*Conv. Transfer Pt.*	0.000046	0.00
45	Conveyor 18b	Pile 5	61	7	*Conv. Transfer Pt.*	0.000046	0.00
46	Conveyor 19	Conveyor 20	204	7	*Conv. Transfer Pt.*	0.000046	0.01
47	Conveyor 20	VSI Crusher	448	7	*Conv. Transfer Pt.*	0.000046	0.02
48	VIS Crusher	Conveyor 21	448	4	*Tertiary Crushing*	0.000540	0.24

Plant equipment based on diagrams and equiptment list provided by Cemex and provided on following pages.
Equiptment Names above do not match equiptment list in an effort to provide unique identification for each piece of equiptment, as well as a linear progression of plant equiptment. Horse-power is included in following diagrams.

Asphalt Plant Material Handling Equipment Emissions

Description	% of Throughput	Hourly Throughput (tph)	Daily Throughput (tpd)	Annual Throughput (tpy)	PM10 Emission Factor (lb/ton)	Baseline PM10 Emissions (lb)			Basline PM2.5 Emissions (lb)		
						Hour	Day	Year	Hour	Day	Year
New aggregate dump to bins	100%	-	-	-	0.000046	-	-	-	-	-	-
Bin to conveyor	100%	-	-	-	0.000046	-	-	-	-	-	-
Conveyor to screen	100%	-	-	-	0.000046	-	-	-	-	-	-
Screen	100%	-	-	-	0.000740	-	-	-	-	-	-
Conveyor to Dryer	100%	-	-	-	0.000046	-	-	-	-	-	-
				Total Emissions		-	-	-	-	-	-

Description	% of Throughput	Hourly Throughput (tph)	Daily Throughput (tpd)	Annual Throughput (tpy)	PM10 Emission Factor (lb/ton)	Yr 0 - 30 PM10 Emissions (lb)			Yr 0 - 30 PM2.5 Emissions (lb)		
						Hour	Day	Year	Hour	Day	Year
New aggregate dump to bins	100%	500.0	3,333.0	500,000.0	0.000046	0.0	0.2	23.0	0.0	0.0	6.7
Bin to conveyor	100%	500.0	3,333.0	500,000.0	0.000046	0.0	0.2	23.0	0.0	0.0	6.7
Conveyor to screen	100%	500.0	3,333.0	500,000.0	0.000046	0.0	0.2	23.0	0.0	0.0	6.7
Screen	100%	500.0	3,333.0	500,000.0	0.000740	0.4	2.5	370.0	0.1	0.7	108.0
Conveyor to Dryer	100%	500.0	3,333.0	500,000.0	0.000046	0.0	0.2	23.0	0.0	0.0	6.7
				Total Emissions		**0.5**	**3.1**	**462.0**	**0.1**	**0.9**	**134.9**

Description	% of Throughput	Hourly Throughput (tph)	Daily Throughput (tpd)	Annual Throughput (tpy)	PM10 Emission Factor (lb/ton)	Yr 31 - 100 PM10 Emissions (lb)			Yr 31 - 100 PM2.5 Emissions (lb)		
						Hour	Day	Year	Hour	Day	Year
New aggregate dump to bins	100%	500.0	3,333.0	500,000.0	0.000046	0.0	0.2	23.0	0.0	0.0	6.7
Bin to conveyor	100%	500.0	3,333.0	500,000.0	0.000046	0.0	0.2	23.0	0.0	0.0	6.7
Conveyor to screen	100%	500.0	3,333.0	500,000.0	0.000046	0.0	0.2	23.0	0.0	0.0	6.7
Screen	100%	500.0	3,333.0	500,000.0	0.000740	0.4	2.5	370.0	0.1	0.7	108.0
Conveyor to Dryer	100%	500.0	3,333.0	500,000.0	0.000046	0.0	0.2	23.0	0.0	0.0	6.7
				Total Emissions		**0.5**	**3.1**	**462.0**	**0.1**	**0.9**	**134.9**

Emissions Factors from San Joaquin Valley Unified Air Pollution Control District SSP1610 Aggregate Permit Processing

[1] PM2.5 emission factor assumed to be 29.2% of PM10 for material drops based on SCAQMD's *Updated CEIDARS Table with PM2.5 Fractions for mineral products - loading*

Ready Mix Concrete Plant Emission Calculations

	Baseline		
	Cubic Yards	**PM10 (lb)**	**PM2.5 (lb)**
Peak Hour	190.0	0.4	0.1
Peak Day	1266.4	2.5	0.7
Peak Year	189550.0	381.1	111.3

Equipment / Emission Unit Description	**Throughput (tpy)**	**Ems. Factor**	**EF Unit**	**PM_{10} Ems. (tpy)**	**$PM_{2.5}$ Ems.[1] (tpy)**	**Emission Source Comments**
Conveyor transfer to aggregate storage bin	311,430.65	0.000046	lb PM10 / ton aggregate	0.01	0.00	AP42, table 11.19.2-2, 8/04, conveyor transfer point. AP42 emission factor of 0.000046 lb/ton. Aggregate kept moist.
Discharge from aggregate storage bin to belt conveyor	311,430.65	0.000046	lb PM10 / ton aggregate	0.01	0.00	
Pneumatic transfer of cement to controlled silo	46,534.53	0.000340	lb PM10 / ton cement	0.01	0.00	AP42 Table 11.12-2 (June 2006). Cement unloading to elevated storage silo controlled by fabric filter.
Pneumatic transfer of cement supplements to controlled silo	6,918.58	0.004900	lb PM10 / ton cement supplement	0.02	0.00	AP42 Table 11.12-2 (June 2006). Cement supplement unloading to elevated storage silo controlled by fabric filter.
Cement / flyash conveyed with cement batcher screw	46,534.53	NA	NA	-	-	Closed system
Weigh hopper loading (aggregate and cement / flyash)	311,430.65	0.000028	lb PM10 / ton aggregate	0.00	0.00	AP42 Table 11.12-2 (June 2006). Weigh hopper loading, with 99% control from fabric filter.
Mixer	53,453.10	0.005500	lb PM10 / ton cement and cement supplement	0.15	0.04	AP42 Table 11.12-2 (June 2006). Controlled central mixing.
Load out	381,374.60	NA	NA	-	-	Material is wet
			Annual Emissions (tpy)	**0.19**	**0.06**	
			Plant Emissions Factors (lb/cy)	**0.00**	**0.00**	

Ready Mix Concrete Plant Emission Calculations

	Yr 0 - 30		
	Cubic Yards	**PM10 (lb)**	**PM2.5 (lb)**
Peak Hour	190.0	0.4	0.1
Peak Day	1266.4	2.5	0.7
Peak Year	300000.0	603.1	176.1

Equipment / Emission Unit Description	**Throughput (tpy)**	**Emission Factor**	**EF Unit**	**PM_{10} Ems. (tpy)**	**$PM_{2.5}$ Ems.[1] (tpy)**	**Emission Source Comments**
Conveyor transfer to aggregate storage bin	492,900.00	0.000046	lb PM10 / ton aggregate	0.01	0.00	AP42, table 11.19.2-2, 8/04, conveyor transfer point. AP42 emission factor of 0.000046 lb/ton. Aggregate kept moist.
Discharge from aggregate storage bin to belt conveyor	492,900.00	0.000046	lb PM10 / ton aggregate	0.01	0.00	
Pneumatic transfer of cement to controlled silo	73,650.00	0.000340	lb PM10 / ton cement	0.01	0.00	AP42 Table 11.12-2 (June 2006). Cement unloading to elevated storage silo controlled by fabric filter.
Pneumatic transfer of cement supplements to controlled silo	10,950.00	0.004900	lb PM10 / ton cement supplement	0.03	0.01	AP42 Table 11.12-2 (June 2006). Cement supplement unloading to elevated storage silo controlled by fabric filter.
Cement / flyash conveyed with cement batcher screw	73,650.00	NA	NA	-	-	Closed system
Weigh hopper loading (aggregate and cement / flyash)	492,900.00	0.000028	lb PM10 / ton aggregate	0.01	0.00	AP42 Table 11.12-2 (June 2006). Weigh hopper loading, with 99% control from fabric filter.
Mixer	84,600.00	0.005500	lb PM10 / ton cement and cement supplement	0.23	0.07	AP42 Table 11.12-2 (June 2006). Controlled central mixing.
Load out	603,600.00	NA	NA	-	-	Material is wet
			Annual Emissions (tpy)	**0.30**	**0.09**	
			Plant Emissions Factors (lb/cy)	**0.00**	**0.00**	

Ready Mix Concrete Plant Emission Calculations

	Yr 31 - 100		
	Cubic Yards	**PM10 (lb)**	**PM2.5 (lb)**
Peak Hour	190.0	0.4	0.1
Peak Day	1266.4	2.5	0.7
Peak Year	300000.0	603.1	176.1

Equipment / Emission Unit Description	**Throughput (tpy)**	**Emission Factor**	**EF Unit**	**PM_{10} Ems. (tpy)**	**$PM_{2.5}$ Ems.[1] (tpy)**	**Emission Source Comments**
Conveyor transfer to aggregate storage bin	492,900.0	0.000046	lb PM10 / ton aggregate	0.01	0.00	AP42, table 11.19.2-2, 8/04, conveyor transfer point. AP42 emission factor of 0.000046 lb/ton. Aggregate kept moist.
Discharge from aggregate storage bin to belt conveyor	492,900.0	0.000046	lb PM10 / ton aggregate	0.01	0.00	
Pneumatic transfer of cement to controlled silo	73,650.0	0.000340	lb PM10 / ton cement	0.01	0.00	AP42 Table 11.12-2 (June 2006). Cement unloading to elevated storage silo controlled by fabric filter.
Pneumatic transfer of cement supplements to controlled silo	10,950.0	0.004900	lb PM10 / ton cement supplement	0.03	0.01	AP42 Table 11.12-2 (June 2006). Cement supplement unloading to elevated storage silo controlled by fabric filter.
Cement / flyash conveyed with cement batcher screw	73,650.0	NA	NA	-	-	Closed system
Weigh hopper loading (aggregate and cement / flyash)	492,900.0	0.000028	lb PM10 / ton aggregate	0.01	0.00	AP42 Table 11.12-2 (June 2006). Weigh hopper loading, with 99% control from fabric filter.
Mixer	84,600.0	0.005500	lb PM10 / ton cement and cement supplement	0.23	0.07	AP42 Table 11.12-2 (June 2006). Controlled central mixing.
Load out	603,600.0	NA	NA	-	-	Material is wet
			Annual Emissions (tpy)	**0.30**	**0.09**	
			Plant Emissions Factors (lb/cy)	**0.00**	**0.00**	

Throughput Information

Annual Production =	189550.0	yd^3
Density of Concrete =	2.0	$tons/yd^3$
Annual Concrete Production =	381374.6	tons
Amount of Sand and Gravel =	311430.7	tons
Amount of Cement =	46534.5	tons
Amount of Cement Supplements =	6918.6	tons

AP-42 Table 11.12-2, Footnote a.

1865	lb gravel	46%
1421	lb sand	35%
491	lb cement	12%
73	lb supplement	2%
174	lb water	4%
4024	lb concrete	100%

[1] PM2.5 emission factor assumed to be 29.2% of PM10 for material drops based on SCAQMD's Updated CEIDARS Table with PM2.5 Fractions for mineral products - loading

GHG/Electrical Calculation

Plant kW	612.8
Op-Hours in Peak Year	997.6
kW-hrs in peak year	611348.6
MT CO2e in Peak Year	261.0

Plant kW draw based on assumptions in G.6b
0.000427 MT CO2e per kWh based on CARB Green House Inventory Documentation
https://bit.ly/2SE6XKF

Throughput Information

Annual Production =	300000.0	yd^3
Density of Concrete =	2.0	$tons/yd^3$
Annual Concrete Production =	603600.0	tons
Amount of Sand and Gravel =	492900.0	tons
Amount of Cement =	73650.0	tons
Amount of Cement Supplements =	10950.0	tons

AP-42 Table 11.12-2, Footnote a.

1865	lb gravel	46%
1421	lb sand	35%
491	lb cement	12%
73	lb supplement	2%
174	lb water	4%
4024	lb concrete	100%

[1] PM2.5 emission factor assumed to be 29.2% of PM10 for material drops based on SCAQMD's Updated CEIDARS Table with PM2.5 Fractions for mineral products - loading

GHG/Electrical Calculation

Plant kW	612.8
Op-Hours in Peak Year	1578.9
kW-hrs in peak year	967578.9
MT CO2e in Peak Year	413.2

Plant kW draw based on assumptions in G.6b
0.000427 MT CO2e per kWh based on CARB Green House Inventory Documentation
https://bit.ly/2SE6XKF

Throughput Information

Annual Production =	300000.0	yd^3
Density of Concrete =	2.0	$tons/yd^3$
Annual Concrete Production =	603600.0	tons
Amount of Sand and Gravel =	492900.0	tons
Amount of Cement =	73650.0	tons
Amount of Cement Supplements =	10950.0	tons

AP-42 Table 11.12-2, Footnote a.

1865	lb gravel	46%
1421	lb sand	35%
491	lb cement	12%
73	lb supplement	2%
174	lb water	4%
4024	lb concrete	100%

[1] PM2.5 emission factor assumed to be 29.2% of PM10 for material drops based on SCAQMD's Updated CEIDARS Table with PM2.5 Fractions for mineral products - loading

GHG/Electrical Calculation

Plant kW	612.8
Op-Hours in Peak Year	1578.9
kW-hrs in peak year	967578.9
MT CO2e in Peak Year	413.2

Plant kW draw based on assumptions in G.6b
0.000427 MT CO2e per kWh based on CARB Green House Inventory Documentation
https://bit.ly/2SE6XKF

VEHICLE TYPE	VEHICLE MODEL	MODEL YEAR	ENGINE MAX POWER (HORSEPOWER)
Crawler Tractors	D8	1969	235
Crawler Tractors	D9R	2004	306
Excavators	EX-750	1997	434
Excavators	2219	1977	101
Tractors/Loaders/Backhoes	980C	1989	270
Graders	12G	1979	135
Off-Highway Trucks	100	1969	335
Off-Highway Trucks	735	2004	366
Off-Highway Trucks	100	1970	335
Tractors/Loaders/Backhoes	988F	2000	475
Tractors/Loaders/Backhoes	988G	2004	475
Cranes	RT 60S	1977	225
Forklifts	G83P-050-SBS-086G	1971	145
Aerial Lifts	AMZ-66XT	1990	140
Excavators	850D	2008	532.4
	*Assumed to be 120 HP for CALEEMOD becasuse CALEEMod doesn't have Aerial Lift factors in the 140 - 250 hp range for		

	HorsePower	Estimated Fuel Used (gal/yr)*	Break Specific Fuel Consumption
Fleet Average, Off-Highway Trucks, Loaders, and Dozers	361	175506	0.367
Fleet Average, Other Equipment	245	87753	0.367

*Fuel used is assumed to have been split 66% to Trucks loaders and dozers, and 33% to other engines.

	Fuel Used (lb/yr)	**Hp-Hr/yr**
Off-Highway Trucks, Loaders, and Dozers	1237319	3371441
Other Equipment	618660	1685721
Sum 2016		

	CalEEMod Emission Factors (g/hphr) 2012 Calendar Year (Baseline)								
VEHICLE TYPE	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Crawler Tractors	0.5	0.5	1.9	6.4	0.0	0.3	0.2	523.5	0.2
Crawler Tractors	0.5	0.4	3.1	5.9	0.0	0.2	0.2	526.0	0.2
Excavators	0.3	0.3	1.4	4.1	0.0	0.1	0.1	520.0	0.2
Excavators	0.7	0.6	3.7	5.6	0.0	0.4	0.4	516.1	0.2
Tractors/Loaders/Backhoes	0.4	0.3	2.0	5.0	0.0	0.2	0.2	523.6	0.2
Graders	1.0	0.9	3.9	8.9	0.0	0.5	0.5	533.9	0.2
Off-Highway Trucks	0.5	0.4	2.3	5.4	0.0	0.2	0.2	525.9	0.2
Off-Highway Trucks	0.5	0.4	2.3	5.4	0.0	0.2	0.2	525.9	0.2
Off-Highway Trucks	0.5	0.4	2.3	5.4	0.0	0.2	0.2	525.9	0.2
Tractors/Loaders/Backhoes	0.4	0.3	2.0	5.0	0.0	0.2	0.2	523.6	0.2
Tractors/Loaders/Backhoes	0.4	0.3	2.0	5.0	0.0	0.2	0.2	523.6	0.2
Cranes	0.8	0.7	2.8	8.3	0.0	0.4	0.4	523.0	0.2
Forklifts	0.8	0.6	3.6	7.1	0.0	0.4	0.4	521.9	0.2
Aerial Lifts	0.3	0.3	3.3	4.4	0.0	0.3	0.2	521.9	0.2
Excavators	0.3	0.3	1.5	4.4	0.0	0.1	0.1	517.8	0.2

	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Fleet Average, Off-Highway Trucks, Loaders, and Dozers	0.5	0.4	2.3	5.5	0.0	0.2	0.2	524.9	0.2
Fleet Average, Other Equipment	0.6	0.5	2.8	6.0	0.0	0.3	0.3	522.3	0.2

*Fuel used is assumed to have been split 66% to
Trucks loaders and dozers, and 33% to other engines.

	TOG g/yr	ROG g/yr	CO g/yr	NOX g/yr	SO2 g/yr	PM10 g/yr	PM2.5 g/yr	CO2 g/yr	CH4 g/yr
Off-Highway Trucks, Loaders, and Dozers	1,643,721.7	1,381,327.7	7,654,207.7	18,493,358.4	16,857.2	694,998.6	638,647.3	1,769,806,229.4	517,757.1
Other Equipment	983,794.6	826,846.0	4,693,213.0	10,060,090.6	8,428.6	504,241.2	463,783.9	880,428,071.0	257,493.8
Sum 2016	2,627,516.4	2,208,173.8	12,347,420.7	28,553,449.0	25,285.8	1,199,239.8	1,102,431.3	2,650,234,300.4	775,250.9

	CalEEMod Emission Factors (g/hphr) 2018 Calendar Year (Year 0 - 30)								
VEHICLE TYPE	TOG	ROG	CO	NOX	SO2	PM10*	PM2.5	CO2	CH4
Crawler Tractors	0.5	0.4	1.7	5.3	0.0	0.2	0.2	491.6	0.2
Crawler Tractors	0.4	0.3	2.4	4.4	0.0	0.2	0.2	493.5	0.2
Excavators	0.2	0.2	1.1	2.1	0.0	0.1	0.1	489.1	0.2
Excavators	0.4	0.4	3.6	3.8	0.0	0.3	0.2	486.1	0.2
Tractors/Loaders/Backhoes	0.3	0.2	1.4	2.7	0.0	0.1	0.1	486.3	0.2
Graders	0.8	0.7	3.7	6.6	0.0	0.4	0.3	497.4	0.2
Off-Highway Trucks	0.3	0.3	1.6	3.1	0.0	0.1	0.1	493.5	0.2
Off-Highway Trucks	0.3	0.3	1.6	3.1	0.0	0.1	0.1	493.5	0.2
Off-Highway Trucks	0.3	0.3	1.6	3.1	0.0	0.1	0.1	493.5	0.2
Tractors/Loaders/Backhoes	0.3	0.2	1.4	2.7	0.0	0.1	0.1	486.3	0.2
Tractors/Loaders/Backhoes	0.3	0.2	1.4	2.7	0.0	0.1	0.1	486.3	0.2
Cranes	0.6	0.5	2.1	5.8	0.0	0.3	0.2	491.4	0.2
Forklifts	0.5	0.4	3.3	4.4	0.0	0.2	0.2	490.5	0.2
Aerial Lifts	0.1	0.1	3.2	2.1	0.0	0.1	0.1	490.5	0.2
Excavators	0.2	0.2	1.2	2.3	0.0	0.1	0.1	487.7	0.2
	*PM10 Emissions assume Tier 4i and are based on CalEEMod Appendix D Table 3.5								

	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Fleet Average, Off-Highway Trucks, Loaders, and Dozers	0.3	0.3	1.7	3.5	0.0	0.1	0.1	491.2	0.2
Fleet Average, Other Equipment	0.4	0.3	2.5	3.7	0.0	0.2	0.2	489.9	0.2

*Fuel used is assumed to have been split 66% to
Trucks loaders and dozers, and 33% to other engines.

Effect of 2024 amendments to off-road engine regulation which require offroad fleets to burn only renewable diesel (RD) as discussed in Appendix L. 50%

	TOG g/yr	ROG g/yr	CO g/yr	NOX g/yr	SO2 g/yr	PM10 g/yr	PM2.5 g/yr	CO2 g/yr	CH4 g/yr
Off-Highway Trucks, Loaders, and Dozers	1,173,749.1	985,905.8	5,589,426.2	11,689,375.2	16,857.2	429,618.0	395,903.6	827,983,140.3	257,915.3
Other Equipment	663,868.6	557,762.9	4,154,884.4	6,241,301.0	8,428.6	293,315.4	272,243.9	412,878,198.3	128,536.2
Sum 2016	1,837,617.7	1,543,668.7	9,744,310.6	17,930,676.2	25,285.8	722,933.4	668,147.5	1,240,861,338.5	386,451.5

	CalEEMod Emission Factors (g/hphr) 2048 Calendar Year (Year 31 - 100)								
VEHICLE TYPE	TOG	ROG	CO	NOX	SO2	PM10*	PM2.5	CO2	CH4
Crawler Tractors	3.2	0.2	1.2	0.5	0.0	0.0	0.0	568.3	0.0
Crawler Tractors	5.0	0.2	1.1	0.5	0.0	0.0	0.0	568.3	0.0
Excavators	7.3	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
Excavators	3.4	0.3	3.8	1.5	0.0	0.0	0.0	568.3	0.0
Tractors/Loaders/Backhoes	9.8	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
Graders	2.0	0.2	3.3	0.4	0.0	0.0	0.0	568.3	0.0
Off-Highway Trucks	1.4	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
Off-Highway Trucks	1.4	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
Off-Highway Trucks	1.4	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
Tractors/Loaders/Backhoes	9.8	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
Tractors/Loaders/Backhoes	9.8	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
Cranes	2.5	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
Forklifts	1.8	0.2	3.4	0.3	0.0	0.0	0.0	568.3	0.0
Aerial Lifts	2.1	0.2	3.3	1.4	0.0	0.0	0.0	568.3	0.0
Excavators	12.1	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
	*PM10 Emissions assume Tier 4i and are based on CalEEMod Appendix D Table 3.5								

	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Fleet Average, Off-Highway Trucks, Loaders, and Dozers	4.6	0.2	1.1	0.4	0.0	0.0	0.0	568.3	0.0
Fleet Average, Other Equipment	5.1	0.2	2.3	0.6	0.0	0.0	0.0	568.3	0.0

*Fuel used is assumed to have been split 66% to
Trucks loaders and dozers, and 33% to other engines.

Effect of 2024 amendments to off-road engine regulation which require offroad fleets to burn only renewable diesel (RD) as discussed in Appendix L. 50%

	TOG g/yr	ROG g/yr	CO g/yr	NOX g/yr	SO2 g/yr	PM10 g/yr	PM2.5 g/yr	CO2 g/yr	CH4 g/yr
Off-Highway Trucks, Loaders, and Dozers	15,495,145.1	665,137.2	3,721,589.8	1,189,637.2	18,302.1	45,273.6	45,273.6	957,993,413.6	29,138.9
Other Equipment	8,638,897.4	331,876.3	3,838,386.1	1,016,278.9	9,692.9	21,914.4	21,914.4	478,996,706.8	14,644.7
Sum 2016	24,134,042.5	997,013.5	7,559,975.9	2,205,916.1	27,995.0	67,188.0	67,188.0	1,436,990,120.3	43,783.6

Sum lb/yr Assuming 2016 Fuel Use	
lb/day (assuming ratio of mining peak day to annual rate)	
(Combined 1,018,509 Tons Produced in 2016)	
Annual Ems. Adjusted for Basline/Future Tonnage	
Daily Ems. Adjusted for Baseline/Future Tonnage	

Theoretical Max Hour	**Load Factor**
Crawler Tractors	0.43
Crawler Tractors	0.43
Excavators	0.38
Excavators	0.38
Tractors/Loaders/Backhoes	0.37
Graders	0.41
Off-Highway Trucks	0.38
Off-Highway Trucks	0.38
Off-Highway Trucks	0.38
Tractors/Loaders/Backhoes	0.37
Tractors/Loaders/Backhoes	0.37
Cranes	0.29
Forklifts	0.2
Aerial Lifts	0.31
Excavators	0.38

Sum Max Hour Emissions

	CalEEMod Emission Factors (g/hphr) 2012 Calendar Year (Baseline)									
	TOG	**ROG**	**CO**	**NOX**	**SO2**	**PM10**	**PM2.5**	**CO2**	**CH4**	**CO2e**
Sum lb/yr Assuming 2016 Fuel Use	5,792.7	4,868.2	27,221.4	62,949.6	55.7	2,643.9	2,430.4	5,842,766.5	1,709.1	5,890,622.3
lb/day (assuming ratio of mining peak day to annual rate)	22.0	18.5	103.3	239.0	0.2	10.0	9.2	22,181.9	6.5	22,363.6
(Combined 1,018,509 Tons Produced in 2016)										
Annual Ems. Adjusted for Basline/Future Tonnage	**11,299.7**	**9,496.3**	**53,100.3**	**122,794.6**	**108.7**	**5,157.4**	**4,741.0**	**11,397,380.7**	**3,334.0**	**11,490,732.2**
Daily Ems. Adjusted for Baseline/Future Tonnage	42.9	36.1	201.6	466.2	0.4	19.6	18.0	43,269.9	12.7	43,624.3

Theoretical Max Hour	**TOG lb/hr**	**ROG lb/hr**	**CO lb/hr**	**NOX lb/hr**	**SO2 lb/hr**	**PM10 lb/hr**	**PM2.5 lb/hr**	**CO2 lb/hr**	**CH4 lb/hr**	**CO2e lb/hr**
Crawler Tractors	0.1	0.1	0.4	1.4	0.0	0.1	0.1	116.6	0.0	117.6
Crawler Tractors	0.1	0.1	0.9	1.7	0.0	0.1	0.1	152.6	0.0	153.8
Excavators	0.1	0.1	0.5	1.5	0.0	0.0	0.0	189.1	0.1	190.6
Excavators	0.1	0.0	0.3	0.5	0.0	0.0	0.0	43.7	0.0	44.0
Tractors/Loaders/Backhoes	0.1	0.1	0.4	1.1	0.0	0.0	0.0	115.3	0.0	116.3
Graders	0.1	0.1	0.5	1.1	0.0	0.1	0.1	65.1	0.0	65.7
Off-Highway Trucks	0.1	0.1	0.6	1.5	0.0	0.1	0.1	147.6	0.0	148.8
Off-Highway Trucks	0.2	0.1	0.7	1.6	0.0	0.1	0.1	161.3	0.0	162.6
Off-Highway Trucks	0.1	0.1	0.6	1.5	0.0	0.1	0.1	147.6	0.0	148.8
Tractors/Loaders/Backhoes	0.2	0.1	0.8	1.9	0.0	0.1	0.1	202.9	0.1	204.5
Tractors/Loaders/Backhoes	0.2	0.1	0.8	1.9	0.0	0.1	0.1	202.9	0.1	204.5
Cranes	0.1	0.1	0.4	1.2	0.0	0.1	0.1	75.2	0.0	75.8
Forklifts	0.0	0.0	0.2	0.5	0.0	0.0	0.0	33.4	0.0	33.6
Aerial Lifts	0.0	0.0	0.3	0.4	0.0	0.0	0.0	49.9	0.0	50.4
Excavators	0.1	0.1	0.7	2.0	0.0	0.1	0.1	231.0	0.1	232.8
Sum Max Hour Emissions	**1.8**	**1.5**	**8.2**	**19.8**	**0.0**	**0.8**	**0.7**	**1,934.2**	**0.6**	**1,950.0**

	CalEEMod Emission Factors (g/hphr) 2018 Calendar Year (Year 0 - 30)									
	TOG	**ROG**	**CO**	**NOX**	**SO2**	**PM10**	**PM2.5**	**CO2**	**CH4**	**CO2e**
Sum lb/yr Assuming 2016 Fuel Use	4,051.3	3,403.2	21,482.5	39,530.4	55.7	1,593.8	1,473.0	2,735,631.0	852.0	2,759,486.4
lb/day (assuming ratio of mining peak day to annual rate)	17.8	15.0	94.6	174.1	0.2	7.0	6.5	12,046.8	3.8	12,151.9
(Combined 1,018,509 Tons Produced in 2016)										
Annual Ems. Adjusted for Basline/Future Tonnage	**10,839.0**	**9,105.2**	**57,476.1**	**105,762.7**	**149.1**	**4,264.2**	**3,941.0**	**7,319,124.7**	**2,279.5**	**7,382,949.5**
Daily Ems. Adjusted for Baseline/Future Tonnage	47.7	40.1	253.1	465.7	0.7	18.8	17.4	32,231.0	10.0	32,512.1

Theoretical Max Hour	**TOG lb/hr**	**ROG lb/hr**	**CO lb/hr**	**NOX lb/hr**	**SO2 lb/hr**	**PM10 lb/hr**	**PM2.5 lb/hr**	**CO2 lb/hr**	**CH4 lb/hr**	**CO2e lb/hr**
Crawler Tractors	0.1	0.1	0.4	1.2	0.0	0.0	0.0	109.5	0.0	110.5
Crawler Tractors	0.1	0.1	0.7	1.3	0.0	0.0	0.0	143.2	0.0	144.4
Excavators	0.1	0.1	0.4	0.7	0.0	0.0	0.0	177.8	0.1	179.4
Excavators	0.0	0.0	0.3	0.3	0.0	0.0	0.0	41.1	0.0	41.5
Tractors/Loaders/Backhoes	0.1	0.0	0.3	0.6	0.0	0.0	0.0	107.1	0.0	108.0
Graders	0.1	0.1	0.5	0.8	0.0	0.0	0.0	60.7	0.0	61.2
Off-Highway Trucks	0.1	0.1	0.4	0.9	0.0	0.0	0.0	138.5	0.0	139.7
Off-Highway Trucks	0.1	0.1	0.5	0.9	0.0	0.0	0.0	151.3	0.0	152.6
Off-Highway Trucks	0.1	0.1	0.4	0.9	0.0	0.0	0.0	138.5	0.0	139.7
Tractors/Loaders/Backhoes	0.1	0.1	0.6	1.0	0.0	0.0	0.0	188.4	0.1	190.1
Tractors/Loaders/Backhoes	0.1	0.1	0.6	1.0	0.0	0.0	0.0	188.4	0.1	190.1
Cranes	0.1	0.1	0.3	0.8	0.0	0.0	0.0	70.7	0.0	71.3
Forklifts	0.0	0.0	0.2	0.3	0.0	0.0	0.0	31.4	0.0	31.6
Aerial Lifts	0.0	0.0	0.3	0.2	0.0	0.0	0.0	46.9	0.0	47.3
Excavators	0.1	0.1	0.5	1.0	0.0	0.0	0.0	217.5	0.1	219.4
Sum Max Hour Emissions	**1.2**	**1.0**	**6.4**	**12.0**	**0.0**	**0.5**	**0.4**	**1,811.1**	**0.6**	**1,826.9**

	CalEEMod Emission Factors (g/hphr) 2048 Calendar Year (Year 31 - 100)									
	TOG	**ROG**	**CO**	**NOX**	**SO2**	**PM10**	**PM2.5**	**CO2**	**CH4**	**CO2e**
Sum lb/yr Assuming 2016 Fuel Use	53,206.5	2,198.0	16,666.9	4,863.2	61.7	148.1	148.1	3,168,020.9	96.5	3,170,723.7
lb/day (assuming ratio of mining peak day to annual rate)	248.3	10.3	77.8	22.7	0.3	0.7	0.7	14,784.1	0.5	14,796.7
(Combined 1,018,509 Tons Produced in 2016)										
Annual Ems. Adjusted for Basline/Future Tonnage	**156,718.7**	**6,474.3**	**49,092.0**	**14,324.5**	**181.8**	**436.3**	**436.3**	**9,331,348.8**	**284.3**	**9,339,309.7**
Daily Ems. Adjusted for Baseline/Future Tonnage	731.4	30.2	229.1	66.8	0.8	2.0	2.0	43,546.3	1.3	43,583.4

Theoretical Max Hour	**TOG lb/hr**	**ROG lb/hr**	**CO lb/hr**	**NOX lb/hr**	**SO2 lb/hr**	**PM10 lb/hr**	**PM2.5 lb/hr**	**CO2 lb/hr**	**CH4 lb/hr**	**CO2e lb/hr**
Crawler Tractors	0.7	0.0	0.3	0.1	0.0	0.0	0.0	126.6	0.0	126.7
Crawler Tractors	1.5	0.1	0.3	0.1	0.0	0.0	0.0	164.9	0.0	165.0
Excavators	2.7	0.1	0.4	0.1	0.0	0.0	0.0	206.6	0.0	206.8
Excavators	0.3	0.0	0.3	0.1	0.0	0.0	0.0	48.1	0.0	48.1
Tractors/Loaders/Backhoes	2.2	0.0	0.2	0.1	0.0	0.0	0.0	125.2	0.0	125.3
Graders	0.2	0.0	0.4	0.0	0.0	0.0	0.0	69.3	0.0	69.4
Off-Highway Trucks	0.4	0.1	0.3	0.1	0.0	0.0	0.0	159.5	0.0	159.6
Off-Highway Trucks	0.4	0.1	0.3	0.1	0.0	0.0	0.0	174.3	0.0	174.4
Off-Highway Trucks	0.4	0.1	0.3	0.1	0.0	0.0	0.0	159.5	0.0	159.6
Tractors/Loaders/Backhoes	3.8	0.1	0.4	0.1	0.0	0.0	0.0	220.2	0.0	220.4
Tractors/Loaders/Backhoes	3.8	0.1	0.4	0.1	0.0	0.0	0.0	220.2	0.0	220.4
Cranes	0.4	0.0	0.2	0.0	0.0	0.0	0.0	81.8	0.0	81.8
Forklifts	0.1	0.0	0.2	0.0	0.0	0.0	0.0	36.3	0.0	36.4
Aerial Lifts	0.2	0.0	0.3	0.1	0.0	0.0	0.0	54.4	0.0	54.4
Excavators	5.4	0.1	0.5	0.1	0.0	0.0	0.0	253.5	0.0	253.7
Sum Max Hour Emissions	**22.5**	**0.7**	**4.9**	**1.4**	**0.0**	**0.0**	**0.0**	**2,100.2**	**0.1**	**2,102.0**

Haul Truck Emissions
See Calculations in Appendix J.

	Regional Increment	PTE (2026+)	PTE Baseline (2005)
Project Share + Additional (CO2e, MT)	709	1,534	5,359
Project Share + Additional (CO2, MT)	658	1,432	5,313
Project Share + Additional (NOx, tons)	0.42868	1.19822	65.94843
Project Share + Additional (PM2.5, tons)	0.01137	0.01718	2.38608
Project Share + Additional (PM10, tons)	0.01189	0.01796	2.49396
Project Share + Additional (CH4, MT)	0.00022	0.00053	0.16159
Project Share + Additional (N2O, MT)	0.19271	0.38389	0.15558
Project Share + Additional (ROG, tons)	0.00983	0.01544	3.89536
Project Share + Additional (TOG, tons)	0.01119	0.01758	4.43457
Project Share + Additional (NH3, tons)	0.21566	0.28565	0.09407
Project Share + Additional (CO, tons)	0.04561	0.08216	13.56203
Project Share + Additional (SOx, tons)	0.00394	0.00637	0.52317

		Employee Commutes Baseline										
		trips/yr	Paved VMT/yr	Unpaved VMT/yr	Total Fugitive Dust lb/yr	CO lb/yr	NOx lb/yr	PM10 lb/yr	PM2_5 lb/yr	ROG lb/yr	SOx lb/yr	CO2e lb/yr
Annual	Plant site	26,926.0	528,018.9	-	158,659.1	12,132.6	753.7	31.7	14.8	962.8	2.7	633,550.9
	Quarry site	500.0	9,805.0	3.0	2,946.2	12,132.6	753.7	31.7	14.8	962.8	2.7	633,550.9
	Total Both Sites	**27,426.0**	**537,823.9**	**3.0**	**161,605.3**	**24,265.1**	**1,507.4**	**63.4**	**29.5**	**1,925.6**	**5.3**	**1,267,101.8**
Daily	Plant site	107.7	2,112.1	-	634.6	48.5	3.0	0.1	0.1	3.9	0.0	2,534.2
	Quarry site	2.0	39.2	0.0	11.8	48.5	3.0	0.1	0.1	3.9	0.0	2,534.2
	Total Both Sites	**109.7**	**2,151.3**	**0.0**	**646.4**	**97.1**	**6.0**	**0.3**	**0.1**	**7.7**	**0.0**	**5,068.4**
Hourly	Plant site	26.9	528.0	-	158.7	12.1	0.8	0.0	0.0	1.0	0.0	633.6
	Quarry site	0.5	9.8	0.0	2.9	12.1	0.8	0.0	0.0	1.0	0.0	633.6
	Total Both Sites	**27.4**	**537.8**	**0.0**	**161.6**	**24.3**	**1.5**	**0.1**	**0.0**	**1.9**	**0.0**	**1,267.1**

		Employee Commutes Years 0 - 30										
		trips/yr	Paved VMT/yr	Unpaved VMT/yr	Total Fugitive Dust lb/yr	CO lb/yr	NOx lb/yr	PM10 lb/yr	PM2_5 lb/yr	ROG lb/yr	SOx lb/yr	CO2e lb/yr
Annual	Plant site	24,252.0	475,581.7	2.3	533,388.4	7,097.7	365.5	21.7	9.6	582.8	1.8	418,389.8
	Quarry site	6,000.0	117,660.0	0.6	131,961.5	4,925.5	40.1	22.8	8.2	262.8	1.8	426,021.4
	Total Both Sites	**30,252.0**	**593,241.7**	**2.8**	**665,349.9**	**12,023.2**	**405.6**	**44.5**	**17.9**	**845.6**	**3.6**	**844,411.3**
Daily	Plant site	97.0	1,902.3	0.0	2,133.6	28.4	1.5	0.1	0.0	2.3	0.0	1,673.6
	Quarry site	24.0	470.6	0.0	527.8	19.7	0.2	0.1	0.0	1.1	0.0	1,704.1
	Total Both Sites	**121.0**	**2,373.0**	**0.0**	**2,661.4**	**48.1**	**1.6**	**0.2**	**0.1**	**3.4**	**0.0**	**3,377.6**
Hourly	Plant site	24.3	475.6	0.0	533.4	7.1	0.4	0.0	0.0	0.6	0.0	418.4
	Quarry site	6.0	117.7	0.0	132.0	4.9	0.0	0.0	0.0	0.3	0.0	426.0
	Total Both Sites	**30.3**	**593.2**	**0.0**	**665.3**	**12.0**	**0.4**	**0.0**	**0.0**	**0.8**	**0.0**	**844.4**

		Employee Commutes Years 31 - 100										
		trips/yr	Paved VMT/yr	Unpaved VMT/yr	Total Fugitive Dust lb/yr	CO lb/yr	NOx lb/yr	PM10 lb/yr	PM2_5 lb/yr	ROG lb/yr	SOx lb/yr	CO2e lb/yr
Annual	Plant site	-	-	-	-	7,097.7	365.5	21.7	9.6	582.8	1.8	418,389.8
	Quarry site	30,252.0	756,300.0	-	227,253.0	4,925.5	40.1	22.8	8.2	262.8	1.8	426,021.4
	Total Both Sites	**30,252.0**	**756,300.0**	**-**	**227,253.0**	**12,023.2**	**405.6**	**44.5**	**17.9**	**845.6**	**3.6**	**844,411.3**
Daily	Plant site	-	-	-	-	28.4	1.5	0.1	0.0	2.3	0.0	1,673.6
	Quarry site	121.0	3,025.2	-	909.0	19.7	0.2	0.1	0.0	1.1	0.0	1,704.1
	Total Both Sites	**121.0**	**3,025.2**	**-**	**909.0**	**48.1**	**1.6**	**0.2**	**0.1**	**3.4**	**0.0**	**3,377.6**
Hourly	Plant site	-	-	-	-	7.1	0.4	0.0	0.0	0.6	0.0	418.4
	Quarry site	30.3	756.3	-	227.3	4.9	0.0	0.0	0.0	0.3	0.0	426.0
	Total Both Sites	**30.3**	**756.3**	**-**	**227.3**	**12.0**	**0.4**	**0.0**	**0.0**	**0.8**	**0.0**	**844.4**

250 workdays per year
4 hour during which employee trravel each day

Road Dust Emissions Factors

		lb/VMT	k	sL	W	P
PM10	EF =	0.30048	1	0.1	2.4	0
PM2.5	EF =	0.07512	0.25	0.1	2.4	0

assume no rain days is conservative

CalEEMod Fresno County Home-Work Trip Length: 19.61 miles
CalEEMod public road dust emissions factor: 0.1 lb/VMT

		Baseline (2018 Emissions Factors)											
		trips/yr	Paved VMT/yr	Unpaved VMT/yr	Total Fugitive Dust lb/yr	CO lb/yr	NOx lb/yr	PM10 lb/yr	PM2_5 lb/yr	ROG lb/yr	SOx lb/yr	TOG lb/yr	CO2e lb/yr
Plant Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	43,206.0	13,393.9	6,913.0	9,707.8	109.8	473.8	16.3	2,069.5	43.7	0.4	49.8	115,498.4
	Recycle Plant	2,000.0	620.0	560.0	785.0	6.4	27.5	0.9	167.1	2.5	0.0	2.9	6,711.4
	Aggregates Plant	84,922.0	26,325.8	23,778.2	33,332.5	270.8	1,169.1	40.1	7,094.8	107.9	0.9	122.8	284,974.7
	Mined Aggregate	-	-	-	-	-	-	-	-	-	-	-	-
	Site Services and Visitors	1,072.0	332.3	300.2	420.8	3.4	14.8	0.5	89.6	1.4	0.0	1.6	3,597.3
	Total Plant Site	**131,200.0**	**40,672.0**	**31,551.3**	**44,246.1**	**390.4**	**1,685.2**	**57.9**	**9,420.9**	**155.5**	**1.3**	**177.0**	**410,781.9**
Between Sites (1.8 miles)		**112,500**	**202,500**	**-**	**605.2**	**1,094.7**	**4,725.0**	**162.3**	**242.5**	**436.0**	**3.8**	**496.4**	**1,151,752.3**
Quarry Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Mined Aggregate	112,500.0	-	95,062.5	132,945.1	513.9	2,218.1	76.2	28,238.0	204.7	1.8	233.0	540,683.7
	Site Services and Visitors	-	-	-	-	-	-	-	-	-	-	-	-
	Total Quarry Site	**112,500.0**	**-**	**95,062.5**	**132,945.1**	**513.9**	**2,218.1**	**76.2**	**28,238.0**	**204.7**	**1.8**	**233.0**	**540,683.7**
	Total Both Sites	**243,700.0**	**40,672.0**	**126,613.8**	**177,191.2**	**904.3**	**3,903.3**	**134.0**	**37,658.9**	**360.2**	**3.1**	**410.1**	**951,465.6**
	Total with Between Haul	**356,200**	**243,172**	**126,614**	**177,796**	**1,999**	**8,628**	**296**	**37,901**	**796**	**7**	**906**	**2,103,218**

Notes: 1. Project emisisons of CO2e would be maximum in Year 1 of the project as demonstrated in Appendix J for off-site travel.
2. The carbon intensity of ULSD in 2026 is less than unmodified ULSD by this amount (see also Appendix L): 18.6%
3. The carbon intensity of ULSD in 2018 is less than the unmodified ULSD by this amount (see also Appendix L): 2%
4.. PM2.5 values include 21.2% of PM10 that is fugitive dust (CEDARIS), exhaust, and tire/brake wear.

		Years 0 - 30 (2026 Emissions Factors)											
		trips/yr	Paved VMT/yr	Unpaved VMT/yr	Total Fugitive Dust lb/yr	CO lb/yr	NOx lb/yr	PM10 lb/yr	PM2_5 lb/yr	ROG lb/yr	SOx lb/yr	TOG lb/yr	CO2e lb/yr
Plant Site	Asphalt Plant	41,851.9	11,300.0	10,044.4	14,081.0	16.1	100.3	6.6	2,987.6	1.5	0.3	1.8	82,924.8
	Ready Mix Plant	68,380.1	21,197.8	10,940.8	15,364.1	24.2	151.0	9.9	3,260.9	2.3	0.5	2.7	124,861.1
	Recycle Plant	32,006.8	9,922.1	8,961.9	12,562.9	14.2	88.7	5.8	2,665.5	1.4	0.3	1.6	73,366.0
	Aggregates Plant	22,000.0	6,820.0	6,160.0	8,635.2	9.8	61.0	4.0	1,832.1	0.9	0.2	1.1	50,428.3
	Mined Aggregate	11,000.0	-	2,200.0	3,076.7	1.7	10.3	0.7	652.5	0.2	0.0	0.2	8,547.2
	Site Services and Visitors	1,362.0	422.2	381.4	534.6	0.6	3.8	0.2	113.4	0.1	0.0	0.1	3,122.0
	Total Plant Site	**176,600.8**	**49,662.2**	**38,688.5**	**54,254.5**	**66.5**	**415.0**	**27.3**	**11,512.0**	**6.4**	**1.3**	**7.3**	**343,249.4**
Between Sites (1.8 miles)		**56,250.0**	**101,250.0**	**-**	**302.6**	**76.2**	**475.6**	**31.3**	**75.7**	**7.3**	**1.5**	**8.4**	**393,364.0**
Quarry Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	218,000.0	83,930.0	67,580.0	94,761.6	114.0	711.7	46.8	20,106.7	11.0	2.3	12.5	588,628.0
	Mined Aggregate	218,000.0	-	184,210.0	257,618.1	138.6	865.3	56.9	54,636.0	13.4	2.7	15.2	715,670.0
	Site Services and Visitors	1,228.0	472.8	380.7	533.8	0.6	4.0	0.3	113.3	0.1	0.0	0.1	3,315.8
	Total Quarry Site	**437,228.0**	**84,402.8**	**252,170.7**	**352,913.6**	**253.3**	**1,581.0**	**104.0**	**74,856.0**	**24.4**	**5.0**	**27.8**	**1,307,613.8**
	Total Both Sites	**613,828.8**	**134,065.0**	**290,859.2**	**407,168.0**	**319.7**	**1,996.0**	**131.3**	**86,368.0**	**30.8**	**6.3**	**35.1**	**1,650,863.2**
	Total with Between Haul	**670,079**	**235,315**	**290,859**	**407,471**	**396**	**2,472**	**163**	**86,444**	**38**	**8**	**43**	**2,044,227**

		Years 31 - 100 (2050 Emissions Factors)											
		trips/yr	Paved VMT/yr	Unpaved VMT/yr	Total Fugitive Dust lb/yr	CO lb/yr	NOx lb/yr	PM10 lb/yr	PM2_5 lb/yr	ROG lb/yr	SOx lb/yr	TOG lb/yr	CO2e lb/yr
Plant Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Mined Aggregate	-	-	-	-	-	-	-	-	-	-	-	-
	Site Services and Visitors	-	-	-	-	-	-	-	-	-	-	-	-
	Total Plant Site	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Between Sites (1.8 miles)													
Quarry Site	Asphalt Plant	41,851.9	14,857.4	-	44.4	8.7	31.5	5.0	11.2	0.8	0.2	0.9	48,203.3
	Ready Mix Plant	68,380.1	32,480.6	-	97.1	19.0	68.9	10.9	24.5	1.7	0.4	1.9	105,379.7
	Recycle Plant	32,006.8	12,322.6	9,922.1	13,912.9	13.0	47.2	7.5	2,952.3	1.2	0.3	1.3	72,170.8
	Aggregates Plant	240,000.0	92,400.0	74,400.0	104,324.8	97.7	353.6	56.1	22,137.2	8.7	2.1	9.9	541,165.0
	Mined Aggregate	240,000.0	-	48,000.0	67,128.1	28.1	101.8	16.1	14,237.0	2.5	0.6	2.9	155,730.9
	Site Services and Visitors	1,388.0	534.4	430.3	603.3	0.6	2.0	0.3	128.0	0.1	0.0	0.1	3,129.7
	Total Quarry Site	**623,626.8**	**152,595.0**	**132,752.4**	**186,110.6**	**167.2**	**605.0**	**96.0**	**39,490.3**	**15.0**	**3.5**	**17.0**	**925,779.4**
	Total Both Sites	**623,626.8**	**152,595.0**	**132,752.4**	**186,110.6**	**167.2**	**605.0**	**96.0**	**39,490.3**	**15.0**	**3.5**	**17.0**	**925,779.4**
	Total with Between Haul	**623,627**	**152,595**	**132,752**	**186,111**	**167**	**605**	**96**	**39,490**	**15**	**4**	**17**	**925,779**

		Baseline (2018 Emissions Factors)										
		trips/day	Paved VMT/day	Unpaved VMT/day	Total Fugitive Dust lb/day	CO lb/day	NOx lb/day	PM10 lb/day	PM2_5 lb/day	ROG lb/day	SOx lb/day	TOG lb/day
Plant Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	288.7	89.5	46.2	64.9	0.7	3.2	0.1	13.8	0.3	0.0	0.3
	Recycle Plant	242.0	75.0	67.8	95.0	0.8	3.3	0.1	20.2	0.3	0.0	0.4
	Aggregates Plant	480.0	148.8	134.4	188.4	1.5	6.6	0.2	40.1	0.6	0.0	0.7
	Mined Aggregate	-	-	-	-	-	-	-	-	-	-	-
	Site Services and Visitors	3.6	1.1	1.0	1.4	0.0	0.0	0.0	0.3	0.0	0.0	0.0
	Total Plant Site	**1,014.3**	**314.4**	**249.4**	**349.7**	**3.0**	**13.2**	**0.5**	**74.4**	**1.2**	**0.0**	**1.4**
Between Sites (1.8 miles)		**480**	**864**	**-**	**2.6**	**4.7**	**20.2**	**0.7**	**1.0**	**1.9**	**0.0**	**2.1**
Quarry Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	-	-	-	-	-	-	-	-	-	-	-
	Mined Aggregate	480.0	-	405.6	567.2	2.2	9.5	0.3	120.5	0.9	0.0	1.0
	Site Services and Visitors	-	-	-	-	-	-	-	-	-	-	-
	Total Quarry Site	**480.0**	**-**	**405.6**	**567.2**	**2.2**	**9.5**	**0.3**	**120.5**	**0.9**	**0.0**	**1.0**
Total Both Sites		**1,494.3**	**314.4**	**655.0**	**916.9**	**5.2**	**22.6**	**0.8**	**194.9**	**2.1**	**0.0**	**2.4**
Total with Between Haul		**1,974**	**1,178**	**655**	**919**	**10**	**43**	**1**	**196**	**4**	**0**	**4**

Notes: 1. Project emisisons of CO2e would be maximum in Year 1 of the project as demonstrated in Appendix J for off-site travel.

2. The carbon intensity of ULSD in 2026 is less than unmodified ULSD by this amount (see also Appendix L): 18.6%

3. The carbon intensity of ULSD in 2018 is less than the unmodified ULSD by this amount (see also Appendix L): 2%

		Years 0 - 30 (2026 Emissions Factors)										
		trips/day	Paved VMT/day	Unpaved VMT/day	Total Fugitive Dust lb/day	CO lb/day	NOx lb/day	PM10 lb/day	PM2_5 lb/day	ROG lb/day	SOx lb/day	TOG lb/day
Plant Site	Asphalt Plant	281.0	75.9	67.4	94.5	0.1	0.7	0.0	20.1	0.0	0.0	0.0
	Ready Mix Plant	288.7	89.5	46.2	64.9	0.1	0.6	0.0	13.8	0.0	0.0	0.0
	Recycle Plant	242.0	75.0	67.8	95.0	0.1	0.7	0.0	20.2	0.0	0.0	0.0
	Aggregates Plant	320.0	99.2	89.6	125.6	0.1	0.9	0.1	26.6	0.0	0.0	0.0
	Mined Aggregate	320.0	-	64.0	89.5	0.0	0.3	0.0	19.0	0.0	0.0	0.0
	Site Services and Visitors	9.0	2.8	2.5	3.5	0.0	0.0	0.0	0.7	0.0	0.0	0.0
	Total Plant Site	**1,460.6**	**342.4**	**337.5**	**473.0**	**0.5**	**3.2**	**0.2**	**100.4**	**0.0**	**0.0**	**0.1**
Between Sites (1.8 miles)		**240.0**	**432.0**	**-**	**1.3**	**0.3**	**2.0**	**0.1**	**0.3**	**0.0**	**0.0**	**0.0**
Quarry Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	960.0	369.6	297.6	417.3	0.5	3.1	0.2	88.5	0.0	0.0	0.1
	Mined Aggregate	960.0	-	811.2	1,134.5	0.6	3.8	0.3	240.6	0.1	0.0	0.1
	Site Services and Visitors	9.0	3.5	2.8	3.9	0.0	0.0	0.0	0.8	0.0	0.0	0.0
	Total Quarry Site	**1,929.0**	**373.1**	**1,111.6**	**1,555.7**	**1.1**	**7.0**	**0.5**	**330.0**	**0.1**	**0.0**	**0.1**
Total Both Sites		**3,389.6**	**715.4**	**1,449.1**	**2,028.7**	**1.6**	**10.2**	**0.7**	**430.3**	**0.2**	**0.0**	**0.2**
Total with Between Haul		**3,630**	**1,147**	**1,449**	**2,030**	**2**	**12**	**1**	**431**	**0**	**0**	**0**

		Years 31 - 100 (2050 Emissions Factors)										
		trips/day	Paved VMT/day	Unpaved VMT/day	Total Fugitive Dust lb/day	CO lb/day	NOx lb/day	PM10 lb/day	PM2_5 lb/day	ROG lb/day	SOx lb/day	TOG lb/day
Plant Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	-	-	-	-	-	-	-	-	-	-	-
	Mined Aggregate	-	-	-	-	-	-	-	-	-	-	-
	Site Services and Visitors	-	-	-	-	-	-	-	-	-	-	-
	Total Plant Site	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Between Sites (1.8 miles)		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Quarry Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	288.7	137.1	-	0.4	0.1	0.3	0.0	0.1	0.0	0.0	0.0
	Recycle Plant	240.0	92.4	74.4	104.3	0.1	0.4	0.1	22.1	0.0	0.0	0.0
	Aggregates Plant	1,120.0	431.2	347.2	486.8	0.5	1.7	0.3	103.3	0.0	0.0	0.0
	Mined Aggregate	1,120.0	-	224.0	313.3	0.1	0.5	0.1	66.4	0.0	0.0	0.0
	Site Services and Visitors	10.0	3.9	3.1	4.3	0.0	0.0	0.0	0.9	0.0	0.0	0.0
	Total Quarry Site	**2,778.7**	**664.6**	**648.7**	**909.2**	**0.8**	**2.8**	**0.4**	**192.9**	**0.1**	**0.0**	**0.1**
Total Both Sites		**2,778.7**	**664.6**	**648.7**	**909.2**	**0.8**	**2.8**	**0.4**	**192.9**	**0.1**	**0.0**	**0.1**
Total with Between Haul		**2,779**	**665**	**649**	**909**	**1**	**3**	**0**	**193**	**0**	**0**	**0**

		Baseline										
		trips/hr	Paved VMT/hr	Unpaved VMT/hr	Total Fugitive Dust lb/hr	CO lb/hr	NOx lb/hr	PM10 lb/hr	PM2_5 lb/hr	ROG lb/hr	SOx lb/hr	TOG lb/hr
Plant Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	43.3	13.4	6.9	9.7	0.1	0.5	0.0	2.1	0.0	0.0	0.0
	Recycle Plant	36.3	11.3	10.2	14.2	0.1	0.5	0.0	3.0	0.0	0.0	0.1
	Aggregates Plant	38.0	11.8	10.6	14.9	0.1	0.5	0.0	3.2	0.0	0.0	0.1
	Mined Aggregate	-	-	-	-	-	-	-	-	-	-	-
	Site Services and Visitors	0.5	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Plant Site	**118.1**	**36.6**	**27.9**	**39.1**	**0.3**	**1.5**	**0.1**	**8.3**	**0.1**	**0.0**	**0.2**
Between Sites (1.8 miles)		**38**	**68**	**-**	**0.2**	**0.4**	**1.6**	**0.1**	**0.1**	**0.1**	**0.0**	**0.2**
Quarry Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	-	-	-	-	-	-	-	-	-	-	-
	Mined Aggregate	38.0	-	32.1	44.9	0.2	0.7	0.0	9.5	0.1	0.0	0.1
	Site Services and Visitors	-	-	-	-	-	-	-	-	-	-	-
	Total Quarry Site	**38.0**	**-**	**32.1**	**44.9**	**0.2**	**0.7**	**0.0**	**9.5**	**0.1**	**0.0**	**0.1**
	Total Both Sites	**156.1**	**36.6**	**60.0**	**84.0**	**0.5**	**2.3**	**0.1**	**17.9**	**0.2**	**0.0**	**0.2**
	Total with Between Haul	**194**	**105**	**60**	**84**	**1**	**4**	**0**	**18**	**0**	**0**	**0**

		Years 0 - 30										
		trips/hr	Paved VMT/hr	Unpaved VMT/hr	Total Fugitive Dust lb/hr	CO lb/hr	NOx lb/hr	PM10 lb/hr	PM2_5 lb/hr	ROG lb/hr	SOx lb/hr	TOG lb/hr
Plant Site	Asphalt Plant	42.2	11.4	10.1	14.2	0.0	0.1	0.0	3.0	0.0	0.0	0.0
	Ready Mix Plant	43.3	13.4	6.9	9.7	0.0	0.1	0.0	2.1	0.0	0.0	0.0
	Recycle Plant	36.3	11.3	10.2	14.2	0.0	0.1	0.0	3.0	0.0	0.0	0.0
	Aggregates Plant	38.0	11.8	10.6	14.9	0.0	0.1	0.0	3.2	0.0	0.0	0.0
	Mined Aggregate	64.0	-	12.8	17.9	0.0	0.1	0.0	3.8	0.0	0.0	0.0
	Site Services and Visitors	1.4	0.4	0.4	0.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0
	Total Plant Site	**225.1**	**48.3**	**51.0**	**71.5**	**0.1**	**0.5**	**0.0**	**15.2**	**0.0**	**0.0**	**0.0**
Between Sites (1.8 miles)		**19.0**	**34.2**	**-**	**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Quarry Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	88.0	33.9	27.3	38.3	0.0	0.3	0.0	8.1	0.0	0.0	0.0
	Mined Aggregate	88.0	-	74.4	104.0	0.1	0.3	0.0	22.1	0.0	0.0	0.0
	Site Services and Visitors	1.4	0.5	0.4	0.6	0.0	0.0	0.0	0.1	0.0	0.0	0.0
	Total Quarry Site	**177.4**	**34.4**	**102.1**	**142.8**	**0.1**	**0.6**	**0.0**	**30.3**	**0.0**	**0.0**	**0.0**
	Total Both Sites	**402.5**	**82.7**	**153.1**	**214.3**	**0.2**	**1.1**	**0.1**	**45.5**	**0.0**	**0.0**	**0.0**
	Total with Between Haul	**421**	**117**	**153**	**214**	**0**	**1**	**0**	**45**	**0**	**0**	**0**

		Years 31 - 100										
		trips/hr	Paved VMT/hr	Unpaved VMT/hr	Total Fugitive Dust lb/hr	CO lb/hr	NOx lb/hr	PM10 lb/hr	PM2_5 lb/hr	ROG lb/hr	SOx lb/hr	TOG lb/hr
Plant Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	-	-	-	-	-	-	-	-	-	-	-
	Mined Aggregate	-	-	-	-	-	-	-	-	-	-	-
	Site Services and Visitors	-	-	-	-	-	-	-	-	-	-	-
	Total Plant Site	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Between Sites (1.8 miles)		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Quarry Site	Asphalt Plant	42.0	14.9	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ready Mix Plant	43.3	20.6	-	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Recycle Plant	36.0	13.9	11.2	15.6	0.0	0.1	0.0	3.3	0.0	0.0	0.0
	Aggregates Plant	88.0	33.9	27.3	38.3	0.0	0.1	0.0	8.1	0.0	0.0	0.0
	Mined Aggregate	88.0	-	17.6	24.6	0.0	0.0	0.0	5.2	0.0	0.0	0.0
	Site Services and Visitors	1.5	0.6	0.5	0.7	0.0	0.0	0.0	0.1	0.0	0.0	0.0
	Total Quarry Site	**298.8**	**83.8**	**56.5**	**79.3**	**0.1**	**0.3**	**0.0**	**16.8**	**0.0**	**0.0**	**0.0**
	Total Both Sites	**298.8**	**83.8**	**56.5**	**79.3**	**0.1**	**0.3**	**0.0**	**16.8**	**0.0**	**0.0**	**0.0**
	Total with Between Haul	**299**	**84**	**57**	**79**	**0**	**0**	**0**	**17**	**0**	**0**	**0**

EMFAC 2025 T7 Tractor Class 8 Emissions in lbs/VMT

	Pollutant							
Calendar Year	CO (lb/VMT)	NOx (lb/VM	PM10 Total (lb/VMT)	PM25 Total (lb/VMT)	ROG (lb/VMT)	SOx (lb/VMT)	TOG (lb/VMT)	CO2e (lb/VMT)
2005	0.025647013	0.060177	0.004238639	0.003812018	0.011356029	0.000541403	0.012927975	6.200121689
2006	0.024863706	0.059019	0.004059375	0.003640508	0.011198053	0.000539765	0.012748131	6.178720386
2007	0.023784591	0.057465	0.00370181	0.003298412	0.010862287	2.00134E-05	0.012365887	6.16797111
2008	0.023330556	0.056404	0.003557962	0.003160787	0.010784799	1.99763E-05	0.012277672	6.157201758
2009	0.021462556	0.052892	0.003203514	0.002822256	0.009924634	1.99712E-05	0.011298441	6.155167572
2010	0.023388209	0.055239	0.003466962	0.003075971	0.010885192	1.9955E-05	0.012391963	6.154788603
2011	0.022156007	0.052431	0.003249686	0.002871448	0.010318661	1.99064E-05	0.01174701	6.147505207
2012	0.020482669	0.049579	0.002980975	0.002616745	0.009500217	1.9867E-05	0.010815274	6.14117981
2013	0.015619115	0.042061	0.002218056	0.001894848	0.007336341	1.9472E-05	0.008351866	6.036190272
2014	0.010302343	0.03705	0.001527857	0.001240364	0.004634858	1.93454E-05	0.005276433	6.010475817
2015	0.008735069	0.032883	0.001284451	0.001012746	0.003865365	1.91552E-05	0.004400424	5.961096772
2016	0.007364394	0.028955	0.001078219	0.000820745	0.003169185	1.89762E-05	0.003607875	5.91970059
2017	0.006133092	0.026203	0.000906174	0.000660088	0.002521866	1.87463E-05	0.002870953	5.860702146
2018	0.005405692	0.023333	0.000801273	0.000564108	0.002153283	1.85194E-05	0.002451348	5.803740286
2019	0.003940869	0.018701	0.000606353	0.000384157	0.001452373	1.81105E-05	0.001653416	5.698798883
2020	0.003484803	0.016865	0.00056283	0.000345626	0.001229764	1.78182E-05	0.001399993	5.613370413
2021	0.002940771	0.015341	0.000498885	0.000286789	0.000976154	1.75216E-05	0.001111277	5.530150247
2022	0.002592077	0.014377	0.000460161	0.000251342	0.000815676	1.72625E-05	0.000928585	5.457244538
2023	0.001005996	0.008632	0.000318894	0.000123665	0.00012374	1.64128E-05	0.000140869	5.229075355
2024	0.000907909	0.007299	0.000313807	0.000119004	0.000100669	1.59145E-05	0.000114604	5.078854766
2025	0.000819901	0.005824	0.00031037	0.000115702	8.3609E-05	1.54039E-05	9.51824E-05	4.923822752
2026	0.000752452	0.004697	0.000309041	0.000113882	7.25373E-05	1.49071E-05	8.25782E-05	4.772821881
2027	0.000701651	0.00422	0.000310221	0.000113898	6.53249E-05	1.44547E-05	7.43675E-05	4.635212391
2028	0.000661983	0.003651	0.000312622	0.000114389	6.04186E-05	1.40216E-05	6.8782E-05	4.503443434
2029	0.000634076	0.003357	0.000315694	0.000115298	5.73129E-05	1.36448E-05	6.52464E-05	4.388749645
2030	0.000616007	0.003147	0.000318979	0.000116354	5.5453E-05	1.33283E-05	6.3129E-05	4.292429464
2031	0.000604989	0.002972	0.000322132	0.000117399	5.43304E-05	1.30755E-05	6.1851E-05	4.215474077
2032	0.000598301	0.002822	0.000324898	0.000118326	5.36533E-05	1.28815E-05	6.10802E-05	4.156416777
2033	0.000592937	0.002687	0.000327379	0.000119157	5.31229E-05	1.27284E-05	6.04764E-05	4.109777927
2034	0.000589755	0.002581	0.000329497	0.000119875	5.28032E-05	1.26111E-05	6.01124E-05	4.074087599
2035	0.000588464	0.002497	0.000331274	0.000120484	5.26636E-05	1.25234E-05	5.99535E-05	4.04736263
2036	0.000588008	0.00242	0.000332711	0.000120976	5.26083E-05	1.24582E-05	5.98906E-05	4.027536605
2037	0.000586362	0.002345	0.000333901	0.000121374	5.24521E-05	1.24076E-05	5.97127E-05	4.012116043
2038	0.000584883	0.002291	0.000334772	0.000121665	5.23138E-05	1.23752E-05	5.95553E-05	4.002249926
2039	0.000585065	0.002265	0.000335352	0.000121866	5.23263E-05	1.23547E-05	5.95695E-05	3.996023889
2040	0.000585561	0.002245	0.000335733	0.000122	5.23682E-05	1.23419E-05	5.96172E-05	3.992103455
2041	0.000586522	0.002223	0.000335973	0.000122085	5.24528E-05	1.2334E-05	5.97135E-05	3.989712576
2042	0.000585352	0.0022	0.00033611	0.000122123	5.23473E-05	1.23291E-05	5.95934E-05	3.988217956
2043	0.000584347	0.002192	0.000336193	0.000122147	5.22568E-05	1.2326E-05	5.94904E-05	3.98727728
2044	0.000585022	0.002198	0.000336259	0.000122175	5.23169E-05	1.23241E-05	5.95589E-05	3.986688445
2045	0.000585738	0.002198	0.000336302	0.000122194	5.23807E-05	1.23229E-05	5.96314E-05	3.986317814
2046	0.000586246	0.002189	0.000336324	0.000122201	5.24261E-05	1.23221E-05	5.96831E-05	3.986084512
2047	0.000584938	0.002179	0.000336325	0.000122193	5.2309E-05	1.23216E-05	5.95498E-05	3.985935695
2048	0.000584278	0.002182	0.000336331	0.000122194	5.225E-05	1.23213E-05	5.94826E-05	3.985841016
2049	0.000584779	0.002192	0.000336346	0.000122204	5.22948E-05	1.23211E-05	5.95336E-05	3.985780683
2050	0.000585905	0.00212	0.000336296	0.000122155	5.23954E-05	1.2321E-05	5.96482E-05	3.985742306

EMFAC 2025 T7 Tractor Class 8 Emissions in lbs/VMT by Period

	CO	NOx	PM10	PM2_5	ROG	SOx	TOG	Co2e
Baseline	0.00541	0.02333	0.00080	0.00056	0.00215	1.85E-05	2.45E-03	5.80
Years 0 - 29	0.00075	0.00470	0.00031	0.00011	0.00007	1.49E-05	8.26E-05	4.77
Year 30-99	0.00059	0.00212	0.00034	0.00012	0.00005	1.23E-05	5.96E-05	3.99

2018	0.00541	0.02333	0.00080	0.00056	0.00215	0.00002	0.00245	5.80374
2026	0.00075	0.00470	0.00031	0.00011	0.00007	0.00001	0.00008	4.77282
2056	0.00059	0.00212	0.00034	0.00012	0.00005	0.00001	0.00006	3.98574

Note: Calendar years after 2050 are assumed to have equivalent emissions to 2050.

Region	Calendar Year	Vehicle Cat	Model Year	Speed	Fuel	Population	Total VMT	Trips
Fresno (SJV)	2005	LDT1	Agg.	Agg.	GAS	44,903.7	1,300,819.1	206,509.4
Fresno (SJV)	2006	LDT1	Agg.	Agg.	GAS	44,364.1	1,225,531.9	194,019.8
Fresno (SJV)	2007	LDT1	Agg.	Agg.	GAS	42,604.6	1,147,715.4	181,325.5
Fresno (SJV)	2008	LDT1	Agg.	Agg.	GAS	40,858.9	1,084,176.8	172,743.3
Fresno (SJV)	2009	LDT1	Agg.	Agg.	GAS	38,936.7	1,040,194.6	165,765.2
Fresno (SJV)	2010	LDT1	Agg.	Agg.	GAS	37,377.6	1,028,623.7	162,573.4
Fresno (SJV)	2011	LDT1	Agg.	Agg.	GAS	35,287.0	955,977.7	149,797.8
Fresno (SJV)	2012	LDT1	Agg.	Agg.	GAS	33,983.3	917,865.5	143,690.2
Fresno (SJV)	2013	LDT1	Agg.	Agg.	GAS	33,245.5	896,689.1	140,501.7
Fresno (SJV)	2014	LDT1	Agg.	Agg.	GAS	32,268.3	878,165.8	138,386.8
Fresno (SJV)	2015	LDT1	Agg.	Agg.	GAS	33,144.0	952,491.8	152,277.3
Fresno (SJV)	2016	LDT1	Agg.	Agg.	GAS	32,142.7	998,243.8	161,948.6
Fresno (SJV)	2017	LDT1	Agg.	Agg.	GAS	32,740.5	973,837.6	155,581.8
Fresno (SJV)	2018	LDT1	Agg.	Agg.	GAS	32,218.1	965,540.5	153,170.5
Fresno (SJV)	2019	LDT1	Agg.	Agg.	GAS	33,843.5	980,249.0	152,629.2
Fresno (SJV)	2020	LDT1	Agg.	Agg.	GAS	32,524.6	773,477.3	119,970.0
Fresno (SJV)	2021	LDT1	Agg.	Agg.	GAS	33,648.6	914,745.6	139,030.0
Fresno (SJV)	2022	LDT1	Agg.	Agg.	GAS	30,480.4	812,914.1	119,462.7
Fresno (SJV)	2023	LDT1	Agg.	Agg.	GAS	29,564.8	789,702.3	117,808.0
Fresno (SJV)	2024	LDT1	Agg.	Agg.	GAS	28,687.8	757,388.2	113,403.7
Fresno (SJV)	2025	LDT1	Agg.	Agg.	GAS	27,896.9	733,195.2	109,999.4
Fresno (SJV)	2026	LDT1	Agg.	Agg.	GAS	27,162.8	707,303.7	106,421.2
Fresno (SJV)	2027	LDT1	Agg.	Agg.	GAS	26,462.9	681,894.2	102,942.9
Fresno (SJV)	2028	LDT1	Agg.	Agg.	GAS	25,798.7	662,722.5	100,327.4
Fresno (SJV)	2029	LDT1	Agg.	Agg.	GAS	25,161.0	645,845.0	98,001.6
Fresno (SJV)	2030	LDT1	Agg.	Agg.	GAS	24,500.8	629,063.9	95,766.4
Fresno (SJV)	2031	LDT1	Agg.	Agg.	GAS	23,837.1	612,780.0	93,619.6
Fresno (SJV)	2032	LDT1	Agg.	Agg.	GAS	23,199.2	597,003.7	91,539.6
Fresno (SJV)	2033	LDT1	Agg.	Agg.	GAS	22,589.7	581,878.7	89,532.4
Fresno (SJV)	2034	LDT1	Agg.	Agg.	GAS	21,978.7	566,889.0	87,578.2
Fresno (SJV)	2035	LDT1	Agg.	Agg.	GAS	21,408.9	552,573.5	85,691.8
Fresno (SJV)	2036	LDT1	Agg.	Agg.	GAS	20,814.5	538,188.7	83,759.4
Fresno (SJV)	2037	LDT1	Agg.	Agg.	GAS	20,257.0	524,433.0	81,878.7
Fresno (SJV)	2038	LDT1	Agg.	Agg.	GAS	19,695.2	510,691.7	80,035.3
Fresno (SJV)	2039	LDT1	Agg.	Agg.	GAS	19,136.1	497,181.0	78,245.4
Fresno (SJV)	2040	LDT1	Agg.	Agg.	GAS	18,578.3	483,875.5	76,455.9
Fresno (SJV)	2041	LDT1	Agg.	Agg.	GAS	18,021.6	470,735.1	74,670.6
Fresno (SJV)	2042	LDT1	Agg.	Agg.	GAS	17,448.0	457,608.5	72,900.4
Fresno (SJV)	2043	LDT1	Agg.	Agg.	GAS	16,879.4	444,667.6	71,172.2
Fresno (SJV)	2044	LDT1	Agg.	Agg.	GAS	16,362.4	432,728.9	69,553.3
Fresno (SJV)	2045	LDT1	Agg.	Agg.	GAS	15,855.0	421,011.7	67,939.8
Fresno (SJV)	2046	LDT1	Agg.	Agg.	GAS	15,376.0	409,813.3	66,391.7
Fresno (SJV)	2047	LDT1	Agg.	Agg.	GAS	14,904.7	398,840.8	64,885.0
Fresno (SJV)	2048	LDT1	Agg.	Agg.	GAS	14,516.7	389,065.2	63,494.8
Fresno (SJV)	2049	LDT1	Agg.	Agg.	GAS	14,164.5	379,793.7	62,153.1
Fresno (SJV)	2050	LDT1	Agg.	Agg.	GAS	13,856.9	371,629.0	60,918.0

Source: EMFAC2025 (v2.1.0) Emissions Inventory
Region Type: Sub-Area
Region: Fresno (SJV)

Calendar Year: 2005 to 2050
Vehicle Classification: EMFAC202Y Categories Season: Annual
Units: miles/day for Combustion VMT and Electric VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Gasoline and Diesel Fuel Consumption, 1000 diesel equivalent gallons/day for Natural Gas Fuel Consumption, kWh/day for Energy Consumption, kg/day for

Calendar Year	ROG_TOTAL	TOG_TOTAL	CO_TOTEX	NOx_TOTEX	CO2_TOTEX	PM10_TOTAL	PM2.5_TOTAL	SOx_TOTEX	N2O_TOTEX
2005	1.966267053	2.146595768	24.1099569	2.032994323	665.86282	0.042486213	0.025302713	0.002820002	0.106746476
2006	1.842709824	2.010407943	22.267529	1.867745673	629.11882	0.039214681	0.023029151	0.002652474	0.098631286
2007	1.676931459	1.828555339	20.0842777	1.666345444	591.06841	0.035641762	0.020538554	0.002479271	0.088653957
2008	1.481720202	1.616196354	17.8772753	1.438595005	553.57308	0.032247044	0.018103079	0.00233864	0.077501685
2009	1.352018256	1.47523365	16.3307846	1.294659186	535.60779	0.029973013	0.016454627	0.002263595	0.070560947
2010	1.259530449	1.375607774	15.3862778	1.210040968	520.16915	0.028735512	0.015400403	0.002224971	0.066679958
2011	1.151848718	1.257725392	13.9851227	1.085696637	480.72732	0.026299046	0.013897132	0.002062379	0.060284649
2012	1.064333762	1.161571134	12.9048281	0.98167563	460.06564	0.024663193	0.012789752	0.001968444	0.05499553
2013	0.996368233	1.086209331	12.0509226	0.890694961	443.77841	0.023535926	0.011979985	0.00190762	0.050442208
2014	0.895107009	0.975044661	10.8287929	0.790030052	428.05267	0.022244604	0.010986233	0.001844982	0.04567844
2015	0.867815165	0.944254964	10.6132411	0.741386914	457.60814	0.023419484	0.011329178	0.001962308	0.04365648
2016	0.82814254	0.900886495	10.3370152	0.694536704	471.96058	0.024084807	0.011479913	0.002023997	0.041565381
2017	0.761409989	0.826535635	9.45727646	0.612682123	455.58608	0.02323106	0.010951521	0.00195277	0.037390605
2018	0.690502592	0.748603993	8.70123698	0.540544207	445.42984	0.02273777	0.010591799	0.001911641	0.033738485
2019	0.724921618	0.785271135	8.90294764	0.564085418	450.9551	0.023268354	0.010861727	0.00193374	0.035404706
2020	0.595697153	0.640047179	6.76377876	0.41463342	353.13672	0.018261615	0.008470643	0.001514346	0.026350311
2021	0.616219593	0.663210366	7.48610067	0.436015428	411.60858	0.021282429	0.009758496	0.001765466	0.028110202
2022	0.564086592	0.606357469	6.77229773	0.395513224	366.05096	0.019034854	0.008714876	0.001571857	0.025440621
2023	0.536141257	0.575060242	6.40410079	0.363643426	353.16013	0.018377006	0.008352703	0.00151472	0.023582608
2024	0.501027652	0.536382416	5.9866211	0.32955165	335.32886	0.017513555	0.007902251	0.001439642	0.02152556
2025	0.468013347	0.500237603	5.62995987	0.300011103	321.2001	0.016834625	0.007538136	0.001378984	0.019740188
2026	0.433375378	0.462625559	5.27801276	0.271800568	306.35258	0.0161301	0.007170868	0.00131524	0.018000966
2027	0.405054789	0.431503433	4.9383006	0.245391748	291.924	0.015427174	0.006801319	0.001253295	0.016377945
2028	0.383708233	0.407879238	4.70344402	0.222239388	280.55479	0.014860643	0.006490405	0.001204484	0.014981921
2029	0.360010158	0.382089047	4.44219081	0.200759594	270.22485	0.014345453	0.00620249	0.001160136	0.01370122
2030	0.336532146	0.356519011	4.18474421	0.178680454	260.13961	0.013827882	0.00591156	0.001116837	0.012423408
2031	0.312766542	0.330820393	3.9361541	0.157092884	250.49754	0.013323927	0.005627729	0.001075442	0.01119509
2032	0.289244506	0.30552224	3.70401425	0.137581833	241.34891	0.012843205	0.005359185	0.001036165	0.01008212
2033	0.271382467	0.286092018	3.49090027	0.120421991	232.75582	0.012392579	0.005110693	0.000999273	0.009093966
2034	0.250664438	0.263819894	3.28524219	0.106087471	224.44864	0.011950178	0.004868011	0.000963608	0.00822681
2035	0.241246998	0.253061117	3.10177819	0.095063906	216.69877	0.011538871	0.004646107	0.000930336	0.007521854
2036	0.228964974	0.239464501	2.9194284	0.084310892	209.08839	0.011147243	0.004443086	0.000897663	0.006835725
2037	0.211000773	0.220346705	2.75316211	0.07504341	201.9716	0.01077874	0.004254087	0.000867109	0.00623769
2038	0.197810942	0.206113408	2.60716269	0.066232234	195.11836	0.010415796	0.00406997	0.000837687	0.005669031
2039	0.183421275	0.190754602	2.47143635	0.058483588	188.52247	0.010062762	0.003892347	0.000809369	0.005156567
2040	0.166484002	0.17291472	2.34665811	0.051192032	182.16628	0.009721544	0.003723295	0.00078208	0.004672438
2041	0.152887468	0.158453283	2.22375808	0.043999256	176.00319	0.009405315	0.003575344	0.000755621	0.004201069
2042	0.138952523	0.14372063	2.10902847	0.037356294	169.957	0.009091898	0.003429892	0.000729663	0.003755731
2043	0.127840719	0.13193848	2.00324439	0.03142857	164.10832	0.008786674	0.003289864	0.000704554	0.003350519
2044	0.118397812	0.121988505	1.91496448	0.02685872	158.8047	0.008507145	0.00316217	0.000681784	0.003026981
2045	0.110092914	0.113286113	1.83364594	0.022860695	153.59958	0.008235335	0.00303903	0.000659437	0.002738314
2046	0.102232826	0.105080912	1.75897696	0.019466086	148.71821	0.007979855	0.002925046	0.00063848	0.00248856
2047	0.095391032	0.097930532	1.68833756	0.016340045	144.00555	0.007731677	0.002815221	0.000618248	0.002256982
2048	0.090057457	0.092384295	1.63245214	0.014364781	139.94851	0.007516261	0.002721915	0.00060083	0.002102044
2049	0.085969769	0.088148444	1.58452113	0.013372187	136.18548	0.007321142	0.002641584	0.000584675	0.002009962
2050	0.082311168	0.084371623	1.54274788	0.012545382	132.92598	0.007149214	0.002571061	0.000570681	0.001931966

Calendar Year	ROG lbs/VMT	TOG lbs/VMT	CO lbs/VMT	NOX lbs/VMT	CO2 lbs/VMT	PM10 lbs/VMT	PM2.5 lbs/VMT	SOx lbs/VMT	N2O lbs/VMT
2005	3.02E-03	3.30E-03	3.71E-02	3.13E-03	1.02E+00	6.53E-05	3.89E-05	4.34E-06	1.64E-04
2006	3.01E-03	3.28E-03	3.63E-02	3.05E-03	1.03E+00	6.40E-05	3.76E-05	4.33E-06	1.61E-04
2007	2.92E-03	3.19E-03	3.50E-02	2.90E-03	1.03E+00	6.21E-05	3.58E-05	4.32E-06	1.54E-04
2008	2.73E-03	2.98E-03	3.30E-02	2.65E-03	1.02E+00	5.95E-05	3.34E-05	4.31E-06	1.43E-04
2009	2.60E-03	2.84E-03	3.14E-02	2.49E-03	1.03E+00	5.76E-05	3.16E-05	4.35E-06	1.36E-04
2010	2.45E-03	2.67E-03	2.99E-02	2.35E-03	1.01E+00	5.59E-05	2.99E-05	4.33E-06	1.30E-04
2011	2.41E-03	2.63E-03	2.93E-02	2.27E-03	1.01E+00	5.50E-05	2.91E-05	4.31E-06	1.26E-04
2012	2.32E-03	2.53E-03	2.81E-02	2.14E-03	1.00E+00	5.37E-05	2.79E-05	4.29E-06	1.20E-04
2013	2.22E-03	2.42E-03	2.69E-02	1.99E-03	9.90E-01	5.25E-05	2.67E-05	4.25E-06	1.13E-04
2014	2.04E-03	2.22E-03	2.47E-02	1.80E-03	9.75E-01	5.07E-05	2.50E-05	4.20E-06	1.04E-04
2015	1.82E-03	1.98E-03	2.23E-02	1.56E-03	9.61E-01	4.92E-05	2.38E-05	4.12E-06	9.17E-05
2016	1.66E-03	1.80E-03	2.07E-02	1.39E-03	9.46E-01	4.83E-05	2.30E-05	4.06E-06	8.33E-05
2017	1.56E-03	1.70E-03	1.94E-02	1.26E-03	9.36E-01	4.77E-05	2.25E-05	4.01E-06	7.68E-05
2018	1.43E-03	1.55E-03	1.80E-02	1.12E-03	9.23E-01	4.71E-05	2.19E-05	3.96E-06	6.99E-05
2019	1.48E-03	1.60E-03	1.82E-02	1.15E-03	9.20E-01	4.75E-05	2.22E-05	3.95E-06	7.22E-05
2020	1.54E-03	1.65E-03	1.75E-02	1.07E-03	9.13E-01	4.72E-05	2.19E-05	3.92E-06	6.81E-05
2021	1.35E-03	1.45E-03	1.64E-02	9.53E-04	9.00E-01	4.65E-05	2.13E-05	3.86E-06	6.15E-05
2022	1.39E-03	1.49E-03	1.67E-02	9.73E-04	9.01E-01	4.68E-05	2.14E-05	3.87E-06	6.26E-05
2023	1.36E-03	1.46E-03	1.62E-02	9.21E-04	8.94E-01	4.65E-05	2.12E-05	3.84E-06	5.97E-05
2024	1.32E-03	1.42E-03	1.58E-02	8.70E-04	8.85E-01	4.62E-05	2.09E-05	3.80E-06	5.68E-05
2025	1.28E-03	1.36E-03	1.54E-02	8.18E-04	8.76E-01	4.59E-05	2.06E-05	3.76E-06	5.38E-05
2026	1.23E-03	1.31E-03	1.49E-02	7.69E-04	8.66E-01	4.56E-05	2.03E-05	3.72E-06	5.09E-05
2027	1.19E-03	1.27E-03	1.45E-02	7.20E-04	8.56E-01	4.52E-05	1.99E-05	3.68E-06	4.80E-05
2028	1.16E-03	1.23E-03	1.42E-02	6.71E-04	8.47E-01	4.48E-05	1.96E-05	3.63E-06	4.52E-05
2029	1.11E-03	1.18E-03	1.38E-02	6.22E-04	8.37E-01	4.44E-05	1.92E-05	3.59E-06	4.24E-05
2030	1.07E-03	1.13E-03	1.33E-02	5.68E-04	8.27E-01	4.40E-05	1.88E-05	3.55E-06	3.95E-05
2031	1.02E-03	1.08E-03	1.28E-02	5.13E-04	8.18E-01	4.35E-05	1.84E-05	3.51E-06	3.65E-05
2032	9.69E-04	1.02E-03	1.24E-02	4.61E-04	8.09E-01	4.30E-05	1.80E-05	3.47E-06	3.38E-05
2033	9.33E-04	9.83E-04	1.20E-02	4.14E-04	8.00E-01	4.26E-05	1.76E-05	3.43E-06	3.13E-05
2034	8.84E-04	9.31E-04	1.16E-02	3.74E-04	7.92E-01	4.22E-05	1.72E-05	3.40E-06	2.90E-05
2035	8.73E-04	9.16E-04	1.12E-02	3.44E-04	7.84E-01	4.18E-05	1.68E-05	3.37E-06	2.72E-05
2036	8.51E-04	8.90E-04	1.08E-02	3.13E-04	7.77E-01	4.14E-05	1.65E-05	3.34E-06	2.54E-05
2037	8.05E-04	8.40E-04	1.05E-02	2.86E-04	7.70E-01	4.11E-05	1.62E-05	3.31E-06	2.38E-05
2038	7.75E-04	8.07E-04	1.02E-02	2.59E-04	7.64E-01	4.08E-05	1.59E-05	3.28E-06	2.22E-05
2039	7.38E-04	7.67E-04	9.94E-03	2.35E-04	7.58E-01	4.05E-05	1.57E-05	3.26E-06	2.07E-05
2040	6.88E-04	7.15E-04	9.70E-03	2.12E-04	7.53E-01	4.02E-05	1.54E-05	3.23E-06	1.93E-05
2041	6.50E-04	6.73E-04	9.45E-03	1.87E-04	7.48E-01	4.00E-05	1.52E-05	3.21E-06	1.78E-05
2042	6.07E-04	6.28E-04	9.22E-03	1.63E-04	7.43E-01	3.97E-05	1.50E-05	3.19E-06	1.64E-05
2043	5.75E-04	5.93E-04	9.01E-03	1.41E-04	7.38E-01	3.95E-05	1.48E-05	3.17E-06	1.51E-05
2044	5.47E-04	5.64E-04	8.85E-03	1.24E-04	7.34E-01	3.93E-05	1.46E-05	3.15E-06	1.40E-05
2045	5.23E-04	5.38E-04	8.71E-03	1.09E-04	7.30E-01	3.91E-05	1.44E-05	3.13E-06	1.30E-05
2046	4.99E-04	5.13E-04	8.58E-03	9.50E-05	7.26E-01	3.89E-05	1.43E-05	3.12E-06	1.21E-05
2047	4.78E-04	4.91E-04	8.47E-03	8.19E-05	7.22E-01	3.88E-05	1.41E-05	3.10E-06	1.13E-05
2048	4.63E-04	4.75E-04	8.39E-03	7.38E-05	7.19E-01	3.86E-05	1.40E-05	3.09E-06	1.08E-05
2049	4.53E-04	4.64E-04	8.34E-03	7.04E-05	7.17E-01	3.86E-05	1.39E-05	3.08E-06	1.06E-05
2050	4.43E-04	4.54E-04	8.30E-03	6.75E-05	7.15E-01	3.85E-05	1.38E-05	3.07E-06	1.04E-05

EMFAC 2025 Light Truck Emissions by Period (lbs/VMT)

	CO	**NOx**	**PM10**	**PM2_5**	**ROG**	**SOx**	**TOG**	**Co2e**
Baseline	0.01802	0.00112	0.00005	0.00002	0.00143	0.00000	0.00155	0.94117
Years 0 - 29	0.01492	0.00077	0.00005	0.00002	0.00123	0.00000	0.00131	0.87974
Year 30-99	0.00830	0.00007	0.00004	0.00001	0.00044	0.000003	0.00045	0.71812

Note: After calendar year 2050, 2050 emission factors are assumed.

Natural Gas Fired Asphalt Plant with Fabric Filter		Years 1 - 30				
Substance	**CAS#**	**lbs/ton asphalt Produced**	lbs/ton apsha	**LB/HR**	**LB/DAY**	**LB/YR**
PM10	85101	**0.023**	**0.0025**	**1.2**	**8.3**	**1,244.3**
CO	42101	**0.13**	**N/A**	**65.0**	**433.3**	**65,000.0**
CO2	124389	**33**	**N/A**	**16,500.0**	**109,989.0**	**16,500,000.0**
Nox	42603	**0.0087 (a)**	**N/A**	**4.4**	**29.1**	**4,371.4**
SO2	42401	**0.0034**	**N/A**	**1.7**	**11.3**	**1,700.0**
CH4	74828	**0.012**	**N/A**	**6.0**	**40.0**	**6,000.0**
VOC	43104	**0.0082 (b)**	**N/A**	**4.1**	**27.3**	**4,100.0**
2,2,4-Trimethylpentane	**540841**	4.00E-05	**4.33E-06**	**0.0022**		**2.2**
2-Methyl naphthalene	**91576**	7.40E-05	**8.01E-06**	**0.0040**		**4.0**
Acenaphthene	**83329**	1.40E-06	**1.51E-07**	**0.0001**		**0.1**
Acenaphthylene	**208968**	8.60E-06	**9.31E-07**	**0.0005**		**0.5**
Anthracene	**120127**	2.20E-07	**2.38E-08**	**0.0000**		**0.0**
Antimony	**7440360**	1.80E-07	**1.95E-08**	**0.0000**		**0.0**
Arsenic	**7440382**	5.60E-07	**6.06E-08**	**0.0000**		**0.0**
Barium	**7440393**	5.80E-06	**6.28E-07**	**0.0003**		**0.3**
Benzene	**71432**	3.90E-04	**4.22E-05**	**0.0211**		**21.1**
Benzo(a)anthracene	**56553**	2.10E-07	**2.27E-08**	**0.0000**		**0.0**
Benzo(a)pyrene	**50328**	9.80E-09	**1.06E-09**	**0.0000**		**0.0**
Benzo(b)fluoranthene	**205992**	1.00E-07	**1.08E-08**	**0.0000**		**0.0**
Benzo(g,h,i)perylene	**191242**	4.00E-08	**4.33E-09**	**0.0000**		**0.0**
Benzo(k)fluoranthene	**207089**	4.10E-08	**4.44E-09**	**0.0000**		**0.0**
Cadmium	**7440439**	4.10E-07	**4.44E-08**	**0.0000**		**0.0**
Chromium	**7440473**	5.50E-06	**5.95E-07**	**0.0003**		**0.3**
Chrysene	**218019**	1.80E-07	**1.95E-08**	**0.0000**		**0.0**
Cobalt	**7440484**	2.60E-08	**2.81E-09**	**0.0000**		**0.0**
Copper	**7440508**	3.10E-06	**3.35E-07**	**0.0002**		**0.2**
Ethylbenzene	**100414**	2.40E-04	**2.60E-05**	**0.0130**		**13.0**
Ethylene	**74851**	7.00E-03	**7.57E-04**	**0.3787**		**378.7**
Fluorene	**86737**	3.80E-06	**4.11E-07**	**0.0002**		**0.2**
Fluoranthene	**206440**	6.10E-07	**6.60E-08**	**0.0000**		**0.0**
Formaldehyde	**50000**	3.10E-03	**3.35E-04**	**0.1677**		**167.7**
Hexane	**110543**	9.20E-04	**9.95E-05**	**0.0498**		**49.8**
Hexvalent Chromium	**18540299**	4.50E-07	**4.87E-08**	**0.0000**		**0.0**
Indeno(1,2,3-cd)pyrene	**193395**	7.00E-09	**7.57E-10**	**0.0000**		**0.0**
Lead	**7439921**	6.20E-07	**6.71E-08**	**0.0000**		**0.0**
Manganese	**7439965**	7.70E-06	**8.33E-07**	**0.0004**		**0.4**
Mercury	**7439976**	2.40E-07	**2.60E-08**	**0.0000**		**0.0**
Methyl Chloroform	**71556**	4.80E-05	**5.19E-06**	**0.0026**		**2.6**
Naphthalene	**91203**	9.00E-05	**9.74E-06**	**0.0049**		**4.9**
Nickel	**7440020**	6.30E-05	**6.82E-06**	**0.0034**		**3.4**
Perylene	**198550**	8.80E-09	**9.52E-10**	**0.0000**		**0.0**
Phenanthrene	**85018**	7.60E-06	**8.22E-07**	**0.0004**		**0.4**
Phosphorus	**7723140**	2.80E-05	**3.03E-06**	**0.0015**		**1.5**
Pyrene	**129000**	5.40E-07	**5.84E-08**	**0.0000**		**0.0**
Selenium	**7782492**	3.50E-07	**3.79E-08**	**0.0000**		**0.0**
Silver	**7440224**	4.80E-07	**5.19E-08**	**0.0000**		**0.0**
Thallium	**7440280**	4.10E-09	**4.44E-10**	**0.0000**		**0.0**
Toluene	**108883**	1.50E-04	**1.62E-05**	**0.0081**		**8.1**
Xylene (mixed xylenes)	**1330207**	2.00E-04	**2.16E-05**	**0.0108**		**10.8**
Zinc	**7440666**	6.10E-05	**6.60E-06**	**0.0033**		**3.3**

Natural Gas Fired Asphalt Plant with Fabric Filter — **Years 31 - 100**

Substance	CAS#	lbs/ton asphalt Produced	lbs/ton apshalt produced	LB/HR	LB/DAY	LB/YR
PM10	85101	**0.023**	**0.0025**	**1.2**	**8.3**	**1,244.3**
CO	42101	**0.13**	**N/A**	**65.0**	**433.3**	**65,000.0**
CO2	124389	**33**	**N/A**	**16,500.0**	**109,989.0**	**16,500,000.0**
Nox	42603	**0.0087 (a)**	**N/A**	**4.4**	**29.1**	**4,371.4**
SO2	42401	**0.0034**	**N/A**	**1.7**	**11.3**	**1,700.0**
CH4	74828	**0.012**	**N/A**	**6.0**	**40.0**	**6,000.0**
VOC	43104	**0.0082 (b)**	**N/A**	**4.1**	**27.3**	**4,100.0**
2,2,4-Trimethylpentane	**540841**	4.00E-05	**4.33E-06**	**0.0022**		**2.2**
2-Methyl naphthalene	**91576**	7.40E-05	**8.01E-06**	**0.0040**		**4.0**
Acenaphthene	**83329**	1.40E-06	**1.51E-07**	**0.0001**		**0.1**
Acenaphthylene	**208968**	8.60E-06	**9.31E-07**	**0.0005**		**0.5**
Anthracene	**120127**	2.20E-07	**2.38E-08**	**0.0000**		**0.0**
Antimony	**7440360**	1.80E-07	**1.95E-08**	**0.0000**		**0.0**
Arsenic	**7440382**	5.60E-07	**6.06E-08**	**0.0000**		**0.0**
Barium	**7440393**	5.80E-06	**6.28E-07**	**0.0003**		**0.3**
Benzene	**71432**	3.90E-04	**4.22E-05**	**0.0211**		**21.1**
Benzo(a)anthracene	**56553**	2.10E-07	**2.27E-08**	**0.0000**		**0.0**
Benzo(a)pyrene	**50328**	9.80E-09	**1.06E-09**	**0.0000**		**0.0**
Benzo(b)fluoranthene	**205992**	1.00E-07	**1.08E-08**	**0.0000**		**0.0**
Benzo(g,h,i)perylene	**191242**	4.00E-08	**4.33E-09**	**0.0000**		**0.0**
Benzo(k)fluoranthene	**207089**	4.10E-08	**4.44E-09**	**0.0000**		**0.0**
Cadmium	**7440439**	4.10E-07	**4.44E-08**	**0.0000**		**0.0**
Chromium	**7440473**	5.50E-06	**5.95E-07**	**0.0003**		**0.3**
Chrysene	**218019**	1.80E-07	**1.95E-08**	**0.0000**		**0.0**
Cobalt	**7440484**	2.60E-08	**2.81E-09**	**0.0000**		**0.0**
Copper	**7440508**	3.10E-06	**3.35E-07**	**0.0002**		**0.2**
Ethylbenzene	**100414**	2.40E-04	**2.60E-05**	**0.0130**		**13.0**
Ethylene	**74851**	7.00E-03	**7.57E-04**	**0.3787**		**378.7**
Fluorene	**86737**	3.80E-06	**4.11E-07**	**0.0002**		**0.2**
Fluoranthene	**206440**	6.10E-07	**6.60E-08**	**0.0000**		**0.0**
Formaldehyde	**50000**	3.10E-03	**3.35E-04**	**0.1677**		**167.7**
Hexane	**110543**	9.20E-04	**9.95E-05**	**0.0498**		**49.8**
Hexvalent Chromium	**18540299**	4.50E-07	**4.87E-08**	**0.0000**		**0.0**
Indeno(1,2,3-cd)pyrene	**193395**	7.00E-09	**7.57E-10**	**0.0000**		**0.0**
Lead	**7439921**	6.20E-07	**6.71E-08**	**0.0000**		**0.0**
Manganese	**7439965**	7.70E-06	**8.33E-07**	**0.0004**		**0.4**
Mercury	**7439976**	2.40E-07	**2.60E-08**	**0.0000**		**0.0**
Methyl Chloroform	**71556**	4.80E-05	**5.19E-06**	**0.0026**		**2.6**
Naphthalene	**91203**	9.00E-05	**9.74E-06**	**0.0049**		**4.9**
Nickel	**7440020**	6.30E-05	**6.82E-06**	**0.0034**		**3.4**
Perylene	**198550**	8.80E-09	**9.52E-10**	**0.0000**		**0.0**
Phenanthrene	**85018**	7.60E-06	**8.22E-07**	**0.0004**		**0.4**
Phosphorus	**7723140**	2.80E-05	**3.03E-06**	**0.0015**		**1.5**
Pyrene	**129000**	5.40E-07	**5.84E-08**	**0.0000**		**0.0**
Selenium	**7782492**	3.50E-07	**3.79E-08**	**0.0000**		**0.0**
Silver	**7440224**	4.80E-07	**5.19E-08**	**0.0000**		**0.0**
Thallium	**7440280**	4.10E-09	**4.44E-10**	**0.0000**		**0.0**
Toluene	**108883**	1.50E-04	**1.62E-05**	**0.0081**		**8.1**
Xylene (mixed xylenes)	**1330207**	2.00E-04	**2.16E-05**	**0.0108**		**10.8**
Zinc	**7440666**	6.10E-05	**6.60E-06**	**0.0033**		**3.3**

Notes:
Emission factors are from March 2004 *AP 42 Table 11.1-8 unless otherwise noted below.*
(a) Nox emission factor based on BACT standard of 36 ppmv @ 3% O2, resulting in the following factor in terms of lb/MMcf:
(b) VOC emission factor from AP-42, Table 11.1-6.

Scalar Factors used to account for modern BACT, per SCAQMD Grain Loading Limit Rule 1155		
0.000190476	mmscf gas/ton asphalt	**Source**
500	ton asphalt / hr	
0.095238	mmscf gas/hr	
1050	mmbtu/mmscf	
99.9999	mmbtu/hr	
8710	dscf/million btu	
870999.129	dscf/hr	ethod 19 tabl
0.01	grain/dscf	
7000	grain/lb	
8709.99129	grain/hr	
1.24428447	lb PM/hr	
0.002488569	PM lb/ton asphalt	

Notes:

Emission factors are from March 2004 *AP 42 Table 11.1*

(a) Nox emission factor based on BACT standard of 36 p

(b) VOC emission factor from AP-42, Table 11.1-6.

Scalar Factors used to account for modern BAC	
SCAQMD Grain Loading Limit Rule 1155	
0.000190476	mmscf gas/ton asphalt
500	ton asphalt / hr
0.095238	mmscf gas/hr
1050	mmbtu/mmscf
99.9999	mmbtu/hr
8710	dscf/million btu
870999.129	dscf/hr
0.01	grain/dscf
7000	grain/lb
8709.99129	grain/hr
1.24428447	lb PM/hr
0.002488569	PM lb/ton asphalt

Emissions from Asphalt Storage and Loadout

Silo Emissions

	Throughput (tons)			Emission Factors (lb/ton)*			Controlled Project Emissions (lb)		
Pollutant	**Hour**	**Day**	**Year**	**Uncontrolled**	**Control Factor**	**Controlled**	**Hour**	**Day**	**Year**
VOC	500	3,333	500,000	0.01220	0%	0.012200	6.10	40.66	6,100.00
PM				0.00059	95%	0.000030	0.01	0.10	14.75
PM10				0.00059	95%	0.000030	0.01	0.10	14.75
CO				0.00118	0%	0.001180	0.59	3.93	590.00

* Emission factors based on AP42 Table 11.1-14, (T=325, V=-0.5). Control efficiencies for Blue Smoke Control.
12 hours at peak rate on the maximum day.

Load Out Emissions

	Throughput (tons)			Emission Factors (lb/ton)*			Controlled Project Emissions (lb)		
Pollutant	**Hour**	**Day**	**Year**	**Uncontrolled**	**Control Factor**	**Controlled**	**Hour**	**Day**	**Year**
VOC	500	3,333	500,000	0.00391	0%	0.003910	1.96	13.03	1,955.00
PM				0.00052	95%	0.000026	0.01	0.09	13.00
PM10				0.00052	95%	0.000026	0.01	0.09	13.00
CO				0.00135	0%	0.001350	0.68	4.50	675.00

Process rates		Blue Smoke Filter Control Efficiency	
(tph)	(tpy)	0%	VOC
500	500,000	95%	PM

* Emission factors based AP42 Table 11.1-14 (T=325, V=-0.5). See calculation below.

Total Change in Loadout and Silo Emissions

	Emissions (lb)		
Pollutant	**Hour**	**Day**	**Year**
VOC	8.06	53.69	8,055.00
PM	0.03	0.18	27.75
PM10	0.03	0.18	27.75
CO	1.27	8.43	1,265.00

Load Out and Silo Emissions

Organic PM and TOC EF Determination

V = -0.5

T = 325

Load Out Organic PM EF = $0.00141(-V)e^{[(0.0251)(T+460)-20.43]}$

Organic PM EF = 0.000341

Silo Fill Organic PM EF = $0.00105(-V)e^{[(0.0251)(T+460)-20.43]}$

Organic PM E 0.000254

Load Out TOC EF = $0.0172(-V)e^{[(0.0251)(T+460)-20.43]}$

TOC EF = 0.004159

Silo Fill TOC EF = $0.0504(-V)e^{[(0.0251)(T+460)-20.43]}$

TOC EF = 0.012187

Proposed Project

Pollutant	Load Out				Silo				Emissions		Control Efficiency	Controlled Emissions	
	Fraction (%)	EF (lb/ton)	missions (lb/h	missions (lb/yr	Fraction (%)	EF (lb/ton)	Emissions (lb/hr)	missions (lb/y	Hourly (lb/hr)	Annual (lb/yr)		Hourly (lb/hr)	Annual (lb/yr)
Organic PM Emissions		0.000341				0.000254							
Total PAH (except naphthale	4.68%	1.6E-05	0.01	7.98	9.58%	2.43E-05	0.01	12.16	0.02	20.14	95%	0.00	1.01
Benzo(a)anthracene	0.019%	6.5E-08	0.00	0.03	0.06%	1.42E-07	0.00	0.07	0.00	0.10	95%	0.00	0.01
Benzo(a)pyrene	0.0023%	7.8E-09	0.00	0.00	0.00%	-	-	-	0.00	0.00	95%	0.00	0.00
Benzo(b)fluoranthene	0.0076%	2.6E-08	0.00	0.01	0.00%	-	-	-	0.00	0.01	95%	0.00	0.00
Benzo(k)fluoranthene	0.0022%	7.5E-09	0.00	0.00	0.00%	-	-	-	0.00	0.00	95%	0.00	0.00
Chrysene	0.1030%	3.5E-07	0.00	0.18	0.21%	5.33E-07	0.00	0.27	0.00	0.44	95%	0.00	0.02
Indeno(1,2,3-cd)pyrene	0.00047%	1.6E-09	0.00	0.00	0.00%	-	-	-	0.00	0.00	95%	0.00	0.00
Dibenz(a,h)anthracene	0.00037%	1.3E-09	0.00	0.00	0.00%	-	-	-	0.00	0.00	95%	0.00	0.00
Naphthalene	1.25%	4.3E-06	0.00	2.13	1.82%	4.62E-06	0.00	2.31	0.00	4.44	95%	0.00	0.22
Phenol	1.18%	4.0E-06	0.00	2.01	0%	-	-	-	0.00	2.01	95%	0.00	0.10

VOC Emissions from Asphalt Storage and Loadout

Criteria Pollutant	CAS#	Combined Storage and Loadout Emissions Factor (lb/ton)	Uncontrolled (LB/HR)	Uncontrolled (LB/DAY)	Uncontrolled (LB/YR)	Controlled (LB/HR)	Controlled (LB/DAY)	Controlled (LB/YR)
VOC	43104	**0.016346**	8.06	53.69	8,055.00	8.06	53.69	8,055.00
TOC	nd	**0.017389**	8.57	57.12	8,569.15	8.57	57.12	8,569.15
CH4	74828	**0.001130**	0.56	3.71	556.99	0.56	3.71	556.99

Substance	CAS#	Weight Fraction Asphalt Storage VOC*	Uncontrolled (LB/HR)		Uncontrolled (LB/YR)	Controlled (LB/HR)		Controlled (LB/YR)
Ethylbenzene	100414	0.023200	0.19		186.88	0.19		186.88
Naphthalene	91203	0.065300	0.53		525.99	0.53		525.99
O-xylene	95476	0.037300	0.30		300.45	0.30		300.45
Trimethylbenzene	25551137	0.089500	0.72		720.92	0.72		720.92
Toluene	108883	0.064500	0.52		519.55	0.52		519.55
Xylene	1330207	0.085600	0.69		689.51	0.69		689.51

References:

The emission factors were taken from a worst case summation of CARB Speciation Profiles 715, 716.
Pollutants required for toxic reporting: HAPS w/o Risk Factor or Non - HAPs Current as of 5/14/2013.
SJVAPCD Silo VOC speciation also applied to Loadout VOC emissions and the sum is represented in this table.
PM emissions omitted from SJVAPCD guidance are calculated elsewhere using AP-42 methodology.

Asphalt Tank Oil Heater Emissions

Inputs			MMscf /hr	MMcf/day	MMscf /yr		
<10 MMBTU/hr			1.90E-03	4.56E-02	16.7		
				Emissions			
Substance	CAS#	Emission Factor lbs/ MMscf	LB/HR	LB/DAY	LB/YR		
PM10	85101	7.6	0.01	0.35	126.92		
CO	42101	84	0.16	3.83	1,402.80		
CO2	124389	120153	228	5,479	2,006,548	Tons CO2	1003.273882
NOx	42603	25.5	0.05	1.16	425.85	Metric Tons	910.1550164
SO2	42401	0.6	0.00	0.03	10.02		
CH4	74828	2.27	0.00	0.10	37.85		
TOC		11	0.02	0.50			
VOC	43104	5.5	0.01	0.25	91.85		
Substances	CAS#	<10 MMBTU/hr Emission Factor	LB/HR		LB/YR		
Acetaldehyde	75070	4.30E-03	0.00		0.07		
Acrolein **	107028	0.00E+00	-		-		
Benzene	71432	8.00E-03	0.00		0.13		
Ethyl Benzene	100414	9.50E-03	0.00		0.16		
Formaldehyde	50000	1.70E-02	0.00		0.28		
Hexane	110543	6.30E-03	0.00		0.11		
Naphthalene	91203	3.00E-04	0.00		0.01		
PAH's	1151	1.00E-04	0.00		0.00		
Propylene	115071	7.31E-01	0.00		12.21		
Toluene	108883	3.66E-02	0.00		0.61		
Xylenes	1330207	2.72E-02	0.00		0.45		

References:

* The emission factors are from the table, "Natural Gas Fired External Combustion Equipment" in the May 2001 update of *VCAPCD AB 2588 Combustion Emission Factors* . PAHs emission factor adjusted from table values to subtract Naphthalene portion.

** Acrolein can not be accurately measured and is assigned zero emissions.
https://ww3.arb.ca.gov/ab2588/acrolein.htm
Rate assumed to be 2 MMBtu/hr or less operating 8,670 hr/yr.
NOx emissions factor equal to value in Rule 4308 Table 2 or 0.024 lb/MMBtu * 1050 btu/cf.

0.00002	ppm NOx @ 3% O2
46	lb/lbmole
0.002585315	dscf/lb-mol
8743	dscf/MMbtu for 1050 btu/scf natural gas at 70 deg F
20.9	% O2 in atmosphere
3	% O2 standard
0.024280359	lb/MMBtu
1050	btu/cf HHV
25.5	lb/MMcf

Equations from https://www.valleyair.org/notices/Docs/2015/04-01-15_(S-1133606)/S-1133606.pdf
Other factors from https://ww3.arb.ca.gov/ei/areasrc/districtmeth/sjvalley/mthd_industrialngcombustion_sjv_2005.pdf

GHG factors from : https://ww3.arb.ca.gov/cc/inventory/doc/docs1/1a2m_manufacturing_fuelcombustion_naturalgas_co2_2017.htm

Dust Emissions From Activities Related to Baseline Asphalt and Concrete Processing

	Project Emissions		Mitigated Emissions	
	PM10	PM2.5	PM10	PM2.5
Hourly (lb/hr)	0.36	0.05	0.36	0.05
Daily (lb/day)	4.29	0.55	4.29	0.55
Annual (lb/yr)	38.90	5.70	38.90	5.70

Activity Levels

Throughput (tons/hr)	225
Operation (hr/day)	12
Production (tons/year)	25,000

Recycle Plant Fugitive Dust Emissions Calculations

Equipment	Percent of Plant Feed Rate	Rate (ton/hr)	PM10 (lb/ton)	PM2.5 (lb/ton)	PM10 (lb/hr)	PM2.5 (lb/hr)	PM10 (lb/day)	PM2.5 (lb/day)	PM10 (lb/yr)	PM2.5 (lb/yr)
Crusher (500 tph) with feeder	100%	225	0.00054	0.00010	0.12	0.02	1.46	0.27	13.50	2.50
Side discharge conveyor with magnet	100%	225	0.000046	0.000013	0.01	0.00	0.12	0.04	1.15	0.33
Screen (3-deck, 6' x 24')	120%	270	0.00074	0.00005	0.20	0.01	2.40	0.16	18.50	1.25
Oversize return conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	1.15	0.33
Transfer conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	1.15	0.33
Radial stacker conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	1.15	0.33
Transfer conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	1.15	0.33
Radial stacker conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	1.15	0.33
Total					**0.36**	**0.05**	**4.29**	**0.55**	**38.90**	**5.70**

AP-42 Section 11.19.2 Emission Factors [1,2]

	PM10 (lb/ton)	$PM_{2.5}$ (lb/ton)	Control Method
conveyor transfer point	0.000046	0.000013	water spray
screening	0.00074	0.000050	controlled (lb/ton)
crushing	0.00054	0.00010	controlled (lb/ton)
wet processing	0	0	saturation

[1] Emission factors for controlled emissions as defined in AP-42 Section 11.19.2 dated 8/04 and Section 13.2 for loader drop of aggregate with 3% moisture.

[2] $PM_{2.5}$ emissions based on SCAQMD's "Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds" from October, 2006, Mineral Process Loss: Loading and Unloading Bulk Materials and Mineral

Dust Emissions From Activities Related to Future Asphalt and Concrete Processing (Years 0 - 30)

	Project Emissions		Mitigated Emissions	
	PM10	PM2.5	PM10	PM2.5
Hourly (lb/hr)	0.36	0.05	0.36	0.05
Daily (lb/day)	4.29	0.55	4.29	0.55
Annual (lb/yr)	311.20	45.60	311.20	45.60

Activity Levels

Throughput (tons/hr)	225
Operation (hr/day)	12
Production (tons/year)	200,000

Recycle Plant Fugitive Dust Emissions Calculations

Equipment	Percent of Plant Feed Rate	Rate (ton/hr)	PM10 (lb/ton)	PM2.5 (lb/ton)	PM10 (lb/hr)	PM2.5 (lb/hr)	PM10 (lb/day)	PM2.5 (lb/day)	PM10 (lb/yr)	PM2.5 (lb/yr)
Crusher (500 tph) with feeder	100%	225	0.00054	0.00010	0.12	0.02	1.46	0.27	108.00	20.00
Side discharge conveyor with magnet	100%	225	0.000046	0.000013	0.01	0.00	0.12	0.04	9.20	2.60
Screen (3-deck, 6' x 24')	120%	270	0.00074	0.00005	0.20	0.01	2.40	0.16	148.00	10.00
Oversize return conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Transfer conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Radial stacker conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Transfer conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Radial stacker conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Total					**0.36**	**0.05**	**4.29**	**0.55**	**311.20**	**45.60**

AP-42 Section 11.19.2 Emission Factors [1,2]

	PM10 (lb/ton)	$PM_{2.5}$ (lb/ton)	Control Method
conveyor transfer point	0.000046	0.000013	water spray
screening	0.00074	0.000050	controlled (lb/ton)
crushing	0.00054	0.00010	controlled (lb/ton)
wet processing	0	0	saturation

[1] Emission factors for controlled emissions as defined in AP-42 Section 11.19.2 dated 8/04 and Section 13.2 for loader drop of aggregate with 3% moisture.

[2] $PM_{2.5}$ emissions based on SCAQMD's "Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds" from October, 2006, Mineral Process Loss: Loading and Unloading Bulk Materials and Mineral

Dust Emissions From Activities Related to Future Asphalt and Concrete Processing (Years 0 - 30)

	Project Emissions		Mitigated Emissions	
	PM10	**PM2.5**	**PM10**	**PM2.5**
Hourly (lb/hr)	0.36	0.05	0.36	0.05
Daily (lb/day)	4.29	0.55	4.29	0.55
Annual (lb/yr)	311.20	45.60	311.20	45.60

Activity Levels

Throughput (tons/hr)	225
Operation (hr/day)	12
Production (tons/year)	200,000

Recycle Plant Fugitive Dust Emissions Calculations

Equipment	Percent of Plant Feed Rate	Rate (ton/hr)	PM10 (lb/ton)	PM2.5 (lb/ton)	PM10 (lb/hr)	PM2.5 (lb/hr)	PM10 (lb/day)	PM2.5 (lb/day)	PM10 (lb/yr)	PM2.5 (lb/yr)
Crusher (500 tph) with feeder	100%	225	0.00054	0.00010	0.12	0.02	1.46	0.27	108.00	20.00
Side discharge conveyor with magnet	100%	225	0.000046	0.000013	0.01	0.00	0.12	0.04	9.20	2.60
Screen (3-deck, 6' x 24')	120%	270	0.00074	0.00005	0.20	0.01	2.40	0.16	148.00	10.00
Oversize return conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Transfer conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Radial stacker conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Transfer conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Radial stacker conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Total					**0.36**	**0.05**	**4.29**	**0.55**	**311.20**	**45.60**

AP-42 Section 11.19.2 Emission Factors [1,2]

	PM10 (lb/ton)	$PM_{2.5}$ (lb/ton)	Control Method
conveyor transfer point	0.000046	0.000013	water spray
screening	0.00074	0.000050	controlled (lb/ton)
crushing	0.00054	0.00010	controlled (lb/ton)
wet processing	0	0	saturation

[1] Emission factors for controlled emissions as defined in AP-42 Section 11.19.2 dated 8/04 and Section 13.2 for loader drop of aggregate with 3% moisture.
[2] $PM_{2.5}$ emissions based on SCAQMD's "Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds" from October, 2006, Mineral Process Loss: Loading and Unloading Bulk Materials and

Dust Emissions From Activities Related to Baseline Asphalt and Concrete Processing
CalEEMod Genset Emissions Estimation

Equiptment	Year	HP	Load Factor
Generator Sets	2018	750	0.74

	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4	
g/hpr-hr	30.5	0.2	1.0	2.4	0.0	0.1	0.1	568.3	0.0	
g/hr	16,914.2	119.3	570.5	1,315.4	2.8	38.9	38.9	315,405.9	10.5	
g/yr	1,879,353.3	13,258.3	63,393.3	146,150.0	308.3	4,316.7	4,316.7	35,045,105.0	1,171.7	
lb/hr	37.3	0.3	1.3	2.9	0.0	0.1	0.1	695.4	0.0	696.0
lb/yr	4,143.3	29.2	139.8	322.2	0.7	9.5	9.5	77,261.2	2.6	77,333.6
lb/day	447.5	3.2	15.1	34.8	0.1	1.0	1.0	8344.2	0.3	8,352.0

Dust Emissions From Activities Related to Future Asphalt and Concrete Processing (Years 0 - 30)
CalEEMod Genset Emissions Estimation

Equiptment	Year	HP	Load Factor
Generator Sets	2019	750	0.74

	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
g/hpr-hr	28.7	0.2	1.0	2.1	0.0	0.1	0.1	568.3	0.0
g/hr	15,914.6	112.1	563.3	1,167.7	2.8	34.4	34.4	315,405.9	10.0
g/yr	14,146,333.3	99,653.3	500,733.3	1,037,973.3	2,466.7	30,586.7	30,586.7	280,360,840.0	8,880.0
lb/hr	35.1	0.2	1.2	2.6	0.0	0.1	0.1	695.4	0.0
lb/yr	31,187.3	219.7	1,103.9	2,288.3	5.4	67.4	67.4	618,089.9	19.6
lb/day	421.03	2.97	14.90	30.89	0.07	0.91	0.91	8344.21	0.26

Dust Emissions From Activities Related to Future Asphalt and Concrete Processing (Years 0 - 30)
CalEEMod Genset Emissions Estimation

Equiptment	Year	HP	Load Factor
Generator Sets	2049	750	0.74

	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
g/hpr-hr	15.0	0.1	1.0	0.3	0.0	0.0	0.0	568.3	0.0
g/hr	8,323.3	58.8	542.8	153.7	2.8	5.0	5.0	315,406.5	5.0
g/yr	7,398,520.0	52,293.3	482,480.0	136,653.3	2,466.7	4,440.0	4,440.0	280,361,333.3	4,440.0
lb/hr	18.3	0.1	1.2	0.3	0.0	0.0	0.0	695.4	0.0
lb/yr	16,310.9	115.3	1,063.7	301.3	5.4	9.8	9.8	618,090.9	9.8
lb/day	220.20	1.56	14.36	4.07	0.07	0.13	0.13	8344.23	0.13

AP-42 Table 11.12-6 Footnote a: Composition of one yard of concrete	
Material	**Weight (lb)**
Coarse Aggregate	1865
Sand	1428
Cement	491
Cement Supplement	73
Water	167
Sum	4024
Tons Concrete per yard	2.012

Per Email from John Buada Dated April 24 2018	
Cubic Yards Concrete Per load	9.5

Estimated	
Max Trucks Per Hour Load Out	20

Data Type/Units	Data	Source
BSFC (lbs fuel/hp-hr):	0.367	(based on offroad 2011)
Density of Diesel Fuel (lb/gal):	7.05	(based on AP-42 App A)
C02 Content of Diesel Fuel (kg/gal)	10.15	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
CH4 Content of Diesel Fuel (kg/gal)	0.0015	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
NO2 Content of Diesel Fuel (kg/gal)	0.0001	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
CH4 Emissions Per VMT (g/VMT)	0.0051	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
NO2 Emissions per VMT (g/VMT)	0.0048	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
CO2e CH4	28	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
CO2e N20	265	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
Density of Dry Packed Gravel	120	AP-42 Appendix A
Fuel Sulfur Content	15	(CARB Ultra Low Diesel Standard)
CO2 Emissions, lbs/kWh, CAMX Region	0.72412	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
CH4 Emissions, lbs/kWh, CAMX Region	0.0000302	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
N2O Emissions, lbs/kWh, CAMX Region	0.0000081	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
Ready Mix Plant electricity use, kWh/yd^3	3.86	A cradle to Gate Life Cycle Assesment of Ready Mixed Concrete Manufacture by NRMCA Members (http://www.nrmca.org/sustainability/EPDProgram/Downloads/NRMCA%20LCA%20Project%20Report_v1.0b_20140929.pdf)

Basline Unpaved Road Emission Factors

Unpaved Road emissions factor from AP42 Section 13.2.2

EF (lb/VMT)= 4.9 * (S/12)$^{0.7}$ * (W/3)$^{0.45}$

	Mining Haul Trucks		On-road Trucks	
	PM10	**PM2.5**	**PM10**	**PM2.5**
S = silt content (%) =	4.8		4.8	
W_l = loaded truck wt (tons) =	120		40	
W_u = unloaded truck wt (tons) =	50		15	
W = avg truck weight	85		27.5	
EF (lb/VMT) =	11.62	2.46	6.99	1.48
Baseline C.E. =	80%	80%	80%	80%
Baseline EF (lb/VMT) =	**2.32**	**0.49**	**1.40**	**0.30**

Silt content based on mean Sand and Gravel Processing from AP-42 Table 13.2.2-1.
Control efficiency for unpaved roads in baseline is 80% for watering.
PM2.5 emissions are 21.2% of PM10 for unpaved roads (SCAQMD *Updated CEIDARS Table).*

Future Unpaved Road Emission Factors

Unpaved Road emissions factor from AP42 Section 13.2.2

EF (lb/VMT)= 4.9 * (S/12)$^{0.7}$ * (W/3)$^{0.45}$

	Mining Haul Trucks		On-road Trucks	
	PM10	**PM2.5**	**PM10**	**PM2.5**
S = silt content (%) =	4.8		4.8	
W_l = loaded truck wt (tons) =	120		40	
W_u = unloaded truck wt (tons) =	50		15	
W = avg truck weight	85		27.5	
EF (lb/VMT) =	11.62	2.46	6.99	1.48
Future C.E. =	80%	80%	80%	80%
Future EF (lb/VMT) =	**2.32**	**0.49**	**1.40**	**0.30**

Silt content based on mean Sand and Gravel Processing from AP-42 Table 13.2.2-1.
PM2.5 emissions are 21.2% of PM10 for unpaved roads (SCAQMD *Updated CEIDARS Table).*

Basline Paved Road Emission Factors

Paved Road emissions factor from AP42 Section 13.2.1

EF (lb/VMT)= k * $(sL)^{0.91}$ * $(W)^{1.02}$

	Mining Haul Trucks		On-road Trucks	
	PM10	**PM2.5**	**PM10**	**PM2.5**
k= particle size multiplier (lb/vmt) =	0.0022	0.00054	0.0022	0.00054
sL = road surface silt loading (g/m^2) =	0.2	0.2	0.2	0.2
W_l = loaded truck wt (tons) =	120	120	40	40
W_u = unloaded truck wt (tons) =	50	50	15	15
W = avge truck weight	85.00	85.00	27.50	27.50
EF (lb/VMT) =	0.05	0.01	0.01	0.00
Baseline C.E. =	80%	80%	80%	80%
Baseline EF (lb/VMT) =	**0.0094**	**0.0023**	**0.0030**	**0.0007**

Particle size multiplier based on AP-42 Table 13.2.1-1
Silt Loading based on ADT of 500 - 5000 from AP-42 Table 13.1-2
Control efficiency for unpaved roads in baseline is 80% for watering.

Future Paved Road Emission Factors

Paved Road emissions factor from AP42 Section 13.2.1

EF (lb/VMT)= k * $(sL)^{0.91}$ * $(W)^{1.02}$

	Mining Haul Trucks		On-road Trucks	
	PM10	**PM2.5**	**PM10**	**PM2.5**
k= particle size multiplier (lb/vmt) =	0.0022	0.00054	0.0022	0.00054
sL = road surface silt loading (g/m^2) =	0.2	0.2	0.2	0.2
W_l = loaded truck wt (tons) =	120	120	40	40
W_u = unloaded truck wt (tons) =	50	50	15	15
W = avge truck weight	85.00	85.00	27.50	27.50
EF (lb/VMT) =	0.05	0.01	0.01	0.00
Future C.E. =	80%	80%	80%	80%
Future EF (lb/VMT) =	**0.0094**	**0.0023**	**0.0030**	**0.0007**

Particle size multiplier based on AP-42 Table 13.2.1-1
Silt Loading based on ADT of 500 - 5000 from AP-42 Table 13.1-2

Baseline GHG Emission Summary			
Activity	**Units**	**Value**	**Source Tab**
On-site On-Road	MT CO2e/yr	954.0	Onsite Yearly VMT & EMS (10)
On-Site Off-Road		5,212.1	Offroad Engine EMS (7)
Off-site On-road Trucks		5,358.6	Regional Offsite Emissions (8)
Employee Off-Site On-Road		292.7	Total Annual Emissions (2a)
Stationary		-	Asphalt Dryer (14a) and Asphalt Plant Oil Heaters (14c)
Electricity		1,919.0	GHG Emissions (21)
Total		13,736.3	

Operation GHG Emission Summary			
Activity	**Units**	**Value**	**Source Tab**
On-site On-Road	MT CO2e/yr	927.2	Onsite Yearly VMT & EMS (10)
On-Site Off-Road (1)		4,236.2	Offroad Engine EMS (7)
Off-site On-road Trucks		6,067.9	Regional Offsite Emissions (8)
Employee Off-Site On-Road		301.8	Total Annual Emissions (2a)
Stationary		8,394.4	Asphalt Dryer (14a) and Asphalt Plant Oil Heaters (14c)
Electricity		1,373.0	GHG Emissions (21)
Total		21,300.6	

Notes: (1) Off-road units comply with offroad engine rules which require renewable diesel and adjusted by 50% (see Appendix L).

Project GHG Emission Summary		
Baseline	MT CO2e/yr	13,736.3
Operation	MT CO2e/yr	21,300.6
Project	MT CO2e/yr	**7,564.3**

Electricty Calculations

Aggregate Plant

Parameter	Unit	Value	Source
Baseline Plant Horsepower	hp	1625	
Project Plant Horsepower	hp	3456.5	
Operation Hours	hour/day	16	
Operation Days	days/yr	312	
hp to kW Conversion	MW/hp	0.00074	
Baseline CO2 Conversion	lb CO2/MWh	641	CalEEMod 2016 User Guide (CalEEMod Appendix D: Default Data Tables, 2017)
Project CO2 Conversion	lb CO2/MWh	206	CalEEMod 2020 User Guide (CalEEMod Appendix D: Default Data Tables, 2021)
Metric Ton Conversion	MT/lb	0.000453593	

Project Stage	Plant Horsepower hp	CO2 Conversion lb CO2/MWh	Electricity Use MWh/yr	GHG Emissions CO2e/yr
Baseline	1,625.0	641.0	6,002.9	1,745.4
Project	3,456.5	206.0	12,768.6	1,193.1

Ready Mix Plant

Parameter	Unit	Value	Source
Baseline Throughput	yd^3/yr	189550	Tab 1
Project Max. Throughput	yd^3/yr	300000	Tab 1
Electricity Conversion	kWh/yd^3	3.15	Portland Cement Association, Life Cycle Inventory of Portland Cement Concrete 2007 (http://large.stanford.edu/courses/2016/ph240/pourshafeie2/docs/marceau-2007.pdf)
Baseline CO2 Conversion	lb CO2/MWh	641	CalEEMod 2016 User Guide (CalEEMod Appendix D: Default Data Tables, 2017)
Project CO2 Conversion	lb CO2/MWh	206	CalEEMod 2020 User Guide (CalEEMod Appendix D: Default Data Tables, 2021)
Metric Ton Conversion	MT/lb	0.000453593	

Project Stage	Plant Throughput yd^3/yr	CO2 Conversion lb CO2/MWh	Electricity Use MWh/yr	GHG Emissions CO2e/yr
Baseline	189,550.0	641.0	597.1	173.6
Project	300,000.0	206.0	945.0	88.3

Asphalt Plant

Parameter	Unit	Value	Source
Baseline Throughput	ton/yr	0	Tab 1
Project Max. Throughput	ton/yr	500,000	Tab 1
Electricity Conversion	kWh/ton	1.96	San Joaquin Valley Unified Air Pollution Control District Best Performance Standard 2010 (https://archive.valleyair.org/Programs/CCAP/bps/DRAFT_Modified_Continuous_Asphalt_Plant_Dryers.pdf)
Baseline CO2 Conversion	lb CO2/MWh	641	CalEEMod 2016 User Guide (CalEEMod Appendix D: Default Data Tables, 2017)
Project CO2 Conversion	lb CO2/MWh	206	CalEEMod 2020 User Guide (CalEEMod Appendix D: Default Data Tables, 2021)
Metric Ton Conversion	MT/lb	0.000453593	

Project Stage	Plant Throughput ton/yr	CO2 Conversion lb CO2/MWh	Electricity Use MWh/yr	GHG Emissions CO2e/yr
Baseline	-	641.0	-	-
Project	500,000.0	206.0	980.0	91.6

Construction

Source: Construction GHG emissions gathered from CalEEMod (Appendix F)

Construction Phase	GHG Emissions MT CO2e/yr
Site Preparation	24.55
Grading	61.07
Building Construction	93.78
Paving*	17.25
Total	**196.65**

Amortized Across 30-Year Project Lifespan (MT CO2e/yr)
6.6

*An additional 10 MT CO2e/yr Paving was conservatively assumed to represent the entire lifetime of the Project

Construction Schedule

Phase Name	Phase Type	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	5	10	--
Grading	Grading	5	20	10 Acres Graded
Building Construction	Building Construction	5	196	--
Paving	Paving	5	10	--

Table ES8

Activity		CO_2e (MT/yr)
Construction Phase (Maximum Year)		6.6
Operation Phase		21,301
On-site On-road Sources (a)	927.2	
On-site Offroad Sources (b)	4,236.2	
Off-site On-road Trucks	6,067.9	
Employee Off-site On-road Sources (d)	301.8	
Stationary Sources (Asphalt Plant) (e)	8,394.4	
Electricity (f)	1,373.0	
Baseline Condition		13,736
On-site On-road Sources (a)	954.0	
On-site Offroad Sources (b)	5,212.1	
Off-site On-road Trucks	5,358.6	
Employee Off-site On-road Sources (d)	292.7	
Stationary Sources (e)	-	
Electricity (g)	1,919.0	
Project Emissions Total (Operation Phase Minus Baseline Condition)		7,564
GHG Threshold of Significance		10,000
Significant?		No

Notes: (1) Off-road units comply with offroad engine rules which require renewable diesel and adjusted by 50% (see Appendix L).
(2) Off-site on-road units evaluated based on incremental share of regional increase in emissions (see Appendix J).

APPENDIX H MITIGATED PROJECT EMISSIONS

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		Baseline								
		Ton/hr	Ton/day	ton/yr	ton/hour material imports	ton/year material imports	Gal/year diesel imports	Paved Trip Length (miles)	Unpaved Trip Length (miles)	trips/day	trips/yr
	Plant Site										
Plant Site	Asphalt Plant										
	Ready Mix Plant	382	2,548	381,375	45	44,544 (b)		0.31	0.16	289	43,206
	Recycle Plant	225	1,500	25,000	225	25,000	3210.17	0.31	0.28	242	2,000
	Aggregates Plant	475	6,000	1,580,413				0.31	0.28	480	84,922
	Mined Aggregate										
	Site Services, Visitors, Mobile Equipment Diesel Delivery						263,262 (d)	0.31	0.28	4	1,072
	Employee Trips									108	26,926
	Quarry Site										
Quarry Site	Asphalt Plant										
	Ready Mix Plant										
	Recycle Plant										
	Aggregates Plant										
	Mined Aggregate	475	6,000	1,580,413				0	0.85	480	112,500
	Site Services, Visitors, Mobile Equipment Diesel Delivery										
	Employee Trips									2	500

Shaded Cells represent lack of source or source with de mimimis emissions
Production based on email from John Buada Dated 7/18/19
Annual Trips and Baseline aggregates production based on TIS Tables 4.1 - 4.4 Dated 11/15/19 (Appendix C)
Daily Trips calculated based on maximum day and may differ from TIS tables
Site Services and Visitor Trips Include Diesel Delivery for Onsite Mobile Equiptment
Trip lenghts based on Google Earth Measurments and Email from John Buada Dated 5/3/18
Site Services and Visitor Trips Devided by site based on produced
tonnage for Years 0 - 30, and are assumed to take the longest possible path
Assumes 1 Asphalt plant diesel delivery and 2 mobile equiptment diesel deliveries in Max Day
a - based on 0.05 tons liquid asphalt/ton asphalt
b - based on 0.140 ton cement and supplment/ton concrete

d - based on historic peak sales document
General Assumptions:

9.5	yards RMC per load
27	tons asphalt oil per load
27	tons cement and/or supplement per load
25	tons asphalt per load
25	tons aggregate or recycled material per load
7500	gal diesel per load
2.012	tons/yd3 concrete
1.15	Scaling factor to account for 15% waste

		Years 0 - 30									
		ton/hr	ton/day	ton/yr	ton/hour material imports	ton/year material imports	Gal/year diesel imports	Paved Trip Length (miles)	Unpaved Trip Length (miles)	trips/day	trips/yr
	Plant Site										
Plant Site	Asphalt Plant	500	3,333	500,000	25	25,000 (a)	0 (c)	0.27	0.24	281	41,852
	Ready Mix Plant	382	2,548	603,600	45	70,500 (b)		0.31	0.16	289	68,380
	Recycle Plant	225	1,500	200,000	225	200,000	25,681	0.31	0.28	242	32,007
	Aggregates Plant	475	4,000	275,000				0.31	0.28	320	22,000
	Mined Aggregate	800	4,000	275,000				0	0.2	320	11,000
	Site Services, Visitors, Mobile Equipment Diesel Delivery						209,175 (d)	0.31	0.28	9	1,362
	Employee Trips									94	24,252
	Quarry Site										
Quarry Site	Asphalt Plant										
	Ready Mix Plant										
	Recycle Plant										
	Aggregates Plant	1,100	12,000	2,725,000				0.39	0.31	960	218,000
	Mined Aggregate	1,100	12,000	2,725,000				0	0.85	960	218,000
	Site Services, Visitors, Mobile Equipment Diesel Delivery						361,080 (d)	0.39	0.31	9	1,228
	Employee Trips									24	6,000

Shaded Cells represent lack of source or source with de mimimis emissions
Production based on email from John Buada Dated 7/18/19
Baseline trips and annual aggregates production based on TIS Tables 4.1 - 4.4 Dated 11/15/19 (Appendix C)
Trips conservatively estimated based on potential materials sales/usage and may differ from TIS Tables
Site Services and Visitor Trips Include Diesel Delivery for Onsite Mobile Equiptment
Trip lenghts based on Google Earth Measurments and Email from John Buada Dated 5/3/18
Site Services and Visitor Trips Devided by site based on produced
tonnage for Years 0 - 30, and are assumed to take the longest possible path
Assumes 2 mobile equiptment diesel deliveries in Max Day
a - based on 0.05 tons liquid asphalt/ton asphalt
b - based on 0.140 ton cement and supplment/ton concrete
c - assumes natural gas fired asphalt plant
d - assumes 0.132506377 gal diesel used in mobile equiptment per ton of total export scaled from baseline
General Assumptions:

9.5	yards RMC per load
27	tons asphalt oil per load
27	tons cement and/or supplement per load
25	tons asphalt per load
25	tons aggregate or recycled material per load
7500	gal diesel per load
2.012	tons/yd3 concrete

		Years 31 - 100									
		ton/hr	ton/day	ton/yr	ton/hour material imports	ton/year material imports	Gal/year diesel imports	Paved Trip Length (miles)	Unpaved Trip Length (miles)	trips/day	trips/yr
	Plant Site										
Plant Site	Asphalt Plant										
	Ready Mix Plant										
	Recycle Plant										
	Aggregates Plant										
	Mined Aggregate										
	Site Services, Visitors, Mobile										
	Equipment Diesel Delivery										
	Employee Trips										
	Quarry Site										
Quarry Site	Asphalt Plant	500	3,333	500,000	25	25,000 (a)	0 (c)	0.36	0.00	280	41,852
	Ready Mix Plant	382	2,548	603,600	45	70,500 (b)		0.48	0.00	289	68,380
	Recycle Plant	225	1,500	200,000	225	200,000	25,681	0.39	0.31	240	32,007
	Aggregates Plant	1,100	14,000	3,000,000				0.39	0.31	1,120	240,000
	Mined Aggregate	1,100	14,000	3,000,000				0.00	0.20	1,120	240,000
	Site Services, Visitors, Mobile										
	Equipment Diesel Delivery						570,254 (d)	0.39	0.31	10	1,388
	Employee Trips									118	30,252

Shaded Cells represent lack of source or source with de mimimis emissions
Production based on email from John Buada Dated 7/18/19
Baseline trips and annual aggregates production based on TIS Tables 4.1 - 4.4 Dated 11/15/19 (Appendix C)
Trips conservatively estimated based on potential materials sales/usage and may differ from TIS Tables
Site Services and Visitor Trips Include Diesel Delivery for Onsite Mobile Equiptment
Trip lenghts based on Google Earth Measurments and Email from John Buada Dated 5/3/18
Site Services and Visitor Trips Devided by site based on produced
tonnage for Years 0 - 30, and are assumed to take the longest possible path
Assumes 2 mobile equiptment diesel deliveries in Max Day
a - based on 0.05 tons liquid asphalt/ton asphalt
b - based on 0.140 ton cement and supplment/ton concrete
c - assumes natural gas fired asphalt plant
d - assumes 0.132506377 gal diesel used in mobile equiptment per ton of total export scaled from baseline
General Assumptions:

9.5	yards RMC per load
27	tons asphalt oil per load
27	tons cement and/or supplement per load
25	tons asphalt per load
25	tons aggregate or recycled material per load
7500	gal diesel per load
2.012	tons/yd3 concrete

Plant Site

(units followed by * are permitted)	Baseline (lbs/year) ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	-	-	-	-	-	-	-	-
Asphalt Plant Dryer*	-	-	-	-		-	-	-
Asphalt Plant Silos*	-	-	-	-		-	-	-
Asphalt Plant Oil Heater*	-	-	-	-		-	-	-
Asphalt Plant Fugitive Dust*				-		-	-	
Asphalt Plant Onsite Haul	-	-	-	-	-	-	-	-
Ready Mix Plant Total	43.7	109.8	473.8	10,088.9	16.3	10,105.2	2,180.8	0.4
Ready Mix Plant*				381.1		381.1	111.3	
Ready Mix Onsite Haul	43.7	109.8	473.8	9,707.8	16.3	9,724.1	2,069.5	0.4
Recycle Plant Total	31.8	146.1	349.7	823.9	10.5	834.4	182.3	0.7
Recycle Plant*				38.9		38.9	5.7	
Recycle Engine*	29.2	139.8	322.2		9.5	9.5	9.5	0.7
Recycle Plant Onsite Haul	2.5	6.4	27.5	785.0	0.9	786.0	167.1	0.0
Aggregates Plant Total	107.9	270.8	1,169.1	49,538.9	40.1	49,579.1	11,827.0	0.9
Aggregates Processing*				4,428.3		4,428.3	1,293.1	
Total Aggregates Mining								
Quarrying Fugitive Ems.								
Offroad Engines								
Aggregates Drops				236.8		236.8	69.1	
Aggregates Storage*				11,541.3		11,541.3	3,370.1	
Aggregates Plant Onsite Haul	107.9	270.8	1,169.1	33,332.5	40.1	33,372.6	7,094.8	0.9
Visitors, Diesel Delivery Onsite	1.4	3.4	14.8	420.8	0.5	421.3	89.6	0.0
Employee Commute	962.8	12,132.6	753.7		31.7	31.7	14.8	2.7
Total Permitted	29.2	139.8	322.2	16,389.6	9.5	16,399.1	4,789.6	0.7
Total Permit-Exempt	155.5	390.4	1,685.2	44,482.9	57.9	44,540.8	9,490.1	1.3
Total Plant Site	**1,147.5**	**12,662.7**	**2,761.1**	**60,872.5**	**99.1**	**60,971.6**	**14,294.4**	**4.7**
Plant Site Models (g/s)	**0.017**	**0.183**	**0.040**	**0.878**	**0.001**	**0.879**	**0.206**	**0.000**

Plant Site

(units followed by * are permitted)	Years 0 - 30 (lbs/year) ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	12,248.4	67,683.9	4,897.5	8,901.4	6.6	8,908.0	2,076.2	1,710.3
Asphalt Plant Dryer*	4,100.0	65,000.0	4,371.4	1,244.3	-	1,244.3	291.6	1,700.0
Asphalt Plant Silos*	8,055.0	1,265.0	-	27.8	-	27.8	27.8	-
Asphalt Plant Oil Heater*	91.9	1,402.8	425.9	126.9	-	126.9	126.9	10.0
Asphalt Plant Fugitive Dust*				462.0		462.0	134.9	
Asphalt Plant Onsite Haul	1.5	16.1	100.3	7,040.5	6.6	7,047.1	1,495.0	0.3
Ready Mix Plant Total	2.3	24.2	151.0	8,285.2	9.9	8,295.1	1,808.4	0.5
Ready Mix Plant*				603.1		603.1	176.1	
Ready Mix Onsite Haul	2.3	24.2	151.0	7,682.1	9.9	7,692.0	1,632.3	0.5
Recycle Plant Total	221.1	1,118.1	2,377.0	6,592.7	73.3	6,665.9	1,446.9	5.7
Recycle Plant*				311.2		311.2	45.6	
Recycle Engine*	219.7	1,103.9	2,288.3		67.4	67.4	67.4	5.4
Recycle Plant Onsite Haul	1.4	14.2	88.7	6,281.5	5.8	6,287.3	1,333.8	0.3
Aggregates Plant Total	919.8	5,810.1	10,734.3	6,971.8	28.1	6,999.9	1,715.9	15.2
Aggregates Processing*				1,022.0		1,022.0	298.4	
Total Aggregates Mining	918.9	5,800.3	10,673.3	577.5	24.1	601.6	192.7	15.1
Quarrying Fugitive Ems.				577.5		577.5	168.6	
Offroad Engines	918.9	5,800.3	10,673.3		24.1	24.1	24.1	15.1
Aggregates Drops				50.6		50.6	14.8	
Aggregates Storage*				1,004.1		1,004.1	293.2	
Aggregates Plant Onsite Haul	0.9	9.8	61.0	4,317.6	4.0	4,321.6	916.8	0.2
Visitors, Diesel Delivery Onsite	0.1	0.6	3.8	267.3	0.2	267.5	56.8	0.0
Employee Commute	743.0	9,048.6	466.0		27.7	27.7	12.3	2.3
Total Permitted	12,466.5	68,771.7	7,085.6	4,801.4	67.4	4,868.9	1,462.0	1,715.5
Total Permit-Exempt	925.1	5,865.2	11,078.0	26,217.0	50.7	26,267.7	5,642.1	16.3
Total Plant Site	**14,134.6**	**83,685.5**	**18,629.6**	**31,018.4**	**145.8**	**31,164.2**	**7,116.4**	**1,734.0**
Plant Site Models (g/s)	**0.204**	**1.207**	**0.269**	**0.447**	**0.002**	**0.449**	**0.103**	**0.025**

Plant Site

(units followed by * are permitted)	Years 31 - 100 (lbs/year)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total								
Asphalt Plant Dryer*								
Asphalt Plant Silos*								
Asphalt Plant Oil Heater*								
Asphalt Plant Fugitive Dust*								
Asphalt Plant Onsite Haul								
Ready Mix Plant Total								
Ready Mix Plant*								
Ready Mix Onsite Haul								
Recycle Plant Total								
Recycle Plant*								
Recycle Engine*								
Recycle Plant Onsite Haul								
Aggregates Plant Total								
Aggregates Processing*								
Total Aggregates Mining								
Quarrying Fugitive Ems.								
Offroad Engines								
Aggregates Drops								
Aggregates Storage*								
Aggregates Plant Onsite Haul								
Visitors, Diesel Delivery Onsite								
Employee Commute								
Total Permitted								
Total Permit-Exempt								
Total Plant Site								
Plant Site Models (g/s)								

Quarry Site

	Baseline (lbs/year)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total								
Asphalt Plant Dryer*								
Asphalt Plant Silos*								
Asphalt Plant Oil Heater*								
Asphalt Plant Fugitive Dust*								
Asphalt Plant Onsite Haul								
Ready Mix Plant Total								
Ready Mix Plant*								
Ready Mix Onsite Haul								
Recycle Plant Total								
Recycle Plant*								
Recycle Engine*								
Recycle Plant Onsite Haul								
Aggregates Plant Total	9,701.0	53,614.2	125,012.7	166,206.5	5,233.5	171,440.0	42,691.3	110.5
Aggregates Processing*								
Aggregates Mining Total	9,496.3	53,100.3	122,794.6	33,261.4	5,157.4	38,418.7	14,453.3	108.7
Quarrying Fugitive Ems.				33,261.4		33,261.4	9,712.3	
Offroad Engines	9,496.3	53,100.3	122,794.6		5,157.4	5,157.4	4,741.0	108.7
Blasting								
Aggregates Drops								
Aggregates Storage*								
Aggregates Plant Onsite Haul	204.7	513.9	2,218.1	132,945.1	76.2	133,021.3	28,238.0	1.8
Visitors, Diesel Delivery Onsite								
Employee Commute	17.9	225.3	14.0		0.6	0.6	0.3	0.0
Total Permitted	-	-	-	-	-	-	-	-
Total Permit-Exempt	9,701.0	53,614.2	125,012.7	166,206.5	5,233.5	171,440.0	42,691.3	110.5
Total Quarry Site	**9,718.9**	**53,839.5**	**125,026.7**	**166,206.5**	**5,234.1**	**171,440.6**	**42,691.6**	**110.6**
Quarry Site Models (total g/s)	**0.140**	**0.777**	**1.803**	**2.397**	**0.075**	**2.473**	**0.616**	**0.002**

Quarry Site

	Years 0 - 30 (lbs/year)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total								
Asphalt Plant Dryer*								
Asphalt Plant Silos*								
Asphalt Plant Oil Heater*								
Asphalt Plant Fugitive Dust*								
Asphalt Plant Onsite Haul								
Ready Mix Plant Total								
Ready Mix Plant*								
Ready Mix Onsite Haul								
Recycle Plant Total								
Recycle Plant*								
Recycle Engine*								
Recycle Plant Onsite Haul								
Aggregates Plant Total	9,116.2	148,877.6	129,636.9	74,931.6	285.5	75,217.0	18,382.0	2,876.4
Aggregates Processing*				10,127.3		10,127.3	2,957.2	
Aggregates Mining Total	9,105.2	148,763.6	128,925.2	6,972.1	238.6	7,210.7	2,311.1	2,874.1
Quarrying Fugitive Ems.				6,972.1		6,972.1	2,072.4	
Offroad Engines	9,105.2	57,476.1	105,762.7		238.6	238.6	238.6	149.1
Blasting		91,287.5	23,162.5					2,725.0
Aggregates Drops				501.4		501.4	146.4	
Aggregates Storage*				9,949.9		9,949.9	2,905.4	
Aggregates Plant Onsite Haul	11.0	114.0	711.7	47,380.8	46.8	47,427.6	10,062.0	2.3
Visitors, Diesel Delivery Onsite	0.1	0.6	4.0	266.9	0.3	267.2	56.7	0.0
Employee Commute	183.8	2,238.6	115.3		6.8	6.8	3.0	0.6
Total Permitted	-	-	-	20,077.3	-	20,077.3	5,862.6	-
Total Permit-Exempt	9,116.3	148,878.2	129,640.9	55,121.2	285.7	55,406.9	12,576.2	2,876.4
Total Quarry Site	**9,300.1**	**151,116.9**	**129,756.2**	**75,198.4**	**292.6**	**75,491.0**	**18,441.8**	**2,877.0**
Quarry Site Models (total g/s)	**0.134**	**2.180**	**1.871**	**1.085**	**0.004**	**1.089**	**0.266**	**0.041**

Quarry Site

	Years 31 - 100 (lbs/year)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	12,256.9	67,791.9	4,866.0	1,892.8	6.0	1,898.8	593.2	1,710.4
Asphalt Plant Dryer*	4,100.0	65,000.0	4,371.4	1,244.3	-	1,244.3	291.6	1,700.0
Asphalt Plant Silos*	8,055.0	1,265.0	-	27.8	-	27.8	27.8	-
Asphalt Plant Oil Heater*	91.9	1,402.8	425.9	126.9	-	126.9	126.9	10.0
Asphalt Plant Fugitive Dust*				462.0		462.0	134.9	
Asphalt Plant Onsite Haul	10.1	124.1	68.7	31.9	6.0	37.8	12.0	0.4
Ready Mix Plant Total	1.7	19.0	68.9	651.7	10.9	662.6	14.3	0.4
Ready Mix Plant*				603.1		603.1		
Ready Mix Onsite Haul	1.7	19.0	68.9	48.5	10.9	59.5	14.3	0.4
Recycle Plant Total	116.5	1,076.7	348.4	7,267.7	17.3	7,284.9	1,532.9	5.7
Recycle Plant*				311.2		311.2	45.6	
Recycle Engine*	115.3	1,063.7	301.3		9.8	9.8	9.8	5.4
Recycle Plant Onsite Haul	1.2	13.0	47.2	6,956.5	7.5	6,964.0	1,477.5	0.3
Aggregates Plant Total	6,483.0	149,689.8	40,178.1	82,381.1	318.8	82,700.0	20,205.7	3,183.8
Aggregates Processing*				11,149.4		11,149.4	3,255.6	
Aggregates Mining Total	6,474.3	149,592.0	39,824.5	7,549.6	262.7	7,812.3	2,507.5	3,181.8
Quarrying Fugitive Ems.				7,549.6		7,549.6	2,244.8	
Offroad Engines	6,474.3	49,092.0	14,324.5		262.7	262.7	262.7	181.8
Blasting		100,500.0	25,500.0			-		3,000.0
Aggregates Drops				565.8		565.8	165.2	
Aggregates Storage*				10,954.1		10,954.1	3,198.6	
Aggregates Plant Onsite Haul	8.7	97.7	353.6	52,162.4	56.1	52,218.5	11,078.8	2.1
Visitors, Diesel Delivery Onsite	0.1	0.6	2.0	301.7	0.3	302.0	64.1	0.0
Employee Commute	335.0	6,279.3	51.1		29.1	29.1	10.5	2.3
Total Permitted	12,362.1	68,731.5	5,098.5	24,878.7	9.8	24,888.5	7,090.8	1,715.5
Total Permit-Exempt	6,496.0	149,846.5	40,364.9	67,616.3	343.5	67,959.8	15,319.3	3,185.0
Total Quarry Site	**19,193.2**	**224,857.3**	**45,514.5**	**92,495.0**	**382.4**	**92,877.4**	**22,420.5**	**4,902.7**
Quarry Site Models (total g/s)	**0.277**	**3.243**	**0.656**	**1.334**	**0.006**	**1.340**	**0.323**	**0.071**

		Baseline (lbs/year)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Off-site	Non-Employee Vehicles (Haul Trucks)	Impacts assessed based on change in regional activity (Appendix J).							
	Between Sites	436.0	1,094.7	4,725.0	605.2	162.3	767.5	242.5	3.8
	Employee Commutes	980.7	12,357.9	767.7	-	32.3	32.3	15.0	2.7
	Electricity	-		-	-	-	-	-	-
	Total Off-site	**1,416.7**	**13,452.5**	**5,492.7**	**605.2**	**194.6**	**799.8**	**257.6**	**6.5**

PROJECT TOTALS (BOTH SITES)	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Total Permitted	29.2	139.8	322.2	16,389.6	9.5	16,399.1	4,789.6	0.7
Total Permit-Exempt	11,273.2	67,457.1	132,190.6	211,294.6	5,485.9	216,780.6	52,439.0	118.3
Grand Total	11,302.5	67,596.9	132,512.8	227,684.3	5,495.5	233,179.7	57,228.6	119.0
Total Permitted (tons)	0.0	0.1	0.2	8.2	0.0	8.2	2.4	0.0
Total Permit-Exempt (tons)	5.6	33.7	66.1	105.6	2.7	108.4	26.2	0.1
Grand Total (tons)	5.7	33.8	66.3	113.8	2.7	116.6	28.6	0.1
Total Both Sites ton/yr	5.7	33.8	66.3	113.8	2.7	116.6	28.6	0.1
Total Both Sites MT/yr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Net Increase Permitted (tons)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Net Permit-Exempt (tons)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Net Increase MT/yr	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.
Shaded Cells represent lack of source or source with de mimimis emissions

		Years 0 - 30 (lbs/year)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Off-site	Non-Employee Vehicles (Haul Trucks)	19.7	91.2	857.4	ND	ND	23.8	22.7	7.9
	Between Sites	7.3	76.2	475.6	151.3	31.3	182.6	43.6	1.5
	Employee Commutes	926.8	11,287.3	581.3	-	34.5	34.5	15.3	2.8
	Electricity	-	-	-	-	-	-	-	-
	Total Off-site	**953.8**	**11,454.7**	**1,914.2**	**151.3**	**65.8**	**240.9**	**81.7**	**12.2**
	PROJECT TOTALS (BOTH SITES)	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
	Total Permitted	12,466.5	68,771.7	7,085.6	24,878.7	67.4	24,946.1	7,324.6	1,715.5
	Total Permit-Exempt	10,995.2	166,198.0	142,633.1	81,489.5	402.2	81,915.5	18,300.0	2,905.0
	Grand Total	23,461.7	234,969.8	149,718.7	106,368.2	469.6	106,861.6	25,624.5	4,620.4
	Total Permitted (tons)	6.2	34.4	3.5	12.4	0.0	12.5	3.7	0.9
	Total Permit-Exempt (tons)	5.5	83.1	71.3	40.7	0.2	41.0	9.1	1.5
	Grand Total (tons)	11.7	117.5	74.9	53.2	0.2	53.4	12.8	2.3
	Total Both Sites ton/yr	11.7	117.5	74.9	53.2	0.2	53.4	12.8	2.3
	Total Both Sites MT/yr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Net Increase Permitted (tons)	**6.2**	**34.3**	**3.4**	**4.2**	**0.0**	**4.3**	**1.3**	**0.9**
	Net Permit-Exempt (tons)	**-0.1**	**49.4**	**5.2**	**-64.9**	**-2.5**	**-67.4**	**-17.1**	**1.4**
	Net Increase MT/yr	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.
Shaded Cells represent lack of source or source with de mimimis emissions

		Years 31 - 100 (lbs/year)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Off-site	Non-Employee Vehicles (Haul Trucks)	19.7	91.2	857.4	ND	ND	23.8	22.7	7.9
	Between Sites	-	-	-	-	-	-	-	-
	Employee Commutes	335.0	6,279.3	51.1	-	29.1	29.1	10.5	2.3
	Electricity	-	-	-	-	-	-	-	-
	Total Off-site	**354.7**	**6,370.5**	**908.4**	**-**	**29.1**	**52.9**	**33.2**	**10.2**
	PROJECT TOTALS (BOTH SITES)	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
	Total Permitted	12,362.1	68,731.5	5,098.5	24,878.7	9.8	24,888.5	7,090.8	1,715.5
	Total Permit-Exempt	6,850.7	156,217.0	41,273.3	67,616.3	372.6	68,012.7	15,352.5	3,195.2
	Grand Total	19,212.8	224,948.5	46,371.9	92,495.0	382.4	92,901.2	22,443.3	4,910.6
	Total Permitted (tons)	6.2	34.4	2.5	12.4	0.0	12.4	3.5	0.9
	Total Permit-Exempt (tons)	3.4	78.1	20.6	33.8	0.2	34.0	7.7	1.6
	Grand Total (tons)	9.6	112.5	23.2	46.2	0.2	46.5	11.2	2.5
	Total Both Sites ton/yr	9.6	112.5	23.2	46.2	0.2	46.5	11.2	2.5
	Total Both Sites MT/yr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Net Increase Permitted (tons)	**6.2**	**34.3**	**2.4**	**4.2**	**0.0**	**4.2**	**1.2**	**0.9**
	Net Permit-Exempt (tons)	**-2.2**	**44.4**	**-45.5**	**-71.8**	**-2.6**	**-74.4**	**-18.5**	**1.5**
	Net Increase MT/yr	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.

Plant Site

(units followed by * are permitted)	Baseline (lbs/day) ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	-	-	-	-	-	-	-	-
Asphalt Plant Dryer*	-	-	-	-		-	-	-
Asphalt Plant Silos*	-	-	-	-		-	-	-
Asphalt Plant Oil Heater*	-	-	-	-		-	-	-
Asphalt Plant Fugitive Dust*				-		-	-	
Asphalt Plant Onsite Haul	-	-	-	-	-	-	-	-
Ready Mix Plant Total	0.3	0.8	3.3	67.4	0.1	67.5	14.6	0.0
Ready Mix Plant*				2.5		2.5	0.7	
Ready Mix Onsite Haul	0.3	0.8	3.3	64.9	0.1	65.0	13.8	0.0
Recycle Plant Total	3.5	15.9	38.1	99.3	1.1	100.4	21.8	0.1
Recycle Plant*				4.3		4.3	0.6	
Recycle Engine*	3.2	15.1	34.8		1.0	1.0	1.0	0.1
Recycle Plant Onsite Haul	0.3	0.8	3.3	95.0	0.1	95.1	20.2	0.0
Aggregates Plant Total	0.6	1.5	6.6	238.0	0.2	238.3	54.6	0.0
Aggregates Processing*				16.8		16.8	4.9	
Total Aggregates Mining								
Quarrying Fugitive Ems.								
Offroad Engines								
Aggregates Drops				1.2		1.2	0.4	
Aggregates Storage*				31.6		31.6	9.2	
Aggregates Plant Onsite Haul	0.6	1.5	6.6	188.4	0.2	188.6	40.1	0.0
Visitors, Diesel Delivery Onsite	0.0	0.0	0.0	1.4	0.0	1.4	0.3	0.0
Employee Commute								
Total Permitted	3.2	15.1	34.8	55.3	1.0	56.3	16.5	0.1
Total Permit-Exempt	1.2	3.1	13.3	350.9	0.5	351.3	74.8	0.0
Total Plant Site	**4.4**	**18.2**	**48.1**	**406.1**	**1.5**	**407.6**	**91.3**	**0.1**
Plant Site Models (g/s)	0.0230	0.095	0.253	2.132	0.008	2.140	0.479	0.000

Plant Site

(units followed by * are permitted)	Years 0 - 30 (lbs/day) ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	81.3	445.7	31.0	59.2	0.0	59.2	13.4	11.4
Asphalt Plant Dryer*	27.3	433.3	29.1	8.3	-	8.3	1.9	11.3
Asphalt Plant Silos*	53.7	8.4	-	0.2	-	0.2	0.2	-
Asphalt Plant Oil Heater*	0.3	3.8	1.2	0.3	-	0.3	0.3	0.0
Asphalt Plant Fugitive Dust*				3.1		3.1	0.9	
Asphalt Plant Onsite Haul	0.0	0.1	0.7	47.3	0.0	47.3	10.0	0.0
Ready Mix Plant Total	0.0	0.1	0.6	35.0	0.0	35.0	7.6	0.0
Ready Mix Plant*				2.5		2.5	0.7	
Ready Mix Onsite Haul	0.0	0.1	0.6	32.4	0.0	32.5	6.9	0.0
Recycle Plant Total	3.2	15.2	35.5	51.8	1.1	52.9	11.7	0.1
Recycle Plant*				4.3		4.3	0.6	
Recycle Engine*	3.2	15.1	34.8	-	1.0	1.0	1.0	0.1
Recycle Plant Onsite Haul	0.0	0.1	0.7	47.5	0.0	47.5	10.1	0.0
Aggregates Plant Total	1.9	10.6	25.0	89.6	1.2	90.8	22.1	0.0
Aggregates Processing*				14.9		14.9	4.3	
Total Aggregates Mining	1.9	10.4	24.1	8.4	1.2	9.6	3.4	0.0
Quarrying Fugitive Ems.				8.4		8.4	2.5	
Offroad Engines	1.9	10.4	24.1		1.2	1.2	0.9	0.0
Aggregates Drops				0.7		0.7	0.2	
Aggregates Storage*				2.8		2.8	0.8	
Aggregates Plant Onsite Haul	0.0	0.1	0.9	62.8	0.1	62.9	13.3	0.0
Visitors, Diesel Delivery Onsite	0.0	0.0	0.0	1.8	0.0	1.8	0.4	0.0
Employee Commute								
Total Permitted	84.4	460.6	65.1	36.4	1.0	37.4	10.8	11.4
Total Permit-Exempt	1.9	10.9	27.0	200.9	1.4	202.3	44.3	0.0
Total Plant Site	**86.3**	**471.5**	**92.1**	**237.3**	**2.4**	**239.6**	**55.2**	**11.5**
Plant Site Models (g/s)	0.453	2.476	0.484	1.246	0.013	1.258	0.290	0.060

Plant Site

(units followed by * are permitted)	Years 31 - 100 (lbs/day)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total								
Asphalt Plant Dryer*								
Asphalt Plant Silos*								
Asphalt Plant Oil Heater*								
Asphalt Plant Fugitive Dust*								
Asphalt Plant Onsite Haul								
Ready Mix Plant Total								
Ready Mix Plant*								
Ready Mix Onsite Haul								
Recycle Plant Total								
Recycle Plant*								
Recycle Engine*								
Recycle Plant Onsite Haul								
Aggregates Plant Total								
Aggregates Processing*								
Total Aggregates Mining								
Quarrying Fugitive Ems.								
Offroad Engines								
Aggregates Drops								
Aggregates Storage*								
Aggregates Plant Onsite Haul								
Visitors, Diesel Delivery Onsite								
Employee Commute								
Total Permitted								
Total Permit-Exempt								
Total Plant Site								
Plant Site Models (g/s)								

		Baseline (lbs/day)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Quarry Site	Asphalt Plant Total								
	Asphalt Plant Dryer*								
	Asphalt Plant Silos*								
	Asphalt Plant Oil Heater*								
	Asphalt Plant Fugitive Dust*								
	Asphalt Plant Onsite Haul								
	Ready Mix Plant Total								
	Ready Mix Plant*								
	Ready Mix Onsite Haul								
	Recycle Plant Total								
	Recycle Plant*								
	Recycle Engine*								
	Recycle Plant Onsite Haul								
	Aggregates Plant Total	36.9	203.8	475.7	580.1	19.9	600.0	142.2	0.4
	Aggregates Processing*								
	Aggregates Mining Total	36.1	201.6	466.2	12.9	19.6	32.5	21.8	0.4
	Quarrying Fugitive Ems.				12.9		12.9	3.8	
	Offroad Engines	36.1	201.6	466.2		19.6	19.6	18.0	0.4
	Blasting								
	Aggregates Drops								
	Aggregates Storage*								
	Aggregates Plant Onsite Haul	0.9	2.2	9.5	567.2	0.3	567.6	120.5	0.0
	Visitors, Diesel Delivery Onsite								
	Employee Commute	0.1	0.9	0.1		0.0	0.0	0.0	0.0
	Total Permitted	-	-	-	-	-	-	-	-
	Total Permit-Exempt	36.9	203.8	475.7	580.1	19.9	600.0	142.2	0.4
	Total Quarry Site	**36.9**	**204.7**	**475.7**	**580.1**	**19.9**	**600.0**	**142.2**	**0.4**
	Quarry Site Models (g/s)	**0.194**	**1.075**	**2.497**	**3.046**	**0.105**	**3.150**	**0.747**	**0.002**

		Baseline (lbs/day)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Off-site	Non-Employee Vehicles (Haul Trucks)	Impacts assessed based on change in regional activity (Appendix J).							
	Between Sites	2.6	4.7	20.2	2.6	0.7	3.3	1.0	0.0
	Employee Commutes	0.1	0.9	0.1	-	0.0	0.0	0.0	0.0
	Electricity	-		-	-	-	-	-	-
	Total Off-site	**2.7**	**5.6**	**20.2**	**2.6**	**0.7**	**3.3**	**1.0**	**0.0**

	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Total Permitted	3.2	15.1	34.8	55.3	1.0	56.3	16.5	0.1
Total Permit-Exempt	40.8	212.4	509.2	933.6	21.1	954.6	218.1	0.4
Grand Total	44.0	228.4	544.0	988.8	22.1	1,010.9	234.5	0.5
Total Both Sites MT/day	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Net Increase Permitted (lbs/day)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Net Increse Permit Exempt (lbs/day)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.
Shaded Cells represent lack of source or source with de mimimis emissions

		Years 0 - 30 (lbs/day)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Quarry Site	Asphalt Plant Total								
	Asphalt Plant Dryer*								
	Asphalt Plant Silos*								
	Asphalt Plant Oil Heater*								
	Asphalt Plant Fugitive Dust*								
	Asphalt Plant Onsite Haul								
	Ready Mix Plant Total								
	Ready Mix Plant*								
	Ready Mix Onsite Haul								
	Recycle Plant Total								
	Recycle Plant*								
	Recycle Engine*								
	Recycle Plant Onsite Haul								
	Aggregates Plant Total	40.1	655.6	570.9	329.6	1.3	330.9	80.9	12.7
	Aggregates Processing*				44.6		44.6	13.0	
	Aggregates Mining Total	40.1	655.1	567.7	46.9	1.1	48.0	14.9	12.7
	Quarrying Fugitive Ems.				46.9		46.9	13.9	
	Offroad Engines	40.1	253.1	465.7		1.1	1.1	1.1	0.7
	Blasting		402.0	102.0					12.0
	Aggregates Drops				2.2		2.2	0.6	
	Aggregates Storage*				27.3		27.3	8.0	
	Aggregates Plant Onsite Haul	0.0	0.5	3.1	208.6	0.2	208.9	44.3	0.0
	Visitors, Diesel Delivery Onsite	0.0	0.0	0.0	2.0	0.0	2.0	0.4	0.0
	Employee Commute	0.7	9.0	0.5		0.0	0.0	0.0	0.0
	Total Permitted	-	-	-	71.9	-	71.9	21.0	-
	Total Permit-Exempt	40.1	253.6	468.9	259.7	1.3	261.0	60.3	0.7
	Total Quarry Site	**40.9**	**664.6**	**571.4**	**331.6**	**1.3**	**332.9**	**81.3**	**12.7**
	Quarry Site Models (g/s)	**0.215**	**3.489**	**3.000**	**1.741**	**0.007**	**1.748**	**0.427**	**0.067**

		Years 0 - 30 (lbs/day)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Off-site	Non-Employee Vehicles (Haul Trucks)	0.1	0.4	3.4	ND	ND	0.1	0.1	0.0
	Between Sites	0.0	0.3	2.0	0.6	0.1	0.8	0.2	0.0
	Employee Commutes	0.7	9.0	0.5	-	0.0	0.0	0.0	0.0
	Electricity	-	-	-	-	-	-	-	-
	Total Off-site	**0.8**	**9.6**	**5.9**	**0.6**	**0.2**	**0.9**	**0.3**	**0.0**

	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Total Permitted	84.4	460.6	65.1	108.2	1.0	109.2	31.8	11.4
Total Permit-Exempt	42.9	274.1	501.8	461.3	2.8	464.2	104.9	0.7
Grand Total	128.1	1,145.8	669.4	569.5	3.8	573.4	136.7	24.2
Total Both Sites MT/day	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Net Increase Permitted (lbs/day)	**81.3**	**457.5**	**61.9**	**105.1**	**-2.1**	**106.1**	**28.7**	**8.3**
Net Increse Permit Exempt (lbs/day)	**2.1**	**233.3**	**461.0**	**420.5**	**-38.0**	**423.3**	**64.1**	**-40.1**

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.
Shaded Cells represent lack of source or source with de mimimis emissions

		Years 31 - 100 (lbs/day)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Quarry Site	Asphalt Plant Total	90.6	561.0	67.5	21.6	1.0	22.5	9.3	11.6
	Asphalt Plant Dryer*	27.3	433.3	29.1	8.3	-	8.3	2.4	11.3
	Asphalt Plant Silos*	53.7	8.4	-	0.2	-	0.2	0.2	-
	Asphalt Plant Oil Heater*	0.3	3.8	1.2	0.3	-	0.3	0.3	0.0
	Asphalt Plant Fugitive Dust*				3.1		3.1	0.9	
	Asphalt Plant Onsite Haul	9.3	115.4	37.2	9.7	1.0	10.6	5.4	0.2
	Ready Mix Plant Total	0.0	0.1	0.3	2.8	0.0	2.8	0.1	0.0
	Ready Mix Plant*				2.5		2.5		
	Ready Mix Onsite Haul	0.0	0.1	0.3	0.2	0.0	0.3	0.1	0.0
	Recycle Plant Total	1.6	14.5	4.4	56.5	0.2	56.6	11.8	0.1
	Recycle Plant*				4.3		4.3	0.6	
	Recycle Engine*	1.6	14.4	4.1		0.1	0.1	0.1	0.1
	Recycle Plant Onsite Haul	0.0	0.1	0.4	52.2	0.1	52.2	11.1	0.0
	Aggregates Plant Total	30.3	698.6	187.5	379.8	1.5	381.3	92.9	14.9
	Aggregates Processing*				52.0		52.0	15.2	
	Aggregates Mining Total	30.2	698.1	185.8	51.1	1.2	52.3	16.3	14.8
	Quarrying Fugitive Ems.				51.1		51.1	15.1	
	Offroad Engines	30.2	229.1	66.8		1.2	1.2	1.2	0.8
	Blasting		469.0	119.0			-		14.0
	Aggregates Drops				3.2		3.2	0.9	
	Aggregates Storage*				30.0		30.0	8.8	
	Aggregates Plant Onsite Haul	0.0	0.5	1.7	243.4	0.3	243.7	51.7	0.0
	Visitors, Diesel Delivery Onsite	0.0	0.0	0.0	2.2	0.0	2.2	0.5	0.0
	Employee Commute	1.3	24.5	0.2		0.1	0.1	0.0	0.0
	Total Permitted	82.8	459.9	34.4	100.8	0.1	100.9	28.5	11.4
	Total Permit-Exempt	39.6	345.1	106.4	362.0	2.6	364.5	86.0	1.1
	Total Quarry Site	**123.7**	**1,298.5**	**259.9**	**462.8**	**2.8**	**465.6**	**114.6**	**26.5**
	Quarry Site Models (g/s)	**0.649**	**6.817**	**1.365**	**2.430**	**0.015**	**2.444**	**0.601**	**0.139**

		Years 31 - 100 (lbs/day)							
		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Off-site	Non-Employee Vehicles (Haul Trucks)	0.1	0.4	3.4	ND	ND	0.1	0.1	0.0
	Between Sites	-	-	-	-	-	-	-	-
	Employee Commutes	1.3	24.5	0.2	-	0.1	0.1	0.0	0.0
	Electricity	-	-	-	-	-	-	-	-
	Total Off-site	**1.4**	**24.9**	**3.6**	**-**	**0.1**	**0.2**	**0.1**	**0.0**

		ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
	Total Permitted	82.8	459.9	34.4	100.8	0.1	100.9	28.5	11.4
	Total Permit-Exempt	41.0	370.0	110.0	362.0	2.7	364.7	86.2	1.1
	Grand Total	125.1	1,323.4	263.6	462.8	2.9	465.8	114.7	26.6
	Total Both Sites MT/day	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Net Increase Permitted (lbs/day)	**79.7**	**456.8**	**31.2**	**97.6**	**-3.0**	**97.8**	**25.3**	**8.3**
	Net Increse Permit Exempt (lbs/day)	**0.1**	**329.2**	**69.2**	**321.2**	**-38.1**	**323.9**	**45.3**	**-39.7**

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.

Plant Site

	Baseline (lbs/hr)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Plant Dryer	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Asphalt Plant Silos	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Asphalt Plant Oil Heater	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Asphalt Plant Fugitive Dust				0.0		0.0	0.0	
Asphalt Plant Onsite Haul	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ready Mix Plant Total	0.0	0.1	0.5	10.1	0.0	10.1	2.2	0.0
Ready Mix Plant				0.4		0.4	0.1	
Ready Mix Onsite Haul	0.0	0.1	0.5	9.7	0.0	9.7	2.1	0.0
Recycle Plant Total	0.3	1.4	3.4	14.6	0.1	14.7	3.2	0.0
Recycle Plant				0.4		0.4	0.0	
Recycle Engine	0.3	1.3	2.9		0.1	0.1	0.1	0.0
Recycle Plant Onsite Haul	0.0	0.1	0.5	14.2	0.0	14.3	3.0	0.0
Aggregates Plant Total	0.0	0.1	0.5	17.7	0.0	17.7	4.0	0.0
Aggregates Processing				1.3		1.3	0.4	
Aggregates Mining								
Quarrying Fugitive Ems								
Offroad Engines								
Aggregates Drops				0.1		0.1	0.0	
Aggregates Storage				1.3		1.3	0.4	
Aggregates Plant Onsite Haul	0.0	0.1	0.5	14.9	0.0	14.9	3.2	0.0
Visitors, Diesel Delivery Onsite	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.0
Employee Commute								
Total Permitted	**0.3**	**1.3**	**2.9**	**3.4**	**0.1**	**3.5**	**1.0**	**0.0**
Total Permit-Exempt	**0.1**	**0.3**	**1.5**	**39.2**	**0.1**	**39.3**	**8.4**	**0.0**
Total Plant Site	**0.4**	**1.6**	**4.4**	**42.6**	**0.1**	**42.8**	**9.4**	**0.0**
Plant Site Models (g/s)	0.051	0.202	0.555	5.369	0.017	5.387	1.182	0.001

Plant Site

	Years 0 - 30 (lbs/hr)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	12.2	66.4	4.5	8.8	0.0	8.8	2.0	1.7
Asphalt Plant Dryer	4.1	65.0	4.4	1.2	0.0	1.2	0.4	1.7
Asphalt Plant Silos	8.1	1.3	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Plant Oil Heater	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Plant Fugitive Dust				0.5		0.5	0.1	
Asphalt Plant Onsite Haul	0.0	0.0	0.1	7.1	0.0	7.1	1.5	0.0
Ready Mix Plant Total	0.0	0.0	0.1	5.2	0.0	5.3	1.1	0.0
Ready Mix Plant				0.4		0.4	0.1	
Ready Mix Onsite Haul	0.0	0.0	0.1	4.9	0.0	4.9	1.0	0.0
Recycle Plant Total	0.2	1.3	2.7	7.5	0.1	7.6	1.6	0.0
Recycle Plant				0.4		0.4	0.0	
Recycle Engine	0.2	1.2	2.6		0.1	0.1	0.1	0.0
Recycle Plant Onsite Haul	0.0	0.0	0.1	7.1	0.0	7.1	1.5	0.0
Aggregates Plant Total	0.1	0.7	1.3	11.1	0.0	9.5	2.7	0.0
Aggregates Processing				1.8		1.8	0.5	
Aggregates Mining	0.1	0.6	1.2	1.7	0.0	0.0	0.5	0.0
Quarrying Fugitive Ems				1.7			0.5	
Offroad Engines	0.1	0.6	1.2		0.0	0.0	0.0	0.0
Aggregates Drops				0.1		0.1	0.0	
Aggregates Storage				0.1		0.1	0.0	
Aggregates Plant Onsite Haul	0.0	0.0	0.1	7.5	0.0	7.5	1.6	0.0
Visitors, Diesel Delivery Onsite	0.0	0.0	0.0	0.3	0.0	0.3	0.1	0.0
Employee Commute								
Total Permitted	**12.4**	**67.7**	**7.0**	**4.4**	**0.1**	**4.4**	**1.3**	**1.7**
Total Permit-Exempt	**0.1**	**0.7**	**1.6**	**28.6**	**0.0**	**27.0**	**6.2**	**0.0**
Total Plant Site	**12.5**	**68.4**	**8.6**	**33.0**	**0.1**	**31.4**	**7.5**	**1.7**
Plant Site Models (g/s)	1.578	8.615	1.085	4.156	0.013	3.957	0.947	0.216

	Years 31 - 100 (lbs/hr)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Plant Site								
Asphalt Plant Total								
Asphalt Plant Dryer								
Asphalt Plant Silos								
Asphalt Plant Oil Heater								
Asphalt Plant Fugitive Dust								
Asphalt Plant Onsite Haul								
Ready Mix Plant Total								
Ready Mix Plant								
Ready Mix Onsite Haul								
Recycle Plant Total								
Recycle Plant								
Recycle Engine								
Recycle Plant Onsite Haul								
Aggregates Plant Total								
Aggregates Processing								
Aggregates Mining								
Quarrying Fugitive Ems								
Offroad Engines								
Aggregates Drops								
Aggregates Storage								
Aggregates Plant Onsite Haul								
Visitors, Diesel Delivery Onsite								
Employee Commute								
Total Permitted								
Total Permit-Exempt								
Total Plant Site								
Plant Site Models (g/s)								

Quarry Site	Baseline (lbs/hr)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total								
Asphalt Plant Dryer								
Asphalt Plant Silos								
Asphalt Plant Oil Heater								
Asphalt Plant Fugitive Dust								
Asphalt Plant Onsite Haul								
Ready Mix Plant Total								
Ready Mix Plant								
Ready Mix Onsite Haul								
Recycle Plant Total								
Recycle Plant								
Recycle Engine								
Recycle Plant Onsite Haul								
Aggregates Plant Total	1.5	8.4	20.6	54.9	0.8	55.7	13.2	0.0
Aggregates Processing								
Aggregates Mining Total	1.5	8.2	19.8	10.0	0.8	10.8	3.6	0.0
Quarrying Fugitive Ems.				10.0		10.0	2.9	
Offroad Engines	1.5	8.2	19.8		0.8	0.8	0.7	0.0
Blasting								
Aggregates Drops								
Aggregates Storage								
Aggregates Plant Onsite Haul	0.1	0.2	0.7	44.9	0.0	44.9	9.5	0.0
Visitors, Diesel Delivery Onsite								
Employee Commute								
Total Permitted	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Total Permit-Exempt	**1.5**	**8.4**	**20.6**	**54.9**	**0.8**	**55.7**	**13.2**	**0.0**
Total Quarry Site	**1.5**	**8.4**	**20.6**	**54.9**	**0.8**	**55.7**	**13.2**	**0.0**
Quarry Site Models (total g/s)	**0.195**	**1.061**	**2.591**	**6.918**	**0.102**	**7.020**	**1.660**	**0.002**

Off-site	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Non-Employee Vehicles (Haul Trucks)	Impacts assessed based on change in regional activity (Appendix J).							
Between Sites	0.1	0.4	1.6	0.2	0.1	0.3	0.1	0.0
Employee Commutes	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	ND	ND	ND	ND	ND	ND	ND	ND
Total Off-site	0.2	0.6	1.6	0.2	0.1	0.3	0.1	0.0

	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Total Permitted	0.3	1.3	2.9	3.4	0.1	3.5	1.0	0.0
Total Permit-Exempt	1.9	9.4	23.7	94.3	0.9	95.3	21.6	0.0
Grand Total	2.1	10.6	26.6	97.7	1.0	98.7	22.6	0.0

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.
Shaded Cells represent lack of source or source with de mimimis emissions

Quarry Site	Years 0 - 30 (lbs/hr)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total								
Asphalt Plant Dryer								
Asphalt Plant Silos								
Asphalt Plant Oil Heater								
Asphalt Plant Fugitive Dust								
Asphalt Plant Onsite Haul								
Ready Mix Plant Total								
Ready Mix Plant								
Ready Mix Onsite Haul								
Recycle Plant Total								
Recycle Plant								
Recycle Engine								
Recycle Plant Onsite Haul								
Aggregates Plant Total	1.0	43.3	21.6	46.6	0.0	46.6	12.1	1.1
Aggregates Processing				4.1		4.1	1.2	
Aggregates Mining Total	1.0	43.2	21.3	22.0	0.0	22.0	6.5	1.1
Quarrying Fugitive Ems.				22.0		22.0	6.4	
Offroad Engines	1.0	6.4	12.0		0.0	0.0	0.0	0.0
Blasting		36.9	9.4					1.1
Aggregates Drops				0.2		0.2	0.1	
Aggregates Storage				1.1		1.1	0.3	
Aggregates Plant Onsite Haul	0.0	0.0	0.3	19.1	0.0	19.1	4.1	0.0
Visitors, Diesel Delivery Onsite	0.0	0.0	0.0	0.3	0.0	0.3	0.1	0.0
Employee Commute								
Total Permitted	**0.0**	**0.0**	**0.0**	**5.2**	**0.0**	**5.2**	**1.5**	**0.0**
Total Permit-Exempt	**1.0**	**43.3**	**21.6**	**41.6**	**0.0**	**41.7**	**10.6**	**1.1**
Total Quarry Site	**1.0**	**43.3**	**21.6**	**46.9**	**0.0**	**46.9**	**12.2**	**1.1**
Quarry Site Models (total g/s)	**0.130**	**5.454**	**2.724**	**5.904**	**0.006**	**5.910**	**1.533**	**0.141**

Off-site	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Non-Employee Vehicles (Haul Trucks)	0.0	0.0	0.3	ND	ND	0.0	0.0	0.0
Between Sites	0.0	0.0	0.2	0.1	0.0	0.1	0.0	0.0
Employee Commutes	0.2	2.2	0.1	0.0	0.0	0.0	0.0	0.0
Electricity	ND	ND	ND	ND	ND	ND	ND	ND
Total Off-site	0.2	2.3	0.6	0.1	0.0	0.1	0.0	0.0

	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Total Permitted	12.4	67.7	7.0	9.6	0.1	9.7	2.8	1.7
Total Permit-Exempt	1.3	46.3	23.8	70.3	0.1	68.7	16.9	1.1
Grand Total	13.7	114.0	30.8	79.9	0.2	78.4	19.7	2.8

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.
Shaded Cells represent lack of source or source with de mimimis emissions

Quarry Site	Years 31 - 100 (lbs/hr)							
	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Asphalt Plant Total	12.3	67.6	4.8	2.0	0.0	2.0	0.7	1.7
Asphalt Plant Dryer	4.1	65.0	4.4	1.2	0.0	1.2	0.4	1.7
Asphalt Plant Silos	8.1	1.3	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Plant Oil Heater	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Plant Fugitive Dust				0.5		0.5	0.1	
Asphalt Plant Onsite Haul	0.1	1.2	0.4	0.3	0.0	0.3	0.1	0.0
Ready Mix Plant Total	0.0	0.0	0.0	0.4	0.0	0.4	0.1	0.0
Ready Mix Plant				0.4		0.4	0.1	
Ready Mix Onsite Haul	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recycle Plant Total	0.2	2.0	4.5	1.7	0.3	2.0	0.5	0.0
Recycle Plant				0.4		0.4	0.0	
Recycle Engine	0.1	1.2	0.3		0.0	0.0	0.0	0.0
Recycle Plant Onsite Haul	0.1	0.8	4.2	1.3	0.2	1.6	0.4	0.0
Aggregates Plant Total	0.7	41.8	10.9	46.7	0.1	46.8	12.2	1.1
Aggregates Processing				4.1		4.1	1.2	
Aggregates Mining Total	0.7	41.8	10.8	22.0	0.0	22.0	6.5	1.1
Quarrying Fugitive Ems.				22.0		22.0	6.4	
Offroad Engines	0.7	4.9	1.4		0.0	0.0	0.0	0.0
Blasting		36.9	9.4					1.1
Aggregates Drops				0.3		0.3	0.1	
Aggregates Storage				1.3		1.3	0.4	
Aggregates Plant Onsite Haul	0.0	0.0	0.1	19.1	0.0	19.1	4.1	0.0
Visitors, Diesel Delivery Onsite	0.0	0.0	0.0	0.3	0.0	0.3	0.1	0.0
Employee Commute								
Total Permitted	**12.3**	**67.6**	**4.8**	**7.8**	**0.0**	**7.8**	**2.2**	**1.7**
Total Permit-Exempt	**0.9**	**43.8**	**15.5**	**43.4**	**0.3**	**43.7**	**11.2**	**1.1**
Total Quarry Site	**13.2**	**111.4**	**20.3**	**51.2**	**0.3**	**51.5**	**13.5**	**2.8**
Quarry Site Models (total g/s)	**1.659**	**14.036**	**2.557**	**6.450**	**0.042**	**6.492**	**1.696**	**0.359**

Off-site	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Non-Employee Vehicles (Haul Trucks)	0.0	0.0	0.3	ND	ND	0.0	0.0	0.0
Between Sites	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Employee Commutes	0.3	6.1	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	ND	ND	ND	ND	ND	ND	ND	ND
Total Off-site	0.3	6.2	0.3	0.0	0.0	0.0	0.0	0.0

	ROG	CO	NOX	PM10 (non-diesel)	PM10 (diesel)	PM10 (total)	PM2.5	SOX
Total Permitted	12.3	67.6	4.8	7.8	0.0	7.8	2.2	1.7
Total Permit-Exempt	1.2	49.9	15.9	43.4	0.3	43.7	11.2	1.1
Grand Total	13.5	117.6	20.6	51.2	0.4	51.6	13.5	2.9

For Year 0 - 30, criteria pollutants from engines emissions
that do not contribute to health risk are attributed to the Quarry Site, despite being present on both sites.
Shaded Cells represent lack of source or source with de mimimis emissions

Aggregates Fugitive Mining, Storage, and Sitewide Drop Emissions

Drops from stationary equipment (i.e., conveyors) are included in the plant emissions calculations.

Drop and Mining Emission Factors, Storage Pile Emissions

Material Transfer Point Controlled Emission Factor from SSP1610:

PM10 EF (lb/ton) =	0.000046
PM2.5 EF[2] (lb/ton) =	0.000013

PM2.5 emission factor assumed to be 29.2% of PM10 based on SCAQMD's Updated CEIDARS

Storage Pile Emissions (Controlled Factor from SSP1610 - Aggregate Processing)

lb PM10/acre/day (mitigated) 0.527 lb PM10/acre/day (baseline) 1.054

	Site	Area (acres)	Hourly Emissions (lbs)	Daily Emissions (lbs)	Annual Emissions (lbs)
Basline Storage (Acres)	South	30.0	1.3	31.6	11541.3
Yr 0 - 29 Storage (Acres)	South	5.2	0.1	2.8	1004.1
Yr 30 - 99 Storage (Acres)	South	0.0	0.0	0.0	0.0
Basline Storage (Acres)	North	0	0	0	0
Yr 0 - 29 Storage (Acres)	North	51.7	1.1	27.3	9949.9
Yr 30 - 99 Storage (Acres)	North	56.9	1.3	30.0	10954.1
Control Factor:	90%				

Drop and Mining Emissions - Baseline

		Throughput			PM10 Emissions			PM2.5 Emissions		
Activity	Location	Peak Hour (tph)	Peak Day (tpd)	Peak Annual (tpy)	Peak Hour (lb/hr)	Peak Day (lb/day)	Peak Annual (lb/yr)	Peak Hour (lb/hr)	Peak Day (lb/day)	Peak Annual (lb/yr)
Excavation Process	North Site	475	6,000	1,580,413	10.0	12.6	33,188.7	2.9	3.7	9,691.1
Excavation to Haul Truck	North Site	475	6,000	1,580,413	0.0	0.3	72.7	0.0	0.1	21.2
Haul Truck to Plant Feed/Pile	South Site	475	6,000	1,580,413	0.0	0.3	72.7	0.0	0.1	21.2
Loader to Plant	South Site	1,082	10,048	1,580,413	0.0	0.5	72.7	0.0	0.1	21.2
Loader to Export Trucks	South Site	1,082	10,048	1,986,787	0.0	0.5	91.4	0.0	0.1	26.7

Drop and Mining Emissions - Future Years 0 - 29

		Throughput			PM10 Emissions			PM2.5 Emissions		
Activity	Location	Peak Hour (tph)	Peak Day (tpd)	Peak Annual (tpy)	Peak Hour (lb/hr)	Peak Day (lb/day)	Peak Annual (lb/yr)	Peak Hour (lb/hr)	Peak Day (lb/day)	Peak Annual (lb/yr)
Hard Rock Excavation and Blasting	North Site	1,100	12,000	2,725,000	22.0	46.9	6,972.1	6.4	13.7	2,035.8
Hard Rock Excavation to Pile	North Site	1,100	12,000	2,725,000	0.1	0.6	125.4	0.0	0.2	36.6
Pile to Conveyor	North Site	1,100	12,000	2,725,000	0.1	0.6	125.4	0.0	0.2	36.6
Conveyor to Pile	North Site	1,100	12,000	2,725,000	0.1	0.6	125.4	0.0	0.2	36.6
Loader to Export or Waste Trucks	North Site	1,100	12,000	2,725,000	0.1	0.6	125.4	0.0	0.2	36.6
Drop to Pile for Waste Material (10%)	North Site	1,100	12,000	272,500	0.1	0.6	12.5	0.0	0.2	3.7
Alluvial Excavation Process	South Site	800	4,000	275,000	1.7	8.4	577.5	0.5	2.5	168.6
Alluvial Excavation to Pile	South Site	800	4,000	275,000	0.0	0.2	12.7	0.0	0.1	3.7
Pile to Conveyor	South Site	800	4,000	275,000	0.0	0.2	12.7	0.0	0.1	3.7
Conveyor to Pile	South Site	800	4,000	275,000	0.0	0.2	12.7	0.0	0.1	3.7
Loader to Export or Waste Trucks	South Site	475	4,000	275,000	0.0	0.2	12.7	0.0	0.1	3.7
Drop to Pile for Waste Material (10%)	South Site	800	4,000	27,500	0.0	0.2	1.3	0.0	0.1	0.4
	Total:				**24.1**	**59.0**	**8,115.4**	**7.0**	**17.2**	**2,369.7**

Drop and Mining Emissions - Future Years 30 - 99

		Throughput			PM10 Emissions			PM2.5 Emissions		
Activity	Location	Peak Hour (tph)	Peak Day (tpd)	Peak Annual (tpy)	Peak Hour (lb/hr)	Peak Day (lb/day)	Peak Annual (lb/yr)	Peak Hour (lb/hr)	Peak Day (lb/day)	Peak Annual (lb/yr)
Hard Rock Excavation and Blasting	North Site	1,100	14,000	3,000,000	22.0	51.1	7,549.6	6.4	14.9	2,204.5
Hard Rock Excavation to Pile	North Site	1,100	14,000	3,000,000	0.1	0.6	138.0	0.0	0.2	40.3
Pile to Conveyor	North Site	1,100	14,000	3,000,000	0.1	0.6	138.0	0.0	0.2	40.3
Conveyor to Pile	North Site	1,100	14,000	3,000,000	0.1	0.6	138.0	0.0	0.2	40.3
Loader to Export or Waste Trucks	North Site	1,100	14,000	3,000,000	0.1	0.6	138.0	0.0	0.2	40.3
Drop to Pile for Waste Material (10%)	North Site	1,100	14,000	300,000	0.1	0.6	13.8	0.0	0.2	4.0
	Total:				**22.3**	**54.3**	**8,115.4**	**6.5**	**15.9**	**2,369.7**

Note: San Diego Air Pollution Control District (SDAPCD) Emissions factors are utilized for Drilling/Blasting/Quarry Emissions as SJVAPCD does not have applicable guidance for emissions calculations from these emissions source types

Quarrying Emissions Factors (SDAPCD Calculation Method Q01, Quarry Operations, General)

Standard factor lb pm10/ton quarried :	0.021
Control Factor Applied for Watering:	90%
lb pm10/ton quarried (mitigated)	0.0021

Blasting Emissions Data (SDAPCD Calculation Methods O20-D01, O29-B04)

3,000,000	Ua - annual quarry material blasted (tons)
0.00008	EF - Particulate emissions factor for wet drilling (lbs/ton quarried)
52	N - Annual Number of blasts (DEIR Pg 2-42, 2-43 states 1 - 2 blasts per week, 1 larger blast is more conservative)
19231	A - Average blast area (ft^2/blast)
19	lbs PM10 Emissions per blast
50	Avg borehole depth (ft) (DEIR Pg 2-42, 2-43)
50	Avg Bench Width (DEIR Pg 2-42, 2-43)
57,692	tons material blasted/blast
961,538	ft^3 material blasted/blast
385	Avg Bench Length (ft) (Calculated)
2	days of drilling per blast
16	hours of drilling per blast
1010	Annual PM10 Emissions from blasting (lbs)

Criteria Pollutant Blasting Emissions Factors - (SDAPCD Calculation Method O29-B04 Blasting Operations, Ammonium Nitrate With Fuel Oil, Bumping)

Factor Description	NOx	CO	SOx
District emissions factor, lbs pollutant/ton explosive	17	67	2
Calculated emissions factor in lbs pollutant/ton quarried	0.0085	0.0335	0.001

Note: Calculated emissions factor assumes 1 lb explosive used per ton Quarried

Hard Rock Excavation and Blasting Emissions - Years 0 - 29

Nox Emissions			CO Emissions			Sox		
Peak Hour (lb/hr)	Peak Day (lb/day)	Peak Annual (lb/yr)	Peak Hour (lb/hr)	Peak Day (lb/day)	Peak Annual (lb/yr)	Peak Hour (lb/hr)	Peak Day (lb/day)	Peak Annual (lb/yr)
9.4	102.0	23,162.5	36.9	402.0	91,287.5	1.1	12.0	2,725.0

Hard Rock Excavation and Blasting Emissions - Years 30 - 99

NOX Emissions			CO Emissions			SOX Emissions		
Peak Hour (lb/hr)	Peak Day (lb/day)	Peak Annual (lb/yr)	Peak Hour (lb/hr)	Peak Day (lb/day)	Peak Annual (lb/yr)	Peak Hour (lb/hr)	Peak Day (lb/day)	Peak Annual (lb/yr)
9.4	119.0	25,500.0	36.9	469.0	100,500.0	1.1	14.0	3,000.0

Aggregates Plant - Baseline

Basline Factor PM10 Emissions (lbs/ton)	0.002802
Basline Factor PM2.5 Emissions (lbs/ton)	0.000818
Total PM10 Emissions, lb/hr	1.3
Total PM2.5 Emissions, lb/hr	0.4

	Max (ton/hr)
Processing	475

Emission Point	Location From	Location To	Scale Estimated HP	Scale Max. (tph)	Operation Type Code	Operation Type Description	Emiss. Factor PM10 (lb/ton)	Emiss. Max. (lb/hr)
1	Truck	Hopper	0	475	9	*Truck Unloading Stone*	0.000016	0.01
3	Hopper	Conveyor 1	0	475	7	*Conv. Transfer Pt.*	0.000046	0.02
4	Conveyor 1	Crusher 1	10	475	7	*Conv. Transfer Pt.*	0.000046	0.02
5	Crusher 1	Conveyor 2	215	475	2	*Primary Crushing*	0.000540	0.26
6	Conveyor 2	Screen 1	10	475	7	*Conv. Transfer Pt.*	0.000046	0.02
7	Screen 1	Conveyor 3, 4, 5	60	475	1	*Screening*	0.000740	0.35
8	Conveyor 3	Pile 1	10	119	7	*Conv. Transfer Pt.*	0.000046	0.01
9	Conveyor 4	Crusher 2	10	178	3	*Secondary Crushing*	0.000540	0.10
10	Conveyor 5	Crusher 3	10	178	3	*Secondary Crushing*	0.000540	0.10
11	Crusher 2	Conveyor 6	400	178	7	*Conv. Transfer Pt.*	0.000046	0.01
12	Crusher 3	Conveyor 6	400	178	7	*Conv. Transfer Pt.*	0.000046	0.01
13	Conveyor 6	Screen 2	10	356	1	*Screening*	0.000740	0.26
14	Screen 2	Conveyor 7, 8	60	356	7	*Conv. Transfer Pt.*	0.000046	0.02
15	Conveyor 7	Pile 2	10	119	7	*Conv. Transfer Pt.*	0.000046	0.01
16	Conveyor 8	Crusher 4	10	238	7	*Conv. Transfer Pt.*	0.000046	0.01
17	Crusher 4	Conveyor 9	400	238	4	*Tertiary Crushing*	0.000540	0.13
18	Conveyor 9	Pile 3	10	238	7	*Conv. Transfer Pt.*	0.000046	0.01
		Total HP:	1625					

Plant equipment from San Joaquin Valley Air Pollution Control Distruct Survey Aurvey for the Annual Emission Inventory: 2016 (Appendix C)
Horse power esimtated based on future plant equiptment horse power, which is detailed on the following pages.

Table 3 - Emission Factors (lb/ton)
AP 42 Table 11.19.2-2, 8/04

Operation Type	Description	PM 10 No Control	PM 10 Control	% Reduction
0	Mis. Ops	0.000000	0	
1	Screening	0.008700	0.000740	0.91
2	Primary Crushing	0.002400	0.000540	0.78
3	Secondary Crushing	0.002400	0.000540	0.78
4	Tertiary Crushing	0.002400	0.000540	0.78
5	Fines Crushing	0.015000	0.001200	0.92
6	Fines Screening	0.072000	0.002200	0.97
7	Conv. Transfer Pt.	0.001100	0.000046	0.96
8	Wet Drilling	0.000080		
9	Truck Unloading Stone	0.000016		

Emission Factors from AP-42 Table 11.19.2-2
PM2.5 emission factor assumed to be 29.2% of PM10 based on SCAQMD's Updated CEIDARS
Wet processing not included as emissions are zero

Aggregates Plant - Future Year 0 - 30

	Max (ton/hr)
Processing	1100

Future Factor PM10 Emissions (lbs/ton)	0.0037
Future Factor PM2.5 Emissions (lbs/ton)	0.0011
Total PM10 Emissions, lb/hr	4.1
Total PM2.5 Emissions, lb/hr	1.2

Emission Point	Location From	Location To	Scale Max. (tph)	Operation Type Code	Operation Type Description	Emiss.Factor PM10 (lb/ton)	Emiss. Max. (lb/hr)
1	Truck	Vibrating Grizzly Feed 1	550	9	*Truck Unloading Stone*	0.000016	0.01
2	Truck	Vibrating Grizzly Feed 2	550	9	*Truck Unloading Stone*	0.000016	0.01
3	Vibrating Grizzly Feed 1	Jaw Crusher 1	451	7	*Conv. Transfer Pt.*	0.000046	0.02
4	Vibrating Grizzly Feed 2	Jaw Crusher 2	451	7	*Conv. Transfer Pt.*	0.000046	0.02
5	Vibrating Grizzly Feed 1	Conveyor 1	99	7	*Conv. Transfer Pt.*	0.000046	0.00
6	Vibrating Grizzly Feed 2	Conveyor 2	99	7	*Conv. Transfer Pt.*	0.000046	0.00
7	Jaw Crusher 1	Conveyor 1	451	2	*Primary Crushing*	0.000540	0.24
8	Jaw Crusher 2	Conveyor 2	451	2	*Primary Crushing*	0.000540	0.24
9	Conveyor 1	Conveyor 3	550	7	*Conv. Transfer Pt.*	0.000046	0.03
10	Conveyor 2	Conveyor 3	550	7	*Conv. Transfer Pt.*	0.000046	0.03
11	Conveyor 3	Conveyor 4	1100	7	*Conv. Transfer Pt.*	0.000046	0.05
12	Conveyor 4	Primary Screen	1100	7	*Conv. Transfer Pt.*	0.000046	0.05
13	Primary Screen	Conveyors 5a, 6a, 7a	231	1	*Screening*	0.000740	0.17
14	Conveyor 5a	Conveyor 5b	231	7	*Conv. Transfer Pt.*	0.000046	0.01
15	Conveyor 5b	Conveyor 5c	231	7	*Conv. Transfer Pt.*	0.000046	0.01
16	Conveyor 5c	Pile 1	231	7	*Conv. Transfer Pt.*	0.000046	0.01
17	Conveyor 6a	Conveyor 6b	107	7	*Conv. Transfer Pt.*	0.000046	0.00
18	Conveyor 6b	Conveyor 6c	653	7	*Conv. Transfer Pt.*	0.000046	0.03
19	Conveyor 7a	Conveyor 7b	762	7	*Conv. Transfer Pt.*	0.000046	0.04
20	Conveyor 6c	Cone Crusher 1	653	7	*Conv. Transfer Pt.*	0.000046	0.03
21	Conveyor 7b	Cone Crusher 2	762	7	*Conv. Transfer Pt.*	0.000046	0.04
22	Cone Crusher 1	Conveyor 8	653	3	*Secondary Crushing*	0.000540	0.35
23	Cone Crusher 2	Conveyor 8	762	3	*Secondary Crushing*	0.000540	0.41
24	Conveyor 8	Conveyor 9	1414	7	*Conv. Transfer Pt.*	0.000046	0.07
25	Conveyor 9	Secondary Screen A	707	1	*Screening*	0.000740	0.52
26	Conveyor 9	Secondary Screen B	707	1	*Screening*	0.000740	0.52
27	Secondary Screen A	Conveyors 10, 11	707	7	*Conv. Transfer Pt.*	0.000046	0.03
28	Secondary Screen B	Conveyors 10, 12	707	7	*Conv. Transfer Pt.*	0.000046	0.03
29	Conveyor 10	Conveyor 6b	546	7	*Conv. Transfer Pt.*	0.000046	0.03
30	Conveyor 11	Conveyor 13	429	7	*Conv. Transfer Pt.*	0.000046	0.02
31	Conveyor 12	Conveyor 13	429	7	*Conv. Transfer Pt.*	0.000046	0.02
32	Conveyor 13	Conveyor 14	858	7	*Conv. Transfer Pt.*	0.000046	0.04
33	Conveyor 14	Tertiary Screen 1	429	7	*Conv. Transfer Pt.*	0.000046	0.02
34	Conveyor 14	Tertiary Screen 2	429	7	*Conv. Transfer Pt.*	0.000046	0.02
35	Tertiary Screen 1	Conveyors 15a, 16a, 17a, 18a, 19	429	1	*Screening*	0.000740	0.32
36	Tertiary Screen 2	Pump, Conveyors 16a, 17a, 18a, 19	429	1	*Screening*	0.000740	0.32
37	Conveyor 15a	Conveyor 15b	98	7	*Conv. Transfer Pt.*	0.000046	0.00
38	Conveyor 15b	Conveyor 15c	98	7	*Conv. Transfer Pt.*	0.000046	0.00
39	Conveyor 15c	Pile 2	98	7	*Conv. Transfer Pt.*	0.000046	0.00
40	Conveyor 16a	Conveyor 16b	311	7	*Conv. Transfer Pt.*	0.000046	0.01
41	Conveyor 16b	Pile 3	311	7	*Conv. Transfer Pt.*	0.000046	0.01
42	Conveyor 17a	Conveyor 17b	54	7	*Conv. Transfer Pt.*	0.000046	0.00
43	Conveyor 17b	Pile 4	54	7	*Conv. Transfer Pt.*	0.000046	0.00
44	Conveyor 18a	Conveyor 18b	61	7	*Conv. Transfer Pt.*	0.000046	0.00
45	Conveyor 18b	Pile 5	61	7	*Conv. Transfer Pt.*	0.000046	0.00
46	Conveyor 19	Conveyor 20	204	7	*Conv. Transfer Pt.*	0.000046	0.01
47	Conveyor 20	VSI Crusher	448	7	*Conv. Transfer Pt.*	0.000046	0.02
48	VIS Crusher	Conveyor 21	448	4	*Tertiary Crushing*	0.000540	0.24

Plant equipment based on diagrams and equiptment list provided by Cemex and provided on following pages.

Equiptment Names above do not match equiptment list in an effort to provide unique identification for each piece of equiptment, as well as a linear progression of plant equiptment. Horse-power is included in following diagrams.

Aggregates Plant - Future Year 30 - 100

	Max (ton/hr)
Processing	1100

Future Factor PM10 Emissions (lbs/ton)	0.0037
Future Factor PM2.5 Emissions (lbs/ton)	0.0011
Total PM10 Emissions, lb/hr	4.1
Total PM2.5 Emissions, lb/hr	1.2

Emission	Location		Scale	Operation Type		Emiss.Factor	Emiss.
Point	From	To	Max. (tph)	Code	Description	PM10 (lb/ton)	Max. (lb/hr)
1	Truck	Vibrating Grizzly Feed 1	550	9	*Truck Unloading Stone*	0.000016	0.01
2	Truck	Vibrating Grizzly Feed 2	550	9	*Truck Unloading Stone*	0.000016	0.01
3	Vibrating Grizzly Feed 1	Jaw Crusher 1	451	7	*Conv. Transfer Pt.*	0.000046	0.02
4	Vibrating Grizzly Feed 2	Jaw Crusher 2	451	7	*Conv. Transfer Pt.*	0.000046	0.02
5	Vibrating Grizzly Feed 1	Conveyor 1	99	7	*Conv. Transfer Pt.*	0.000046	0.00
6	Vibrating Grizzly Feed 2	Conveyor 2	99	7	*Conv. Transfer Pt.*	0.000046	0.00
7	Jaw Crusher 1	Conveyor 1	451	2	*Primary Crushing*	0.000540	0.24
8	Jaw Crusher 2	Conveyor 2	451	2	*Primary Crushing*	0.000540	0.24
9	Conveyor 1	Conveyor 3	550	7	*Conv. Transfer Pt.*	0.000046	0.03
10	Conveyor 2	Conveyor 3	550	7	*Conv. Transfer Pt.*	0.000046	0.03
11	Conveyor 3	Conveyor 4	1100	7	*Conv. Transfer Pt.*	0.000046	0.05
12	Conveyor 4	Primary Screen	1100	7	*Conv. Transfer Pt.*	0.000046	0.05
13	Primary Screen	Conveyors 5a, 6a, 7a	231	1	*Screening*	0.000740	0.17
14	Conveyor 5a	Conveyor 5b	231	7	*Conv. Transfer Pt.*	0.000046	0.01
15	Conveyor 5b	Conveyor 5c	231	7	*Conv. Transfer Pt.*	0.000046	0.01
16	Conveyor 5c	Pile 1	231	7	*Conv. Transfer Pt.*	0.000046	0.01
17	Conveyor 6a	Conveyor 6b	107	7	*Conv. Transfer Pt.*	0.000046	0.00
18	Conveyor 6b	Conveyor 6c	653	7	*Conv. Transfer Pt.*	0.000046	0.03
19	Conveyor 7a	Conveyor 7b	762	7	*Conv. Transfer Pt.*	0.000046	0.04
20	Conveyor 6c	Cone Crusher 1	653	7	*Conv. Transfer Pt.*	0.000046	0.03
21	Conveyor 7b	Cone Crusher 2	762	7	*Conv. Transfer Pt.*	0.000046	0.04
22	Cone Crusher 1	Conveyor 8	653	3	*Secondary Crushing*	0.000540	0.35
23	Cone Crusher 2	Conveyor 8	762	3	*Secondary Crushing*	0.000540	0.41
24	Conveyor 8	Conveyor 9	1414	7	*Conv. Transfer Pt.*	0.000046	0.07
25	Conveyor 9	Secondary Screen A	707	1	*Screening*	0.000740	0.52
26	Conveyor 9	Secondary Screen B	707	1	*Screening*	0.000740	0.52
27	Secondary Screen A	Conveyors 10, 11	707	7	*Conv. Transfer Pt.*	0.000046	0.03
28	Secondary Screen B	Conveyors 10, 12	707	7	*Conv. Transfer Pt.*	0.000046	0.03
29	Conveyor 10	Conveyor 6b	546	7	*Conv. Transfer Pt.*	0.000046	0.03
30	Conveyor 11	Conveyor 13	429	7	*Conv. Transfer Pt.*	0.000046	0.02
31	Conveyor 12	Conveyor 13	429	7	*Conv. Transfer Pt.*	0.000046	0.02
32	Conveyor 13	Conveyor 14	858	7	*Conv. Transfer Pt.*	0.000046	0.04
33	Conveyor 14	Tertiary Screen 1	429	7	*Conv. Transfer Pt.*	0.000046	0.02
34	Conveyor 14	Tertiary Screen 2	429	7	*Conv. Transfer Pt.*	0.000046	0.02
35	Tertiary Screen 1	Conveyors 15a, 16a, 17a, 18a, 19	429	1	*Screening*	0.000740	0.32
36	Tertiary Screen 2	Pump, Conveyors 16a, 17a, 18a, 19	429	1	*Screening*	0.000740	0.32
37	Conveyor 15a	Conveyor 15b	98	7	*Conv. Transfer Pt.*	0.000046	0.00
38	Conveyor 15b	Conveyor 15c	98	7	*Conv. Transfer Pt.*	0.000046	0.00
39	Conveyor 15c	Pile 2	98	7	*Conv. Transfer Pt.*	0.000046	0.00
40	Conveyor 16a	Conveyor 16b	311	7	*Conv. Transfer Pt.*	0.000046	0.01
41	Conveyor 16b	Pile 3	311	7	*Conv. Transfer Pt.*	0.000046	0.01
42	Conveyor 17a	Conveyor 17b	54	7	*Conv. Transfer Pt.*	0.000046	0.00
43	Conveyor 17b	Pile 4	54	7	*Conv. Transfer Pt.*	0.000046	0.00
44	Conveyor 18a	Conveyor 18b	61	7	*Conv. Transfer Pt.*	0.000046	0.00
45	Conveyor 18b	Pile 5	61	7	*Conv. Transfer Pt.*	0.000046	0.00
46	Conveyor 19	Conveyor 20	204	7	*Conv. Transfer Pt.*	0.000046	0.01
47	Conveyor 20	VSI Crusher	448	7	*Conv. Transfer Pt.*	0.000046	0.02
48	VIS Crusher	Conveyor 21	448	4	*Tertiary Crushing*	0.000540	0.24

Plant equipment based on diagrams and equiptment list provided by Cemex and provided on following pages.

Equiptment Names above do not match equiptment list in an effort to provide unique identification for each piece of equiptment, as well as a linear progression of plant equiptment. Horse-power is included in following diagrams.

Asphalt Plant Material Handling Equipment Emissions

Description	% of Throughput	Hourly Throughput (tph)	Daily Throughput (tpd)	Annual Throughput (tpy)	PM10 Emission Factor (lb/ton)	Baseline PM10 Emissions (lb)			Basline PM2.5 Emissions (lb)		
						Hour	Day	Year	Hour	Day	Year
New aggregate dump to bins	100%	-	-	-	0.000046	-	-	-	-	-	-
Bin to conveyor	100%	-	-	-	0.000046	-	-	-	-	-	-
Conveyor to screen	100%	-	-	-	0.000046	-	-	-	-	-	-
Screen	100%	-	-	-	0.000740	-	-	-	-	-	-
Conveyor to Dryer	100%	-	-	-	0.000046	-	-	-	-	-	-
Total Emissions						**-**	**-**	**-**	**-**	**-**	**-**

Description	% of Throughput	Hourly Throughput (tph)	Daily Throughput (tpd)	Annual Throughput (tpy)	PM10 Emission Factor (lb/ton)	Yr 0 - 30 PM10 Emissions (lb)			Yr 0 - 30 PM2.5 Emissions (lb)		
						Hour	Day	Year	Hour	Day	Year
New aggregate dump to bins	100%	500.0	3,333.0	500,000.0	0.000046	0.0	0.2	23.0	0.0	0.0	6.7
Bin to conveyor	100%	500.0	3,333.0	500,000.0	0.000046	0.0	0.2	23.0	0.0	0.0	6.7
Conveyor to screen	100%	500.0	3,333.0	500,000.0	0.000046	0.0	0.2	23.0	0.0	0.0	6.7
Screen	100%	500.0	3,333.0	500,000.0	0.000740	0.4	2.5	370.0	0.1	0.7	108.0
Conveyor to Dryer	100%	500.0	3,333.0	500,000.0	0.000046	0.0	0.2	23.0	0.0	0.0	6.7
Total Emissions						**0.5**	**3.1**	**462.0**	**0.1**	**0.9**	**134.9**

Description	% of Throughput	Hourly Throughput (tph)	Daily Throughput (tpd)	Annual Throughput (tpy)	PM10 Emission Factor (lb/ton)	Yr 31 - 100 PM10 Emissions (lb)			Yr 31 - 100 PM2.5 Emissions (lb)		
						Hour	Day	Year	Hour	Day	Year
New aggregate dump to bins	100%	500.0	3,333.0	500,000.0	0.000046	0.0	0.2	23.0	0.0	0.0	6.7
Bin to conveyor	100%	500.0	3,333.0	500,000.0	0.000046	0.0	0.2	23.0	0.0	0.0	6.7
Conveyor to screen	100%	500.0	3,333.0	500,000.0	0.000046	0.0	0.2	23.0	0.0	0.0	6.7
Screen	100%	500.0	3,333.0	500,000.0	0.000740	0.4	2.5	370.0	0.1	0.7	108.0
Conveyor to Dryer	100%	500.0	3,333.0	500,000.0	0.000046	0.0	0.2	23.0	0.0	0.0	6.7
Total Emissions						**0.5**	**3.1**	**462.0**	**0.1**	**0.9**	**134.9**

Emissions Factors from San Joaquin Valley Unified Air Pollution Control District SSP1610 Aggregate Permit Processing

[1] PM2.5 emission factor assumed to be 29.2% of PM10 for material drops based on SCAQMD's *Updated CEIDARS Table with PM2.5 Fractions for mineral products - loading*

Ready Mix Concrete Plant Emission Calculations

	Baseline		
	Cubic Yards	**PM10 (lb)**	**PM2.5 (lb)**
Peak Hour	190.0	0.4	0.1
Peak Day	1266.4	2.5	0.7
Peak Year	189550.0	381.1	111.3

Equipment / Emission Unit Description	**Throughput (tpy)**	**Ems. Factor**	**EF Unit**	**PM_{10} Ems. (tpy)**	**$PM_{2.5}$ Ems.[1] (tpy)**	**Emission Source Comments**
Conveyor transfer to aggregate storage bin	311,430.65	0.000046	lb PM10 / ton aggregate	0.01	0.00	AP42, table 11.19.2-2, 8/04, conveyor transfer point. AP42 emission factor of 0.000046 lb/ton. Aggregate kept moist.
Discharge from aggregate storage bin to belt conveyor	311,430.65	0.000046	lb PM10 / ton aggregate	0.01	0.00	
Pneumatic transfer of cement to controlled silo	46,534.53	0.000340	lb PM10 / ton cement	0.01	0.00	AP42 Table 11.12-2 (June 2006). Cement unloading to elevated storage silo controlled by fabric filter.
Pneumatic transfer of cement supplements to controlled silo	6,918.58	0.004900	lb PM10 / ton cement supplement	0.02	0.00	AP42 Table 11.12-2 (June 2006). Cement supplement unloading to elevated storage silo controlled by fabric filter.
Cement / flyash conveyed with cement batcher screw	46,534.53	NA	NA	-	-	Closed system
Weigh hopper loading (aggregate and cement / flyash)	311,430.65	0.000028	lb PM10 / ton aggregate	0.00	0.00	AP42 Table 11.12-2 (June 2006). Weigh hopper loading, with 99% control from fabric filter.
Mixer	53,453.10	0.005500	lb PM10 / ton cement and cement supplement	0.15	0.04	AP42 Table 11.12-2 (June 2006). Controlled central mixing.
Load out	381,374.60	NA	NA	-	-	Material is wet
			Annual Emissions (tpy)	**0.19**	**0.06**	
			Plant Emissions Factors (lb/cy)	**0.00**	**0.00**	

Ready Mix Concrete Plant Emission Calculations

	Yr 0 - 30		
	Cubic Yards	**PM10 (lb)**	**PM2.5 (lb)**
Peak Hour	190.0	0.4	0.1
Peak Day	1266.4	2.5	0.7
Peak Year	300000.0	603.1	176.1

Equipment / Emission Unit Description	**Throughput (tpy)**	**Emission Factor**	**EF Unit**	**PM_{10} Ems. (tpy)**	**$PM_{2.5}$ Ems.[1] (tpy)**	**Emission Source Comments**
Conveyor transfer to aggregate storage bin	492,900.00	0.000046	lb PM10 / ton aggregate	0.01	0.00	AP42, table 11.19.2-2, 8/04, conveyor transfer point. AP42 emission factor of 0.000046 lb/ton. Aggregate kept moist.
Discharge from aggregate storage bin to belt conveyor	492,900.00	0.000046	lb PM10 / ton aggregate	0.01	0.00	
Pneumatic transfer of cement to controlled silo	73,650.00	0.000340	lb PM10 / ton cement	0.01	0.00	AP42 Table 11.12-2 (June 2006). Cement unloading to elevated storage silo controlled by fabric filter.
Pneumatic transfer of cement supplements to controlled silo	10,950.00	0.004900	lb PM10 / ton cement supplement	0.03	0.01	AP42 Table 11.12-2 (June 2006). Cement supplement unloading to elevated storage silo controlled by fabric filter.
Cement / flyash conveyed with cement batcher screw	73,650.00	NA	NA	-	-	Closed system
Weigh hopper loading (aggregate and cement / flyash)	492,900.00	0.000028	lb PM10 / ton aggregate	0.01	0.00	AP42 Table 11.12-2 (June 2006). Weigh hopper loading, with 99% control from fabric filter.
Mixer	84,600.00	0.005500	lb PM10 / ton cement and cement supplement	0.23	0.07	AP42 Table 11.12-2 (June 2006). Controlled central mixing.
Load out	603,600.00	NA	NA	-	-	Material is wet
			Annual Emissions (tpy)	**0.30**	**0.09**	
			Plant Emissions Factors (lb/cy)	**0.00**	**0.00**	

Ready Mix Concrete Plant Emission Calculations

	Yr 31 - 100		
	Cubic Yards	**PM10 (lb)**	**PM2.5 (lb)**
Peak Hour	190.0	0.4	0.1
Peak Day	1266.4	2.5	0.7
Peak Year	300000.0	603.1	176.1

Equipment / Emission Unit Description	**Throughput (tpy)**	**Emission Factor**	**EF Unit**	**PM_{10} Ems. (tpy)**	**$PM_{2.5}$ Ems.[1] (tpy)**	**Emission Source Comments**
Conveyor transfer to aggregate storage bin	492,900.0	0.000046	lb PM10 / ton aggregate	0.01	0.00	AP42, table 11.19.2-2, 8/04, conveyor transfer point. AP42 emission factor of 0.000046 lb/ton. Aggregate kept moist.
Discharge from aggregate storage bin to belt conveyor	492,900.0	0.000046	lb PM10 / ton aggregate	0.01	0.00	
Pneumatic transfer of cement to controlled silo	73,650.0	0.000340	lb PM10 / ton cement	0.01	0.00	AP42 Table 11.12-2 (June 2006). Cement unloading to elevated storage silo controlled by fabric filter.
Pneumatic transfer of cement supplements to controlled silo	10,950.0	0.004900	lb PM10 / ton cement supplement	0.03	0.01	AP42 Table 11.12-2 (June 2006). Cement supplement unloading to elevated storage silo controlled by fabric filter.
Cement / flyash conveyed with cement batcher screw	73,650.0	NA	NA	-	-	Closed system
Weigh hopper loading (aggregate and cement / flyash)	492,900.0	0.000028	lb PM10 / ton aggregate	0.01	0.00	AP42 Table 11.12-2 (June 2006). Weigh hopper loading, with 99% control from fabric filter.
Mixer	84,600.0	0.005500	lb PM10 / ton cement and cement supplement	0.23	0.07	AP42 Table 11.12-2 (June 2006). Controlled central mixing.
Load out	603,600.0	NA	NA	-	-	Material is wet
			Annual Emissions (tpy)	**0.30**	**0.09**	
			Plant Emissions Factors (lb/cy)	**0.00**	**0.00**	

Throughput Information

Annual Production =	189550.0	yd^3
Density of Concrete =	2.0	$tons/yd^3$
Annual Concrete Production =	381374.6	tons
Amount of Sand and Gravel =	311430.7	tons
Amount of Cement =	46534.5	tons
Amount of Cement Supplements =	6918.6	tons

AP-42 Table 11.12-2, Footnote a.

1865	lb gravel	46%
1421	lb sand	35%
491	lb cement	12%
73	lb supplement	2%
174	lb water	4%
4024	lb concrete	100%

[1] PM2.5 emission factor assumed to be 29.2% of PM10 for material drops based on SCAQMD's Updated CEIDARS Table with PM2.5 Fractions for mineral products - loading

GHG/Electrical Calculation

Plant kW	612.8
Op-Hours in Peak Year	997.6
kW-hrs in peak year	611348.6
MT CO2e in Peak Year	261.0

Plant kW draw based on assumptions in G.6b
0.000427 MT CO2e per kWh based on CARB Green House Inventory Documentation
https://bit.ly/2SE6XKF

Throughput Information

Annual Production =	300000.0	yd^3
Density of Concrete =	2.0	$tons/yd^3$
Annual Concrete Production =	603600.0	tons
Amount of Sand and Gravel =	492900.0	tons
Amount of Cement =	73650.0	tons
Amount of Cement Supplements =	10950.0	tons

AP-42 Table 11.12-2, Footnote a.

1865	lb gravel	46%
1421	lb sand	35%
491	lb cement	12%
73	lb supplement	2%
174	lb water	4%
4024	lb concrete	100%

GHG/Electrical Calculation

Plant kW	612.8
Op-Hours in Peak Year	1578.9
kW-hrs in peak year	967578.9
MT CO2e in Peak Year	413.2

Plant kW draw based on assumptions in G.6b
0.000427 MT CO2e per kWh based on CARB Green House Inventory Documentation
https://bit.ly/2SE6XKF

[1] PM2.5 emission factor assumed to be 29.2% of PM10 for material drops based on SCAQMD's Updated CEIDARS Table with PM2.5 Fractions for mineral products - loading

Throughput Information

Annual Production =	300000.0	yd^3
Density of Concrete =	2.0	$tons/yd^3$
Annual Concrete Production =	603600.0	tons
Amount of Sand and Gravel =	492900.0	tons
Amount of Cement =	73650.0	tons
Amount of Cement Supplements =	10950.0	tons

AP-42 Table 11.12-2, Footnote a.

1865	lb gravel	46%
1421	lb sand	35%
491	lb cement	12%
73	lb supplement	2%
174	lb water	4%
4024	lb concrete	100%

GHG/Electrical Calculation

Plant kW	612.8
Op-Hours in Peak Year	1578.9
kW-hrs in peak year	967578.9
MT CO2e in Peak Year	413.2

Plant kW draw based on assumptions in G.6b
0.000427 MT CO2e per kWh based on CARB Green House Inventory Documentation
https://bit.ly/2SE6XKF

[1] PM2.5 emission factor assumed to be 29.2% of PM10 for material drops based on SCAQMD's Updated CEIDARS Table with PM2.5 Fractions for mineral products - loading

VEHICLE TYPE	VEHICLE MODEL	MODEL YEAR	ENGINE MAX POWER (HORSEPOWER)
Crawler Tractors	D8	1969	235
Crawler Tractors	D9R	2004	306
Excavators	EX-750	1997	434
Excavators	2219	1977	101
Tractors/Loaders/Backhoes	980C	1989	270
Graders	12G	1979	135
Off-Highway Trucks	100	1969	335
Off-Highway Trucks	735	2004	366
Off-Highway Trucks	100	1970	335
Tractors/Loaders/Backhoes	988F	2000	475
Tractors/Loaders/Backhoes	988G	2004	475
Cranes	RT 60S	1977	225
Forklifts	G83P-050-SBS-086G	1971	145
Aerial Lifts	AMZ-66XT	1990	140
Excavators	850D	2008	532.4

*Assumed to be 120 HP for CALEEMOD becasuse CALEEMod doesn't have Aerial Lift factors in the 140 - 250 hp range for 2012

	HorsePower	Estimated Fuel Used (gal/yr)*	Break Specific Fuel Consumption
Fleet Average, Off-Highway Trucks, Loaders, and Dozers	361	175506	0.367
Fleet Average, Other Equipment	245	87753	0.367

*Fuel used is assumed to have been split 66% to Trucks loaders and dozers, and 33% to other engines.

	Fuel Used (lb/yr)	**Hp-Hr/yr**
Off-Highway Trucks, Loaders, and Dozers	1237319	3371441
Other Equipment	618660	1685721
Sum 2016		

	CalEEMod Emission Factors (g/hphr) 2012 Calendar Year (Baseline)								
VEHICLE TYPE	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Crawler Tractors	0.5	0.5	1.9	6.4	0.0	0.3	0.2	523.5	0.2
Crawler Tractors	0.5	0.4	3.1	5.9	0.0	0.2	0.2	526.0	0.2
Excavators	0.3	0.3	1.4	4.1	0.0	0.1	0.1	520.0	0.2
Excavators	0.7	0.6	3.7	5.6	0.0	0.4	0.4	516.1	0.2
Tractors/Loaders/Backhoes	0.4	0.3	2.0	5.0	0.0	0.2	0.2	523.6	0.2
Graders	1.0	0.9	3.9	8.9	0.0	0.5	0.5	533.9	0.2
Off-Highway Trucks	0.5	0.4	2.3	5.4	0.0	0.2	0.2	525.9	0.2
Off-Highway Trucks	0.5	0.4	2.3	5.4	0.0	0.2	0.2	525.9	0.2
Off-Highway Trucks	0.5	0.4	2.3	5.4	0.0	0.2	0.2	525.9	0.2
Tractors/Loaders/Backhoes	0.4	0.3	2.0	5.0	0.0	0.2	0.2	523.6	0.2
Tractors/Loaders/Backhoes	0.4	0.3	2.0	5.0	0.0	0.2	0.2	523.6	0.2
Cranes	0.8	0.7	2.8	8.3	0.0	0.4	0.4	523.0	0.2
Forklifts	0.8	0.6	3.6	7.1	0.0	0.4	0.4	521.9	0.2
Aerial Lifts	0.3	0.3	3.3	4.4	0.0	0.3	0.2	521.9	0.2
Excavators	0.3	0.3	1.5	4.4	0.0	0.1	0.1	517.8	0.2

	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Fleet Average, Off-Highway Trucks, Loaders, and Dozers	0.5	0.4	2.3	5.5	0.0	0.2	0.2	524.9	0.2
Fleet Average, Other Equipment	0.6	0.5	2.8	6.0	0.0	0.3	0.3	522.3	0.2

*Fuel used is assumed to have been split 66% to
Trucks loaders and dozers, and 33% to other engines.

	TOG g/yr	ROG g/yr	CO g/yr	NOX g/yr	SO2 g/yr	PM10 g/yr	PM2.5 g/yr	CO2 g/yr	CH4 g/yr
Off-Highway Trucks, Loaders, and Dozers	1,643,721.7	1,381,327.7	7,654,207.7	18,493,358.4	16,857.2	694,998.6	638,647.3	1,769,806,229.4	517,757.1
Other Equipment	983,794.6	826,846.0	4,693,213.0	10,060,090.6	8,428.6	504,241.2	463,783.9	880,428,071.0	257,493.8
Sum 2016	2,627,516.4	2,208,173.8	12,347,420.7	28,553,449.0	25,285.8	1,199,239.8	1,102,431.3	2,650,234,300.4	775,250.9

	CalEEMod Emission Factors (g/hphr) 2018 Calendar Year (Year 0 - 30)								
VEHICLE TYPE	TOG	ROG	CO	NOX	SO2	PM10*	PM2.5	CO2	CH4
Crawler Tractors	0.5	0.4	1.7	5.3	0.0	0.0	0.0	491.6	0.2
Crawler Tractors	0.4	0.3	2.4	4.4	0.0	0.0	0.0	493.5	0.2
Excavators	0.2	0.2	1.1	2.1	0.0	0.0	0.0	489.1	0.2
Excavators	0.4	0.4	3.6	3.8	0.0	0.0	0.0	486.1	0.2
Tractors/Loaders/Backhoes	0.3	0.2	1.4	2.7	0.0	0.0	0.0	486.3	0.2
Graders	0.8	0.7	3.7	6.6	0.0	0.0	0.0	497.4	0.2
Off-Highway Trucks	0.3	0.3	1.6	3.1	0.0	0.0	0.0	493.5	0.2
Off-Highway Trucks	0.3	0.3	1.6	3.1	0.0	0.0	0.0	493.5	0.2
Off-Highway Trucks	0.3	0.3	1.6	3.1	0.0	0.0	0.0	493.5	0.2
Tractors/Loaders/Backhoes	0.3	0.2	1.4	2.7	0.0	0.0	0.0	486.3	0.2
Tractors/Loaders/Backhoes	0.3	0.2	1.4	2.7	0.0	0.0	0.0	486.3	0.2
Cranes	0.6	0.5	2.1	5.8	0.0	0.0	0.0	491.4	0.2
Forklifts	0.5	0.4	3.3	4.4	0.0	0.0	0.0	490.5	0.2
Aerial Lifts	0.1	0.1	3.2	2.1	0.0	0.0	0.0	490.5	0.2
Excavators	0.2	0.2	1.2	2.3	0.0	0.0	0.0	487.7	0.2
	*PM10 Emissions assume Tier 4i and are based on CalEEMod Appendix D Table 3.5								

	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Fleet Average, Off-Highway Trucks, Loaders, and Dozers	0.3	0.3	1.7	3.5	0.0	0.0	0.0	491.2	0.2
Fleet Average, Other Equipment	0.4	0.3	2.5	3.7	0.0	0.0	0.0	489.9	0.2

*Fuel used is assumed to have been split 66% to Trucks loaders and dozers, and 33% to other engines.

Effect of 2024 amendments to off-road engine regulation which require offroad fleets to burn only renewable diesel (RD) as discussed in Appendix L. 50%

	TOG g/yr	ROG g/yr	CO g/yr	NOX g/yr	SO2 g/yr	PM10 g/yr	PM2.5 g/yr	CO2 g/yr	CH4 g/yr
Off-Highway Trucks, Loaders, and Dozers	1,173,749.1	985,905.8	5,589,426.2	11,689,375.2	16,857.2	26,971.5	26,971.5	827,983,140.3	257,915.3
Other Equipment	663,868.6	557,762.9	4,154,884.4	6,241,301.0	8,428.6	13,485.8	13,485.8	412,878,198.3	128,536.2
Sum 2016	1,837,617.7	1,543,668.7	9,744,310.6	17,930,676.2	25,285.8	40,457.3	40,457.3	1,240,861,338.5	386,451.5

	CalEEMod Emission Factors (g/hphr) 2048 Calendar Year (Year 31 - 100)								
VEHICLE TYPE	TOG	ROG	CO	NOX	SO2	PM10*	PM2.5	CO2	CH4
Crawler Tractors	3.2	0.2	1.2	0.5	0.0	0.0	0.0	568.3	0.0
Crawler Tractors	5.0	0.2	1.1	0.5	0.0	0.0	0.0	568.3	0.0
Excavators	7.3	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
Excavators	3.4	0.3	3.8	1.5	0.0	0.0	0.0	568.3	0.0
Tractors/Loaders/Backhoes	9.8	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
Graders	2.0	0.2	3.3	0.4	0.0	0.0	0.0	568.3	0.0
Off-Highway Trucks	1.4	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
Off-Highway Trucks	1.4	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
Off-Highway Trucks	1.4	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
Tractors/Loaders/Backhoes	9.8	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
Tractors/Loaders/Backhoes	9.8	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
Cranes	2.5	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
Forklifts	1.8	0.2	3.4	0.3	0.0	0.0	0.0	568.3	0.0
Aerial Lifts	2.1	0.2	3.3	1.4	0.0	0.0	0.0	568.3	0.0
Excavators	12.1	0.2	1.1	0.3	0.0	0.0	0.0	568.3	0.0
	*PM10 Emissions assume Tier 4i and are based on CalEEMod Appendix D Table 3.5								

	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Fleet Average, Off-Highway Trucks, Loaders, and Dozers	4.6	0.2	1.1	0.4	0.0	0.0	0.0	568.3	0.0
Fleet Average, Other Equipment	5.1	0.2	2.3	0.6	0.0	0.0	0.0	568.3	0.0

*Fuel used is assumed to have been split 66% to Trucks loaders and dozers, and 33% to other engines.

Effect of 2024 amendments to off-road engine regulation which require offroad fleets to burn only renewable diesel (RD) as discussed in Appendix L. 50%

	TOG g/yr	ROG g/yr	CO g/yr	NOX g/yr	SO2 g/yr	PM10 g/yr	PM2.5 g/yr	CO2 g/yr	CH4 g/yr
Off-Highway Trucks, Loaders, and Dozers	15,495,145.1	665,137.2	3,721,589.8	1,189,637.2	18,302.1	26,971.5	26,971.5	957,993,413.6	29,138.9
Other Equipment	8,638,897.4	331,876.3	3,838,386.1	1,016,278.9	9,692.9	13,485.8	13,485.8	478,996,706.8	14,644.7
Sum 2016	24,134,042.5	997,013.5	7,559,975.9	2,205,916.1	27,995.0	40,457.3	40,457.3	1,436,990,120.3	43,783.6

Sum lb/yr Assuming 2016 Fuel Use	
lb/day (assuming ratio of mining peak day to annual rate)	
(Combined 1,018,509 Tons Produced in 2016)	
Annual Ems. Adjusted for Basline/Future Tonnage	
Daily Ems. Adjusted for Baseline/Future Tonnage	

Theoretical Max Hour	**Load Factor**
Crawler Tractors	0.43
Crawler Tractors	0.43
Excavators	0.38
Excavators	0.38
Tractors/Loaders/Backhoes	0.37
Graders	0.41
Off-Highway Trucks	0.38
Off-Highway Trucks	0.38
Off-Highway Trucks	0.38
Tractors/Loaders/Backhoes	0.37
Tractors/Loaders/Backhoes	0.37
Cranes	0.29
Forklifts	0.2
Aerial Lifts	0.31
Excavators	0.38

Sum Max Hour Emissions

	CalEEMod Emission Factors (g/hphr) 2012 Calendar Year (Baseline)									
	TOG	**ROG**	**CO**	**NOX**	**SO2**	**PM10**	**PM2.5**	**CO2**	**CH4**	**CO2e**
Sum lb/yr Assuming 2016 Fuel Use	5,792.7	4,868.2	27,221.4	62,949.6	55.7	2,643.9	2,430.4	5,842,766.5	1,709.1	5,890,622.3
lb/day (assuming ratio of mining peak day to annual rate)	22.0	18.5	103.3	239.0	0.2	10.0	9.2	22,181.9	6.5	22,363.6
(Combined 1,018,509 Tons Produced in 2016)										
Annual Ems. Adjusted for Basline/Future Tonnage	**11,299.7**	**9,496.3**	**53,100.3**	**122,794.6**	**108.7**	**5,157.4**	**4,741.0**	**11,397,380.7**	**3,334.0**	**11,490,732.2**
Daily Ems. Adjusted for Baseline/Future Tonnage	42.9	36.1	201.6	466.2	0.4	19.6	18.0	43,269.9	12.7	43,624.3

Theoretical Max Hour	**TOG lb/hr**	**ROG lb/hr**	**CO lb/hr**	**NOX lb/hr**	**SO2 lb/hr**	**PM10 lb/hr**	**PM2.5 lb/hr**	**CO2 lb/hr**	**CH4 lb/hr**	**CO2e lb/hr**
Crawler Tractors	0.1	0.1	0.4	1.4	0.0	0.1	0.1	116.6	0.0	117.6
Crawler Tractors	0.1	0.1	0.9	1.7	0.0	0.1	0.1	152.6	0.0	153.8
Excavators	0.1	0.1	0.5	1.5	0.0	0.0	0.0	189.1	0.1	190.6
Excavators	0.1	0.0	0.3	0.5	0.0	0.0	0.0	43.7	0.0	44.0
Tractors/Loaders/Backhoes	0.1	0.1	0.4	1.1	0.0	0.0	0.0	115.3	0.0	116.3
Graders	0.1	0.1	0.5	1.1	0.0	0.1	0.1	65.1	0.0	65.7
Off-Highway Trucks	0.1	0.1	0.6	1.5	0.0	0.1	0.1	147.6	0.0	148.8
Off-Highway Trucks	0.2	0.1	0.7	1.6	0.0	0.1	0.1	161.3	0.0	162.6
Off-Highway Trucks	0.1	0.1	0.6	1.5	0.0	0.1	0.1	147.6	0.0	148.8
Tractors/Loaders/Backhoes	0.2	0.1	0.8	1.9	0.0	0.1	0.1	202.9	0.1	204.5
Tractors/Loaders/Backhoes	0.2	0.1	0.8	1.9	0.0	0.1	0.1	202.9	0.1	204.5
Cranes	0.1	0.1	0.4	1.2	0.0	0.1	0.1	75.2	0.0	75.8
Forklifts	0.0	0.0	0.2	0.5	0.0	0.0	0.0	33.4	0.0	33.6
Aerial Lifts	0.0	0.0	0.3	0.4	0.0	0.0	0.0	49.9	0.0	50.4
Excavators	0.1	0.1	0.7	2.0	0.0	0.1	0.1	231.0	0.1	232.8
Sum Max Hour Emissions	**1.8**	**1.5**	**8.2**	**19.8**	**0.0**	**0.8**	**0.7**	**1,934.2**	**0.6**	**1,950.0**

	CalEEMod Emission Factors (g/hphr) 2018 Calendar Year (Year 0 - 30)									
	TOG	**ROG**	**CO**	**NOX**	**SO2**	**PM10**	**PM2.5**	**CO2**	**CH4**	**CO2e**
Sum lb/yr Assuming 2016 Fuel Use	4,051.3	3,403.2	21,482.5	39,530.4	55.7	89.2	89.2	2,735,631.0	852.0	2,759,486.4
lb/day (assuming ratio of mining peak day to annual rate)	17.8	15.0	94.6	174.1	0.2	0.4	0.4	12,046.8	3.8	12,151.9
(Combined 1,018,509 Tons Produced in 2016)										
Annual Ems. Adjusted for Basline/Future Tonnage	**10,839.0**	**9,105.2**	**57,476.1**	**105,762.7**	**149.1**	**238.6**	**238.6**	**7,319,124.7**	**2,279.5**	**7,382,949.5**
Daily Ems. Adjusted for Baseline/Future Tonnage	47.7	40.1	253.1	465.7	0.7	1.1	1.1	32,231.0	10.0	32,512.1

Theoretical Max Hour	**TOG lb/hr**	**ROG lb/hr**	**CO lb/hr**	**NOX lb/hr**	**SO2 lb/hr**	**PM10 lb/hr**	**PM2.5 lb/hr**	**CO2 lb/hr**	**CH4 lb/hr**	**CO2e lb/hr**
Crawler Tractors	0.1	0.1	0.4	1.2	0.0	0.0	0.0	109.5	0.0	110.5
Crawler Tractors	0.1	0.1	0.7	1.3	0.0	0.0	0.0	143.2	0.0	144.4
Excavators	0.1	0.1	0.4	0.7	0.0	0.0	0.0	177.8	0.1	179.4
Excavators	0.0	0.0	0.3	0.3	0.0	0.0	0.0	41.1	0.0	41.5
Tractors/Loaders/Backhoes	0.1	0.0	0.3	0.6	0.0	0.0	0.0	107.1	0.0	108.0
Graders	0.1	0.1	0.5	0.8	0.0	0.0	0.0	60.7	0.0	61.2
Off-Highway Trucks	0.1	0.1	0.4	0.9	0.0	0.0	0.0	138.5	0.0	139.7
Off-Highway Trucks	0.1	0.1	0.5	0.9	0.0	0.0	0.0	151.3	0.0	152.6
Off-Highway Trucks	0.1	0.1	0.4	0.9	0.0	0.0	0.0	138.5	0.0	139.7
Tractors/Loaders/Backhoes	0.1	0.1	0.6	1.0	0.0	0.0	0.0	188.4	0.1	190.1
Tractors/Loaders/Backhoes	0.1	0.1	0.6	1.0	0.0	0.0	0.0	188.4	0.1	190.1
Cranes	0.1	0.1	0.3	0.8	0.0	0.0	0.0	70.7	0.0	71.3
Forklifts	0.0	0.0	0.2	0.3	0.0	0.0	0.0	31.4	0.0	31.6
Aerial Lifts	0.0	0.0	0.3	0.2	0.0	0.0	0.0	46.9	0.0	47.3
Excavators	0.1	0.1	0.5	1.0	0.0	0.0	0.0	217.5	0.1	219.4
Sum Max Hour Emissions	**1.2**	**1.0**	**6.4**	**12.0**	**0.0**	**0.0**	**0.0**	**1,811.1**	**0.6**	**1,826.9**

	CalEEMod Emission Factors (g/hphr) 2048 Calendar Year (Year 31 - 100)									
	TOG	**ROG**	**CO**	**NOX**	**SO2**	**PM10**	**PM2.5**	**CO2**	**CH4**	**CO2e**
Sum lb/yr Assuming 2016 Fuel Use	53,206.5	2,198.0	16,666.9	4,863.2	61.7	89.2	89.2	3,168,020.9	96.5	3,170,723.7
lb/day (assuming ratio of mining peak day to annual rate)	248.3	10.3	77.8	22.7	0.3	0.4	0.4	14,784.1	0.5	14,796.7
(Combined 1,018,509 Tons Produced in 2016)										
Annual Ems. Adjusted for Basline/Future Tonnage	**156,718.7**	**6,474.3**	**49,092.0**	**14,324.5**	**181.8**	**262.7**	**262.7**	**9,331,348.8**	**284.3**	**9,339,309.7**
Daily Ems. Adjusted for Baseline/Future Tonnage	731.4	30.2	229.1	66.8	0.8	1.2	1.2	43,546.3	1.3	43,583.4

Theoretical Max Hour	**TOG lb/hr**	**ROG lb/hr**	**CO lb/hr**	**NOX lb/hr**	**SO2 lb/hr**	**PM10 lb/hr**	**PM2.5 lb/hr**	**CO2 lb/hr**	**CH4 lb/hr**	**CO2e lb/hr**
Crawler Tractors	0.7	0.0	0.3	0.1	0.0	0.0	0.0	126.6	0.0	126.7
Crawler Tractors	1.5	0.1	0.3	0.1	0.0	0.0	0.0	164.9	0.0	165.0
Excavators	2.7	0.1	0.4	0.1	0.0	0.0	0.0	206.6	0.0	206.8
Excavators	0.3	0.0	0.3	0.1	0.0	0.0	0.0	48.1	0.0	48.1
Tractors/Loaders/Backhoes	2.2	0.0	0.2	0.1	0.0	0.0	0.0	125.2	0.0	125.3
Graders	0.2	0.0	0.4	0.0	0.0	0.0	0.0	69.3	0.0	69.4
Off-Highway Trucks	0.4	0.1	0.3	0.1	0.0	0.0	0.0	159.5	0.0	159.6
Off-Highway Trucks	0.4	0.1	0.3	0.1	0.0	0.0	0.0	174.3	0.0	174.4
Off-Highway Trucks	0.4	0.1	0.3	0.1	0.0	0.0	0.0	159.5	0.0	159.6
Tractors/Loaders/Backhoes	3.8	0.1	0.4	0.1	0.0	0.0	0.0	220.2	0.0	220.4
Tractors/Loaders/Backhoes	3.8	0.1	0.4	0.1	0.0	0.0	0.0	220.2	0.0	220.4
Cranes	0.4	0.0	0.2	0.0	0.0	0.0	0.0	81.8	0.0	81.8
Forklifts	0.1	0.0	0.2	0.0	0.0	0.0	0.0	36.3	0.0	36.4
Aerial Lifts	0.2	0.0	0.3	0.1	0.0	0.0	0.0	54.4	0.0	54.4
Excavators	5.4	0.1	0.5	0.1	0.0	0.0	0.0	253.5	0.0	253.7
Sum Max Hour Emissions	**22.5**	**0.7**	**4.9**	**1.4**	**0.0**	**0.0**	**0.0**	**2,100.2**	**0.1**	**2,102.0**

Haul Truck Emissions
See Calculations in Appendix J.

	Regional Increment	PTE (2026+)	PTE Baseline (2005)
Project Share + Additional (CO2e, MT)	709	1,534	5,359
Project Share + Additional (CO2, MT)	658	1,432	5,313
Project Share + Additional (NOx, tons)	0.42868	1.19822	65.94843
Project Share + Additional (PM2.5, tons)	0.01137	0.01718	2.38608
Project Share + Additional (PM10, tons)	0.01189	0.01796	2.49396
Project Share + Additional (CH4, MT)	0.00022	0.00053	0.16159
Project Share + Additional (N2O, MT)	0.19271	0.38389	0.15558
Project Share + Additional (ROG, tons)	0.00983	0.01544	3.89536
Project Share + Additional (TOG, tons)	0.01119	0.01758	4.43457
Project Share + Additional (NH3, tons)	0.21566	0.28565	0.09407
Project Share + Additional (CO, tons)	0.04561	0.08216	13.56203
Project Share + Additional (SOx, tons)	0.00394	0.00637	0.52317

		Employee Commutes Baseline										
		trips/yr	Paved VMT/yr	Unpaved VMT/yr	Total Fugitive Dust lb/yr	CO lb/yr	NOx lb/yr	PM10 lb/yr	PM2_5 lb/yr	ROG lb/yr	SOx lb/yr	CO2e lb/yr
Annual	Plant site	26,926.0	528,018.9	-	158,659.1	12,132.6	753.7	31.7	14.8	962.8	2.7	633,550.9
	Quarry site	500.0	9,805.0	3.0	2,946.2	12,132.6	753.7	31.7	14.8	962.8	2.7	633,550.9
	Total Both Sites	**27,426.0**	**537,823.9**	**3.0**	**161,605.3**	**24,265.1**	**1,507.4**	**63.4**	**29.5**	**1,925.6**	**5.3**	**1,267,101.8**
Daily	Plant site	107.7	2,112.1	-	634.6	48.5	3.0	0.1	0.1	3.9	0.0	2,534.2
	Quarry site	2.0	39.2	0.0	11.8	48.5	3.0	0.1	0.1	3.9	0.0	2,534.2
	Total Both Sites	**109.7**	**2,151.3**	**0.0**	**646.4**	**97.1**	**6.0**	**0.3**	**0.1**	**7.7**	**0.0**	**5,068.4**
Hourly	Plant site	26.9	528.0	-	158.7	12.1	0.8	0.0	0.0	1.0	0.0	633.6
	Quarry site	0.5	9.8	0.0	2.9	12.1	0.8	0.0	0.0	1.0	0.0	633.6
	Total Both Sites	**27.4**	**537.8**	**0.0**	**161.6**	**24.3**	**1.5**	**0.1**	**0.0**	**1.9**	**0.0**	**1,267.1**

		Employee Commutes Years 0 - 30											
		trips/yr	Paved VMT/yr	Unpaved VMT/yr	Total Fugitive Dust lb/yr	CO lb/yr	NOx lb/yr	PM10 lb/yr	PM2_5 lb/yr	ROG lb/yr	SOx lb/yr	CO2e lb/yr
Annual	Plant site	24,252.0	475,581.7	2.3	533,388.4	7,097.7	365.5	21.7	9.6	582.8	1.8	418,389.8
	Quarry site	6,000.0	117,660.0	0.6	131,961.5	4,925.5	40.1	22.8	8.2	262.8	1.8	426,021.4
	Total Both Sites	**30,252.0**	**593,241.7**	**2.8**	**665,349.9**	**12,023.2**	**405.6**	**44.5**	**17.9**	**845.6**	**3.6**	**844,411.3**
Daily	Plant site	97.0	1,902.3	0.0	2,133.6	28.4	1.5	0.1	0.0	2.3	0.0	1,673.6
	Quarry site	24.0	470.6	0.0	527.8	19.7	0.2	0.1	0.0	1.1	0.0	1,704.1
	Total Both Sites	**121.0**	**2,373.0**	**0.0**	**2,661.4**	**48.1**	**1.6**	**0.2**	**0.1**	**3.4**	**0.0**	**3,377.6**
Hourly	Plant site	24.3	475.6	0.0	533.4	7.1	0.4	0.0	0.0	0.6	0.0	418.4
	Quarry site	6.0	117.7	0.0	132.0	4.9	0.0	0.0	0.0	0.3	0.0	426.0
	Total Both Sites	**30.3**	**593.2**	**0.0**	**665.3**	**12.0**	**0.4**	**0.0**	**0.0**	**0.8**	**0.0**	**844.4**

		Employee Commutes Years 31 - 100										
		trips/yr	Paved VMT/yr	Unpaved VMT/yr	Total Fugitive Dust lb/yr	CO lb/yr	NOx lb/yr	PM10 lb/yr	PM2_5 lb/yr	ROG lb/yr	SOx lb/yr	CO2e lb/yr
Annual	Plant site	-	-	-	-	7,097.7	365.5	21.7	9.6	582.8	1.8	418,389.8
	Quarry site	30,252.0	756,300.0	-	227,253.0	4,925.5	40.1	22.8	8.2	262.8	1.8	426,021.4
	Total Both Sites	**30,252.0**	**756,300.0**	**-**	**227,253.0**	**12,023.2**	**405.6**	**44.5**	**17.9**	**845.6**	**3.6**	**844,411.3**
Daily	Plant site	-	-	-	-	28.4	1.5	0.1	0.0	2.3	0.0	1,673.6
	Quarry site	121.0	3,025.2	-	909.0	19.7	0.2	0.1	0.0	1.1	0.0	1,704.1
	Total Both Sites	**121.0**	**3,025.2**	**-**	**909.0**	**48.1**	**1.6**	**0.2**	**0.1**	**3.4**	**0.0**	**3,377.6**
Hourly	Plant site	-	-	-	-	7.1	0.4	0.0	0.0	0.6	0.0	418.4
	Quarry site	30.3	756.3	-	227.3	4.9	0.0	0.0	0.0	0.3	0.0	426.0
	Total Both Sites	**30.3**	**756.3**	**-**	**227.3**	**12.0**	**0.4**	**0.0**	**0.0**	**0.8**	**0.0**	**844.4**

250 workdays per year
4 hour during which employee trravel each day

Road Dust Emissions Factors

		lb/VMT	k	sL	W	P
PM10	EF =	0.30048	1	0.1	2.4	0
PM2.5	EF =	0.07512	0.25	0.1	2.4	0

assume no rain days is conservative

CalEEMod Fresno County Home-Work Trip Length: 19.61 miles
CalEEMod public road dust emissions factor: 0.1 lb/VMT

		Baseline (2018 Emissions Factors)											
		trips/yr	Paved VMT/yr	Unpaved VMT/yr	Total Fugitive Dust lb/yr	CO lb/yr	NOx lb/yr	PM10 lb/yr	PM2_5 lb/yr	ROG lb/yr	SOx lb/yr	TOG lb/yr	CO2e lb/yr
Plant Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	43,206.0	13,393.9	6,913.0	9,707.8	109.8	473.8	16.3	2,069.5	43.7	0.4	49.8	115,498.4
	Recycle Plant	2,000.0	620.0	560.0	785.0	6.4	27.5	0.9	167.1	2.5	0.0	2.9	6,711.4
	Aggregates Plant	84,922.0	26,325.8	23,778.2	33,332.5	270.8	1,169.1	40.1	7,094.8	107.9	0.9	122.8	284,974.7
	Mined Aggregate	-	-	-	-	-	-	-	-	-	-	-	-
	Site Services and Visitors	1,072.0	332.3	300.2	420.8	3.4	14.8	0.5	89.6	1.4	0.0	1.6	3,597.3
	Total Plant Site	**131,200.0**	**40,672.0**	**31,551.3**	**44,246.1**	**390.4**	**1,685.2**	**57.9**	**9,420.9**	**155.5**	**1.3**	**177.0**	**410,781.9**
Between Sites (1.8 miles)		**112,500**	**202,500**	**-**	**605.2**	**1,094.7**	**4,725.0**	**162.3**	**242.5**	**436.0**	**3.8**	**496.4**	**1,151,752.3**
Quarry Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Mined Aggregate	112,500.0	-	95,062.5	132,945.1	513.9	2,218.1	76.2	28,238.0	204.7	1.8	233.0	540,683.7
	Site Services and Visitors	-	-	-	-	-	-	-	-	-	-	-	-
	Total Quarry Site	**112,500.0**	**-**	**95,062.5**	**132,945.1**	**513.9**	**2,218.1**	**76.2**	**28,238.0**	**204.7**	**1.8**	**233.0**	**540,683.7**
	Total Both Sites	**243,700.0**	**40,672.0**	**126,613.8**	**177,191.2**	**904.3**	**3,903.3**	**134.0**	**37,658.9**	**360.2**	**3.1**	**410.1**	**951,465.6**
	Total with Between Haul	**356,200**	**243,172**	**126,614**	**177,796**	**1,999**	**8,628**	**296**	**37,901**	**796**	**7**	**906**	**2,103,218**

Notes: 1. Project emisisons of CO2e would be maximum in Year 1 of the project as demonstrated in Appendix J for off-site travel.
2. The carbon intensity of ULSD in 2026 is less than unmodified ULSD by this amount (see also Appendix L): 18.6%
3. The carbon intensity of ULSD in 2018 is less than the unmodified ULSD by this amount (see also Appendix L): 2%
4.. PM2.5 values include 21.2% of PM10 that is fugitive dust (CEDARIS), exhaust, and tire/brake wear.

		Years 0 - 30 (2026 Emissions Factors)											
		trips/yr	Paved VMT/yr	Unpaved VMT/yr	Total Fugitive Dust lb/yr	CO lb/yr	NOx lb/yr	PM10 lb/yr	PM2_5 lb/yr	ROG lb/yr	SOx lb/yr	TOG lb/yr	CO2e lb/yr
Plant Site	Asphalt Plant	41,851.9	11,300.0	10,044.4	7,040.5	16.1	100.3	6.6	1,495.0	1.5	0.3	1.8	82,924.8
	Ready Mix Plant	68,380.1	21,197.8	10,940.8	7,682.1	24.2	151.0	9.9	1,632.3	2.3	0.5	2.7	124,861.1
	Recycle Plant	32,006.8	9,922.1	8,961.9	6,281.5	14.2	88.7	5.8	1,333.8	1.4	0.3	1.6	73,366.0
	Aggregates Plant	22,000.0	6,820.0	6,160.0	4,317.6	9.8	61.0	4.0	916.8	0.9	0.2	1.1	50,428.3
	Mined Aggregate	11,000.0	-	2,200.0	1,538.4	1.7	10.3	0.7	326.4	0.2	0.0	0.2	8,547.2
	Site Services and Visitors	1,362.0	422.2	381.4	267.3	0.6	3.8	0.2	56.8	0.1	0.0	0.1	3,122.0
	Total Plant Site	**176,600.8**	**49,662.2**	**38,688.5**	**27,127.2**	**66.5**	**415.0**	**27.3**	**5,761.0**	**6.4**	**1.3**	**7.3**	**343,249.4**
Between Sites (1.8 miles)		**56,250.0**	**101,250.0**	**-**	**151.3**	**76.2**	**475.6**	**31.3**	**43.6**	**7.3**	**1.5**	**8.4**	**393,364.0**
Quarry Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	218,000.0	83,930.0	67,580.0	47,380.8	114.0	711.7	46.8	10,062.0	11.0	2.3	12.5	588,628.0
	Mined Aggregate	218,000.0	-	184,210.0	128,809.1	138.6	865.3	56.9	27,328.5	13.4	2.7	15.2	715,670.0
	Site Services and Visitors	1,228.0	472.8	380.7	266.9	0.6	4.0	0.3	56.7	0.1	0.0	0.1	3,315.8
	Total Quarry Site	**437,228.0**	**84,402.8**	**252,170.7**	**176,456.8**	**253.3**	**1,581.0**	**104.0**	**37,447.2**	**24.4**	**5.0**	**27.8**	**1,307,613.8**
	Total Both Sites	**613,828.8**	**134,065.0**	**290,859.2**	**203,584.0**	**319.7**	**1,996.0**	**131.3**	**43,208.2**	**30.8**	**6.3**	**35.1**	**1,650,863.2**
	Total with Between Haul	**670,079**	**235,315**	**290,859**	**203,735**	**396**	**2,472**	**163**	**43,252**	**38**	**8**	**43**	**2,044,227**

		Years 31 - 100 (2050 Emissions Factors)											
		trips/yr	Paved VMT/yr	Unpaved VMT/yr	Total Fugitive Dust lb/yr	CO lb/yr	NOx lb/yr	PM10 lb/yr	PM2_5 lb/yr	ROG lb/yr	SOx lb/yr	TOG lb/yr	CO2e lb/yr
Plant Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	-	-	-	-	-	-	-	-	-	-	-	-
	Mined Aggregate	-	-	-	-	-	-	-	-	-	-	-	-
	Site Services and Visitors	-	-	-	-	-	-	-	-	-	-	-	-
	Total Plant Site	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Between Sites (1.8 miles)													
Quarry Site	Asphalt Plant	41,851.9	14,857.4	-	22.2	8.7	31.5	5.0	6.5	0.8	0.2	0.9	48,203.3
	Ready Mix Plant	68,380.1	32,480.6	-	48.5	19.0	68.9	10.9	14.3	1.7	0.4	1.9	105,379.7
	Recycle Plant	32,006.8	12,322.6	9,922.1	6,956.5	13.0	47.2	7.5	1,477.5	1.2	0.3	1.3	72,170.8
	Aggregates Plant	240,000.0	92,400.0	74,400.0	52,162.4	97.7	353.6	56.1	11,078.8	8.7	2.1	9.9	541,165.0
	Mined Aggregate	240,000.0	-	48,000.0	33,564.1	28.1	101.8	16.1	7,121.4	2.5	0.6	2.9	155,730.9
	Site Services and Visitors	1,388.0	534.4	430.3	301.7	0.6	2.0	0.3	64.1	0.1	0.0	0.1	3,129.7
	Total Quarry Site	**623,626.8**	**152,595.0**	**132,752.4**	**93,055.3**	**167.2**	**605.0**	**96.0**	**19,762.6**	**15.0**	**3.5**	**17.0**	**925,779.4**
	Total Both Sites	**623,626.8**	**152,595.0**	**132,752.4**	**93,055.3**	**167.2**	**605.0**	**96.0**	**19,762.6**	**15.0**	**3.5**	**17.0**	**925,779.4**
	Total with Between Haul	**623,627**	**152,595**	**132,752**	**93,055**	**167**	**605**	**96**	**19,763**	**15**	**4**	**17**	**925,779**

		Baseline (2018 Emissions Factors)										
		trips/day	Paved VMT/day	Unpaved VMT/day	Total Fugitive Dust lb/day	CO lb/day	NOx lb/day	PM10 lb/day	PM2_5 lb/day	ROG lb/day	SOx lb/day	TOG lb/day
Plant Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	288.7	89.5	46.2	64.9	0.7	3.2	0.1	13.8	0.3	0.0	0.3
	Recycle Plant	242.0	75.0	67.8	95.0	0.8	3.3	0.1	20.2	0.3	0.0	0.4
	Aggregates Plant	480.0	148.8	134.4	188.4	1.5	6.6	0.2	40.1	0.6	0.0	0.7
	Mined Aggregate	-	-	-	-	-	-	-	-	-	-	-
	Site Services and Visitors	3.6	1.1	1.0	1.4	0.0	0.0	0.0	0.3	0.0	0.0	0.0
	Total Plant Site	**1,014.3**	**314.4**	**249.4**	**349.7**	**3.0**	**13.2**	**0.5**	**74.4**	**1.2**	**0.0**	**1.4**
Between Sites (1.8 miles)		**480**	**864**	**-**	**2.6**	**4.7**	**20.2**	**0.7**	**1.0**	**1.9**	**0.0**	**2.1**
Quarry Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	-	-	-	-	-	-	-	-	-	-	-
	Mined Aggregate	480.0	-	405.6	567.2	2.2	9.5	0.3	120.5	0.9	0.0	1.0
	Site Services and Visitors	-	-	-	-	-	-	-	-	-	-	-
	Total Quarry Site	**480.0**	**-**	**405.6**	**567.2**	**2.2**	**9.5**	**0.3**	**120.5**	**0.9**	**0.0**	**1.0**
Total Both Sites		**1,494.3**	**314.4**	**655.0**	**916.9**	**5.2**	**22.6**	**0.8**	**194.9**	**2.1**	**0.0**	**2.4**
Total with Between Haul		**1,974**	**1,178**	**655**	**919**	**10**	**43**	**1**	**196**	**4**	**0**	**4**

Notes: 1. Project emisisons of CO2e would be maximum in Year 1 of the project as demonstrated in Appendix J for off-site travel.

2. The carbon intensity of ULSD in 2026 is less than unmodified ULSD by this amount (see also Appendix L): 18.6%

3. The carbon intensity of ULSD in 2018 is less than the unmodified ULSD by this amount (see also Appendix L): 2%

		Years 0 - 30 (2026 Emissions Factors)										
		trips/day	Paved VMT/day	Unpaved VMT/day	Total Fugitive Dust lb/day	CO lb/day	NOx lb/day	PM10 lb/day	PM2_5 lb/day	ROG lb/day	SOx lb/day	TOG lb/day
Plant Site	Asphalt Plant	281.0	75.9	67.4	47.3	0.1	0.7	0.0	10.0	0.0	0.0	0.0
	Ready Mix Plant	288.7	89.5	46.2	32.4	0.1	0.6	0.0	6.9	0.0	0.0	0.0
	Recycle Plant	242.0	75.0	67.8	47.5	0.1	0.7	0.0	10.1	0.0	0.0	0.0
	Aggregates Plant	320.0	99.2	89.6	62.8	0.1	0.9	0.1	13.3	0.0	0.0	0.0
	Mined Aggregate	320.0	-	64.0	44.8	0.0	0.3	0.0	9.5	0.0	0.0	0.0
	Site Services and Visitors	9.0	2.8	2.5	1.8	0.0	0.0	0.0	0.4	0.0	0.0	0.0
	Total Plant Site	**1,460.6**	**342.4**	**337.5**	**236.5**	**0.5**	**3.2**	**0.2**	**50.2**	**0.0**	**0.0**	**0.1**
Between Sites (1.8 miles)		**240.0**	**432.0**	**-**	**0.6**	**0.3**	**2.0**	**0.1**	**0.2**	**0.0**	**0.0**	**0.0**
Quarry Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	960.0	369.6	297.6	208.6	0.5	3.1	0.2	44.3	0.0	0.0	0.1
	Mined Aggregate	960.0	-	811.2	567.2	0.6	3.8	0.3	120.3	0.1	0.0	0.1
	Site Services and Visitors	9.0	3.5	2.8	2.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
	Total Quarry Site	**1,929.0**	**373.1**	**1,111.6**	**777.8**	**1.1**	**7.0**	**0.5**	**165.1**	**0.1**	**0.0**	**0.1**
Total Both Sites		**3,389.6**	**715.4**	**1,449.1**	**1,014.3**	**1.6**	**10.2**	**0.7**	**215.3**	**0.2**	**0.0**	**0.2**
Total with Between Haul		**3,630**	**1,147**	**1,449**	**1,015**	**2**	**12**	**1**	**215**	**0**	**0**	**0**

		Years 31 - 100 (2050 Emissions Factors)										
		trips/day	Paved VMT/day	Unpaved VMT/day	Total Fugitive Dust lb/day	CO lb/day	NOx lb/day	PM10 lb/day	PM2_5 lb/day	ROG lb/day	SOx lb/day	TOG lb/day
Plant Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	-	-	-	-	-	-	-	-	-	-	-
	Mined Aggregate	-	-	-	-	-	-	-	-	-	-	-
	Site Services and Visitors	-	-	-	-	-	-	-	-	-	-	-
	Total Plant Site	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Between Sites (1.8 miles)		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Quarry Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	288.7	137.1	-	0.2	0.1	0.3	0.0	0.1	0.0	0.0	0.0
	Recycle Plant	240.0	92.4	74.4	52.2	0.1	0.4	0.1	11.1	0.0	0.0	0.0
	Aggregates Plant	1,120.0	431.2	347.2	243.4	0.5	1.7	0.3	51.7	0.0	0.0	0.0
	Mined Aggregate	1,120.0	-	224.0	156.6	0.1	0.5	0.1	33.2	0.0	0.0	0.0
	Site Services and Visitors	10.0	3.9	3.1	2.2	0.0	0.0	0.0	0.5	0.0	0.0	0.0
	Total Quarry Site	**2,778.7**	**664.6**	**648.7**	**454.6**	**0.8**	**2.8**	**0.4**	**96.5**	**0.1**	**0.0**	**0.1**
Total Both Sites		**2,778.7**	**664.6**	**648.7**	**454.6**	**0.8**	**2.8**	**0.4**	**96.5**	**0.1**	**0.0**	**0.1**
Total with Between Haul		**2,779**	**665**	**649**	**455**	**1**	**3**	**0**	**97**	**0**	**0**	**0**

		Baseline										
		trips/hr	Paved VMT/hr	Unpaved VMT/hr	Total Fugitive Dust lb/hr	CO lb/hr	NOx lb/hr	PM10 lb/hr	PM2_5 lb/hr	ROG lb/hr	SOx lb/hr	TOG lb/hr
Plant Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	43.3	13.4	6.9	9.7	0.1	0.5	0.0	2.1	0.0	0.0	0.0
	Recycle Plant	36.3	11.3	10.2	14.2	0.1	0.5	0.0	3.0	0.0	0.0	0.1
	Aggregates Plant	38.0	11.8	10.6	14.9	0.1	0.5	0.0	3.2	0.0	0.0	0.1
	Mined Aggregate	-	-	-	-	-	-	-	-	-	-	-
	Site Services and Visitors	0.5	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Plant Site	**118.1**	**36.6**	**27.9**	**39.1**	**0.3**	**1.5**	**0.1**	**8.3**	**0.1**	**0.0**	**0.2**
Between Sites (1.8 miles)		**38**	**68**	**-**	**0.2**	**0.4**	**1.6**	**0.1**	**0.1**	**0.1**	**0.0**	**0.2**
Quarry Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	-	-	-	-	-	-	-	-	-	-	-
	Mined Aggregate	38.0	-	32.1	44.9	0.2	0.7	0.0	9.5	0.1	0.0	0.1
	Site Services and Visitors	-	-	-	-	-	-	-	-	-	-	-
	Total Quarry Site	**38.0**	**-**	**32.1**	**44.9**	**0.2**	**0.7**	**0.0**	**9.5**	**0.1**	**0.0**	**0.1**
	Total Both Sites	**156.1**	**36.6**	**60.0**	**84.0**	**0.5**	**2.3**	**0.1**	**17.9**	**0.2**	**0.0**	**0.2**
	Total with Between Haul	**194**	**105**	**60**	**84**	**1**	**4**	**0**	**18**	**0**	**0**	**0**

		Years 0 - 30										
		trips/hr	Paved VMT/hr	Unpaved VMT/hr	Total Fugitive Dust lb/hr	CO lb/hr	NOx lb/hr	PM10 lb/hr	PM2_5 lb/hr	ROG lb/hr	SOx lb/hr	TOG lb/hr
Plant Site	Asphalt Plant	42.2	11.4	10.1	7.1	0.0	0.1	0.0	1.5	0.0	0.0	0.0
	Ready Mix Plant	43.3	13.4	6.9	4.9	0.0	0.1	0.0	1.0	0.0	0.0	0.0
	Recycle Plant	36.3	11.3	10.2	7.1	0.0	0.1	0.0	1.5	0.0	0.0	0.0
	Aggregates Plant	38.0	11.8	10.6	7.5	0.0	0.1	0.0	1.6	0.0	0.0	0.0
	Mined Aggregate	64.0	-	12.8	9.0	0.0	0.1	0.0	1.9	0.0	0.0	0.0
	Site Services and Visitors	1.4	0.4	0.4	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0
	Total Plant Site	**225.1**	**48.3**	**51.0**	**35.8**	**0.1**	**0.5**	**0.0**	**7.6**	**0.0**	**0.0**	**0.0**
Between Sites (1.8 miles)		**19.0**	**34.2**	**-**	**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Quarry Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	88.0	33.9	27.3	19.1	0.0	0.3	0.0	4.1	0.0	0.0	0.0
	Mined Aggregate	88.0	-	74.4	52.0	0.1	0.3	0.0	11.0	0.0	0.0	0.0
	Site Services and Visitors	1.4	0.5	0.4	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0
	Total Quarry Site	**177.4**	**34.4**	**102.1**	**71.4**	**0.1**	**0.6**	**0.0**	**15.2**	**0.0**	**0.0**	**0.0**
	Total Both Sites	**402.5**	**82.7**	**153.1**	**107.2**	**0.2**	**1.1**	**0.1**	**22.7**	**0.0**	**0.0**	**0.0**
	Total with Between Haul	**421**	**117**	**153**	**107**	**0**	**1**	**0**	**23**	**0**	**0**	**0**

		Years 31 - 100										
		trips/hr	Paved VMT/hr	Unpaved VMT/hr	Total Fugitive Dust lb/hr	CO lb/hr	NOx lb/hr	PM10 lb/hr	PM2_5 lb/hr	ROG lb/hr	SOx lb/hr	TOG lb/hr
Plant Site	Asphalt Plant	-	-	-	-	-	-	-	-	-	-	-
	Ready Mix Plant	-	-	-	-	-	-	-	-	-	-	-
	Recycle Plant	-	-	-	-	-	-	-	-	-	-	-
	Aggregates Plant	-	-	-	-	-	-	-	-	-	-	-
	Mined Aggregate	-	-	-	-	-	-	-	-	-	-	-
	Site Services and Visitors	-	-	-	-	-	-	-	-	-	-	-
	Total Plant Site	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Between Sites (1.8 miles)		-	-	-	-	-	-	-	-	-	-	-
Quarry Site	Asphalt Plant	42.0	14.9	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ready Mix Plant	43.3	20.6	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Recycle Plant	36.0	13.9	11.2	7.8	0.0	0.1	0.0	1.7	0.0	0.0	0.0
	Aggregates Plant	88.0	33.9	27.3	19.1	0.0	0.1	0.0	4.1	0.0	0.0	0.0
	Mined Aggregate	88.0	-	17.6	12.3	0.0	0.0	0.0	2.6	0.0	0.0	0.0
	Site Services and Visitors	1.5	0.6	0.5	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0
	Total Quarry Site	**298.8**	**83.8**	**56.5**	**39.6**	**0.1**	**0.3**	**0.0**	**8.4**	**0.0**	**0.0**	**0.0**
Total Both Sites		**298.8**	**83.8**	**56.5**	**39.6**	**0.1**	**0.3**	**0.0**	**8.4**	**0.0**	**0.0**	**0.0**
Total with Between Haul		**299**	**84**	**57**	**40**	**0**	**0**	**0**	**8**	**0**	**0**	**0**

EMFAC 2025 T7 Tractor Class 8 Emissions in lbs/VMT

	Pollutant							
Calendar Year	CO (lb/VMT)	NOx (lb/VMT)	PM10 Total (lb/VMT)	PM25 Total (lb/VMT)	ROG (lb/VMT)	SOx (lb/VMT)	TOG (lb/VMT)	CO2e (lb/VMT)
2005	0.025647013	0.060177	0.004238639	0.003812018	0.011356029	0.000541403	0.012927975	6.200121689
2006	0.024863706	0.059019	0.004059375	0.003640508	0.011198053	0.000539765	0.012748131	6.178720386
2007	0.023784591	0.057465	0.00370181	0.003298412	0.010862287	2.00134E-05	0.012365887	6.16797111
2008	0.023330556	0.056404	0.003557962	0.003160787	0.010784799	1.99763E-05	0.012277672	6.157201758
2009	0.021462556	0.052892	0.003203514	0.002822256	0.009924634	1.99712E-05	0.011298441	6.155167572
2010	0.023388209	0.055239	0.003466962	0.003075971	0.010885192	1.9955E-05	0.012391963	6.154788603
2011	0.022156007	0.052431	0.003249686	0.002871448	0.010318661	1.99064E-05	0.01174701	6.147505207
2012	0.020482669	0.049579	0.002980975	0.002616745	0.009500217	1.9867E-05	0.010815274	6.14117981
2013	0.015619115	0.042061	0.002218056	0.001894848	0.007336341	1.9472E-05	0.008351866	6.036190272
2014	0.010302343	0.03705	0.001527857	0.001240364	0.004634858	1.93454E-05	0.005276433	6.010475817
2015	0.008735069	0.032883	0.001284451	0.001012746	0.003865365	1.91552E-05	0.004400424	5.961096772
2016	0.007364394	0.028955	0.001078219	0.000820745	0.003169185	1.89762E-05	0.003607875	5.91970059
2017	0.006133092	0.026203	0.000906174	0.000660088	0.002521866	1.87463E-05	0.002870953	5.860702146
2018	0.005405692	0.023333	0.000801273	0.000564108	0.002153283	1.85194E-05	0.002451348	5.803740286
2019	0.003940869	0.018701	0.000606353	0.000384157	0.001452373	1.81105E-05	0.001653416	5.698798883
2020	0.003484803	0.016865	0.00056283	0.000345626	0.001229764	1.78182E-05	0.001399993	5.613370413
2021	0.002940771	0.015341	0.000498885	0.000286789	0.000976154	1.75216E-05	0.001111277	5.530150247
2022	0.002592077	0.014377	0.000460161	0.000251342	0.000815676	1.72625E-05	0.000928585	5.457244538
2023	0.001005996	0.008632	0.000318894	0.000123665	0.00012374	1.64128E-05	0.000140869	5.229075355
2024	0.000907909	0.007299	0.000313807	0.000119004	0.000100669	1.59145E-05	0.000114604	5.078854766
2025	0.000819901	0.005824	0.00031037	0.000115702	8.3609E-05	1.54039E-05	9.51824E-05	4.923822752
2026	0.000752452	0.004697	0.000309041	0.000113882	7.25373E-05	1.49071E-05	8.25782E-05	4.772821881
2027	0.000701651	0.00422	0.000310221	0.000113898	6.53249E-05	1.44547E-05	7.43675E-05	4.635212391
2028	0.000661983	0.003651	0.000312622	0.000114389	6.04186E-05	1.40216E-05	6.8782E-05	4.503443434
2029	0.000634076	0.003357	0.000315694	0.000115298	5.73129E-05	1.36448E-05	6.52464E-05	4.388749645
2030	0.000616007	0.003147	0.000318979	0.000116354	5.5453E-05	1.33283E-05	6.3129E-05	4.292429464
2031	0.000604989	0.002972	0.000322132	0.000117399	5.43304E-05	1.30755E-05	6.1851E-05	4.215474077
2032	0.000598301	0.002822	0.000324898	0.000118326	5.36533E-05	1.28815E-05	6.10802E-05	4.156416777
2033	0.000592937	0.002687	0.000327379	0.000119157	5.31229E-05	1.27284E-05	6.04764E-05	4.109777927
2034	0.000589755	0.002581	0.000329497	0.000119875	5.28032E-05	1.26111E-05	6.01124E-05	4.074087599
2035	0.000588464	0.002497	0.000331274	0.000120484	5.26636E-05	1.25234E-05	5.99535E-05	4.04736263
2036	0.000588008	0.00242	0.000332711	0.000120976	5.26083E-05	1.24582E-05	5.98906E-05	4.027536605
2037	0.000586362	0.002345	0.000333901	0.000121374	5.24521E-05	1.24076E-05	5.97127E-05	4.012116043
2038	0.000584883	0.002291	0.000334772	0.000121665	5.23138E-05	1.23752E-05	5.95553E-05	4.002249926
2039	0.000585065	0.002265	0.000335352	0.000121866	5.23263E-05	1.23547E-05	5.95695E-05	3.996023889
2040	0.000585561	0.002245	0.000335733	0.000122	5.23682E-05	1.23419E-05	5.96172E-05	3.992103455
2041	0.000586522	0.002223	0.000335973	0.000122085	5.24528E-05	1.2334E-05	5.97135E-05	3.989712576
2042	0.000585352	0.0022	0.00033611	0.000122123	5.23473E-05	1.23291E-05	5.95934E-05	3.988217956
2043	0.000584347	0.002192	0.000336193	0.000122147	5.22568E-05	1.2326E-05	5.94904E-05	3.98727728
2044	0.000585022	0.002198	0.000336259	0.000122175	5.23169E-05	1.23241E-05	5.95589E-05	3.986688445
2045	0.000585738	0.002198	0.000336302	0.000122194	5.23807E-05	1.23229E-05	5.96314E-05	3.986317814
2046	0.000586246	0.002189	0.000336324	0.000122201	5.24261E-05	1.23221E-05	5.96831E-05	3.986084512
2047	0.000584938	0.002179	0.000336325	0.000122193	5.2309E-05	1.23216E-05	5.95498E-05	3.985935695
2048	0.000584278	0.002182	0.000336331	0.000122194	5.225E-05	1.23213E-05	5.94826E-05	3.985841016
2049	0.000584779	0.002192	0.000336346	0.000122204	5.22948E-05	1.23211E-05	5.95336E-05	3.985780683
2050	0.000585905	0.00212	0.000336296	0.000122155	5.23954E-05	1.2321E-05	5.96482E-05	3.985742306

EMFAC 2025 T7 Tractor Class 8 Emissions in lbs/VMT by Period

	CO	NOx	PM10	PM2_5	ROG	SOx	TOG	Co2e
Baseline	0.00541	0.02333	0.00080	0.00056	0.00215	1.85E-05	2.45E-03	5.80
Years 0 - 29	0.00075	0.00470	0.00031	0.00011	0.00007	1.49E-05	8.26E-05	4.77
Year 30-99	0.00059	0.00212	0.00034	0.00012	0.00005	1.23E-05	5.96E-05	3.99

2018	0.00541	0.02333	0.00080	0.00056	0.00215	0.00002	0.00245	5.80374
2026	0.00075	0.00470	0.00031	0.00011	0.00007	0.00001	0.00008	4.77282
2056	0.00059	0.00212	0.00034	0.00012	0.00005	0.00001	0.00006	3.98574

Note: Calendar years after 2050 are assumed to have equivalent emissions to 2050.

Region	Calendar Year	Vehicle Cat	Model Year	Speed	Fuel	Population	Total VMT	Trips
Fresno (SJV)	2005	LDT1	Agg.	Agg.	GAS	44,903.7	1,300,819.1	206,509.4
Fresno (SJV)	2006	LDT1	Agg.	Agg.	GAS	44,364.1	1,225,531.9	194,019.8
Fresno (SJV)	2007	LDT1	Agg.	Agg.	GAS	42,604.6	1,147,715.4	181,325.5
Fresno (SJV)	2008	LDT1	Agg.	Agg.	GAS	40,858.9	1,084,176.8	172,743.3
Fresno (SJV)	2009	LDT1	Agg.	Agg.	GAS	38,936.7	1,040,194.6	165,765.2
Fresno (SJV)	2010	LDT1	Agg.	Agg.	GAS	37,377.6	1,028,623.7	162,573.4
Fresno (SJV)	2011	LDT1	Agg.	Agg.	GAS	35,287.0	955,977.7	149,797.8
Fresno (SJV)	2012	LDT1	Agg.	Agg.	GAS	33,983.3	917,865.5	143,690.2
Fresno (SJV)	2013	LDT1	Agg.	Agg.	GAS	33,245.5	896,689.1	140,501.7
Fresno (SJV)	2014	LDT1	Agg.	Agg.	GAS	32,268.3	878,165.8	138,386.8
Fresno (SJV)	2015	LDT1	Agg.	Agg.	GAS	33,144.0	952,491.8	152,277.3
Fresno (SJV)	2016	LDT1	Agg.	Agg.	GAS	32,142.7	998,243.8	161,948.6
Fresno (SJV)	2017	LDT1	Agg.	Agg.	GAS	32,740.5	973,837.6	155,581.8
Fresno (SJV)	2018	LDT1	Agg.	Agg.	GAS	32,218.1	965,540.5	153,170.5
Fresno (SJV)	2019	LDT1	Agg.	Agg.	GAS	33,843.5	980,249.0	152,629.2
Fresno (SJV)	2020	LDT1	Agg.	Agg.	GAS	32,524.6	773,477.3	119,970.0
Fresno (SJV)	2021	LDT1	Agg.	Agg.	GAS	33,648.6	914,745.6	139,030.0
Fresno (SJV)	2022	LDT1	Agg.	Agg.	GAS	30,480.4	812,914.1	119,462.7
Fresno (SJV)	2023	LDT1	Agg.	Agg.	GAS	29,564.8	789,702.3	117,808.0
Fresno (SJV)	2024	LDT1	Agg.	Agg.	GAS	28,687.8	757,388.2	113,403.7
Fresno (SJV)	2025	LDT1	Agg.	Agg.	GAS	27,896.9	733,195.2	109,999.4
Fresno (SJV)	2026	LDT1	Agg.	Agg.	GAS	27,162.8	707,303.7	106,421.2
Fresno (SJV)	2027	LDT1	Agg.	Agg.	GAS	26,462.9	681,894.2	102,942.9
Fresno (SJV)	2028	LDT1	Agg.	Agg.	GAS	25,798.7	662,722.5	100,327.4
Fresno (SJV)	2029	LDT1	Agg.	Agg.	GAS	25,161.0	645,845.0	98,001.6
Fresno (SJV)	2030	LDT1	Agg.	Agg.	GAS	24,500.8	629,063.9	95,766.4
Fresno (SJV)	2031	LDT1	Agg.	Agg.	GAS	23,837.1	612,780.0	93,619.6
Fresno (SJV)	2032	LDT1	Agg.	Agg.	GAS	23,199.2	597,003.7	91,539.6
Fresno (SJV)	2033	LDT1	Agg.	Agg.	GAS	22,589.7	581,878.7	89,532.4
Fresno (SJV)	2034	LDT1	Agg.	Agg.	GAS	21,978.7	566,889.0	87,578.2
Fresno (SJV)	2035	LDT1	Agg.	Agg.	GAS	21,408.9	552,573.5	85,691.8
Fresno (SJV)	2036	LDT1	Agg.	Agg.	GAS	20,814.5	538,188.7	83,759.4
Fresno (SJV)	2037	LDT1	Agg.	Agg.	GAS	20,257.0	524,433.0	81,878.7
Fresno (SJV)	2038	LDT1	Agg.	Agg.	GAS	19,695.2	510,691.7	80,035.3
Fresno (SJV)	2039	LDT1	Agg.	Agg.	GAS	19,136.1	497,181.0	78,245.4
Fresno (SJV)	2040	LDT1	Agg.	Agg.	GAS	18,578.3	483,875.5	76,455.9
Fresno (SJV)	2041	LDT1	Agg.	Agg.	GAS	18,021.6	470,735.1	74,670.6
Fresno (SJV)	2042	LDT1	Agg.	Agg.	GAS	17,448.0	457,608.5	72,900.4
Fresno (SJV)	2043	LDT1	Agg.	Agg.	GAS	16,879.4	444,667.6	71,172.2
Fresno (SJV)	2044	LDT1	Agg.	Agg.	GAS	16,362.4	432,728.9	69,553.3
Fresno (SJV)	2045	LDT1	Agg.	Agg.	GAS	15,855.0	421,011.7	67,939.8
Fresno (SJV)	2046	LDT1	Agg.	Agg.	GAS	15,376.0	409,813.3	66,391.7
Fresno (SJV)	2047	LDT1	Agg.	Agg.	GAS	14,904.7	398,840.8	64,885.0
Fresno (SJV)	2048	LDT1	Agg.	Agg.	GAS	14,516.7	389,065.2	63,494.8
Fresno (SJV)	2049	LDT1	Agg.	Agg.	GAS	14,164.5	379,793.7	62,153.1
Fresno (SJV)	2050	LDT1	Agg.	Agg.	GAS	13,856.9	371,629.0	60,918.0

Source: EMFAC2025 (v2.1.0) Emissions Inventory
Region Type: Sub-Area
Region: Fresno (SJV)

Calendar Year: 2005 to 2050
Vehicle Classification: EMFAC202Y Categories Season: Annual
Units: miles/day for Combustion VMT and Electric VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Gasoline and Diesel Fuel Consumption, 1000 diesel equivalent gallons/day for Natural Gas Fuel Consumption, kWh/day for Energy Consumption, kg/day

Calendar Year	ROG_TOTAL	TOG_TOTAL	CO_TOTEX	NOx_TOTEX	CO2_TOTEX	PM10_TOTAL	PM2.5_TOTAL	SOx_TOTEX	N2O_TOTEX
2005	1.966267053	2.146595768	24.1099569	2.032994323	665.86282	0.042486213	0.025302713	0.002820002	0.106746476
2006	1.842709824	2.010407943	22.267529	1.867745673	629.11882	0.039214681	0.023029151	0.002652474	0.098631286
2007	1.676931459	1.828555339	20.0842777	1.666345444	591.06841	0.035641762	0.020538554	0.002479271	0.088653957
2008	1.481720202	1.616196354	17.8772753	1.438595005	553.57308	0.032247044	0.018103079	0.00233864	0.077501685
2009	1.352018256	1.47523365	16.3307846	1.294659186	535.60779	0.029973013	0.016454627	0.002263595	0.070560947
2010	1.259530449	1.375607774	15.3862778	1.210040968	520.16915	0.028735512	0.015400403	0.002224971	0.066679958
2011	1.151848718	1.257725392	13.9851227	1.085696637	480.72732	0.026299046	0.013897132	0.002062379	0.060284649
2012	1.064333762	1.161571134	12.9048281	0.98167563	460.06564	0.024663193	0.012789752	0.001968444	0.05499553
2013	0.996368233	1.086209331	12.0509226	0.890694961	443.77841	0.023535926	0.011979985	0.00190762	0.050442208
2014	0.895107009	0.975044661	10.8287929	0.790030052	428.05267	0.022244604	0.010986233	0.001844982	0.04567844
2015	0.867815165	0.944254964	10.6132411	0.741386914	457.60814	0.023419484	0.011329178	0.001962308	0.04365648
2016	0.82814254	0.900886495	10.3370152	0.694536704	471.96058	0.024084807	0.011479913	0.002023997	0.041565381
2017	0.761409989	0.826535635	9.45727646	0.612682123	455.58608	0.02323106	0.010951521	0.00195277	0.037390605
2018	0.690502592	0.748603993	8.70123698	0.540544207	445.42984	0.02273777	0.010591799	0.001911641	0.033738485
2019	0.724921618	0.785271135	8.90294764	0.564085418	450.9551	0.023268354	0.010861727	0.00193374	0.035404706
2020	0.595697153	0.640047179	6.76377876	0.41463342	353.13672	0.018261615	0.008470643	0.001514346	0.026350311
2021	0.616219593	0.663210366	7.48610067	0.436015428	411.60858	0.021282429	0.009758496	0.001765466	0.028110202
2022	0.564086592	0.606357469	6.77229773	0.395513224	366.05096	0.019034854	0.008714876	0.001571857	0.025440621
2023	0.536141257	0.575060242	6.40410079	0.363643426	353.16013	0.018377006	0.008352703	0.00151472	0.023582608
2024	0.501027652	0.536382416	5.9866211	0.32955165	335.32886	0.017513555	0.007902251	0.001439642	0.02152556
2025	0.468013347	0.500237603	5.62995987	0.300011103	321.2001	0.016834625	0.007538136	0.001378984	0.019740188
2026	0.433375378	0.462625559	5.27801276	0.271800568	306.35258	0.0161301	0.007170868	0.00131524	0.018000966
2027	0.405054789	0.431503433	4.9383006	0.245391748	291.924	0.015427174	0.006801319	0.001253295	0.016377945
2028	0.383708233	0.407879238	4.70344402	0.222239388	280.55479	0.014860643	0.006490405	0.001204484	0.014981921
2029	0.360010158	0.382089047	4.44219081	0.200759594	270.22485	0.014345453	0.00620249	0.001160136	0.01370122
2030	0.336532146	0.356519011	4.18474421	0.178680454	260.13961	0.013827882	0.00591156	0.001116837	0.012423408
2031	0.312766542	0.330820393	3.9361541	0.157092884	250.49754	0.013323927	0.005627729	0.001075442	0.01119509
2032	0.289244506	0.30552224	3.70401425	0.137581833	241.34891	0.012843205	0.005359185	0.001036165	0.01008212
2033	0.271382467	0.286092018	3.49090027	0.120421991	232.75582	0.012392579	0.005110693	0.000999273	0.009093966
2034	0.250664438	0.263819894	3.28524219	0.106087471	224.44864	0.011950178	0.004868011	0.000963608	0.00822681
2035	0.241246998	0.253061117	3.10177819	0.095063906	216.69877	0.011538871	0.004646107	0.000930336	0.007521854
2036	0.228964974	0.239464501	2.9194284	0.084310892	209.08839	0.011147243	0.004443086	0.000897663	0.006835725
2037	0.211000773	0.220346705	2.75316211	0.07504341	201.9716	0.01077874	0.004254087	0.000867109	0.00623769
2038	0.197810942	0.206113408	2.60716269	0.066232234	195.11836	0.010415796	0.00406997	0.000837687	0.005669031
2039	0.183421275	0.190754602	2.47143635	0.058483588	188.52247	0.010062762	0.003892347	0.000809369	0.005156567
2040	0.166484002	0.17291472	2.34665811	0.051192032	182.16628	0.009721544	0.003723295	0.00078208	0.004672438
2041	0.152887468	0.158453283	2.22375808	0.043999256	176.00319	0.009405315	0.003575344	0.000755621	0.004201069
2042	0.138952523	0.14372063	2.10902847	0.037356294	169.957	0.009091898	0.003429892	0.000729663	0.003755731
2043	0.127840719	0.13193848	2.00324439	0.03142857	164.10832	0.008786674	0.003289864	0.000704554	0.003350519
2044	0.118397812	0.121988505	1.91496448	0.02685872	158.8047	0.008507145	0.00316217	0.000681784	0.003026981
2045	0.110092914	0.113286113	1.83364594	0.022860695	153.59958	0.008235335	0.00303903	0.000659437	0.002738314
2046	0.102232826	0.105080912	1.75897696	0.019466086	148.71821	0.007979855	0.002925046	0.00063848	0.00248856
2047	0.095391032	0.097930532	1.68833756	0.016340045	144.00555	0.007731677	0.002815221	0.000618248	0.002256982
2048	0.090057457	0.092384295	1.63245214	0.014364781	139.94851	0.007516261	0.002721915	0.00060083	0.002102044
2049	0.085969769	0.088148444	1.58452113	0.013372187	136.18548	0.007321142	0.002641584	0.000584675	0.002009962
2050	0.082311168	0.084371623	1.54274788	0.012545382	132.92598	0.007149214	0.002571061	0.000570681	0.001931966

Calendar Year	ROG lbs/VMT	TOG lbs/VMT	CO lbs/VMT	NOX lbs/VMT	CO2 lbs/VMT	PM10 lbs/VMT	PM2.5 lbs/VMT	SOx lbs/VMT	N2O lbs/VMT
2005	3.02E-03	3.30E-03	3.71E-02	3.13E-03	1.02E+00	6.53E-05	3.89E-05	4.34E-06	1.64E-04
2006	3.01E-03	3.28E-03	3.63E-02	3.05E-03	1.03E+00	6.40E-05	3.76E-05	4.33E-06	1.61E-04
2007	2.92E-03	3.19E-03	3.50E-02	2.90E-03	1.03E+00	6.21E-05	3.58E-05	4.32E-06	1.54E-04
2008	2.73E-03	2.98E-03	3.30E-02	2.65E-03	1.02E+00	5.95E-05	3.34E-05	4.31E-06	1.43E-04
2009	2.60E-03	2.84E-03	3.14E-02	2.49E-03	1.03E+00	5.76E-05	3.16E-05	4.35E-06	1.36E-04
2010	2.45E-03	2.67E-03	2.99E-02	2.35E-03	1.01E+00	5.59E-05	2.99E-05	4.33E-06	1.30E-04
2011	2.41E-03	2.63E-03	2.93E-02	2.27E-03	1.01E+00	5.50E-05	2.91E-05	4.31E-06	1.26E-04
2012	2.32E-03	2.53E-03	2.81E-02	2.14E-03	1.00E+00	5.37E-05	2.79E-05	4.29E-06	1.20E-04
2013	2.22E-03	2.42E-03	2.69E-02	1.99E-03	9.90E-01	5.25E-05	2.67E-05	4.25E-06	1.13E-04
2014	2.04E-03	2.22E-03	2.47E-02	1.80E-03	9.75E-01	5.07E-05	2.50E-05	4.20E-06	1.04E-04
2015	1.82E-03	1.98E-03	2.23E-02	1.56E-03	9.61E-01	4.92E-05	2.38E-05	4.12E-06	9.17E-05
2016	1.66E-03	1.80E-03	2.07E-02	1.39E-03	9.46E-01	4.83E-05	2.30E-05	4.06E-06	8.33E-05
2017	1.56E-03	1.70E-03	1.94E-02	1.26E-03	9.36E-01	4.77E-05	2.25E-05	4.01E-06	7.68E-05
2018	1.43E-03	1.55E-03	1.80E-02	1.12E-03	9.23E-01	4.71E-05	2.19E-05	3.96E-06	6.99E-05
2019	1.48E-03	1.60E-03	1.82E-02	1.15E-03	9.20E-01	4.75E-05	2.22E-05	3.95E-06	7.22E-05
2020	1.54E-03	1.65E-03	1.75E-02	1.07E-03	9.13E-01	4.72E-05	2.19E-05	3.92E-06	6.81E-05
2021	1.35E-03	1.45E-03	1.64E-02	9.53E-04	9.00E-01	4.65E-05	2.13E-05	3.86E-06	6.15E-05
2022	1.39E-03	1.49E-03	1.67E-02	9.73E-04	9.01E-01	4.68E-05	2.14E-05	3.87E-06	6.26E-05
2023	1.36E-03	1.46E-03	1.62E-02	9.21E-04	8.94E-01	4.65E-05	2.12E-05	3.84E-06	5.97E-05
2024	1.32E-03	1.42E-03	1.58E-02	8.70E-04	8.85E-01	4.62E-05	2.09E-05	3.80E-06	5.68E-05
2025	1.28E-03	1.36E-03	1.54E-02	8.18E-04	8.76E-01	4.59E-05	2.06E-05	3.76E-06	5.38E-05
2026	1.23E-03	1.31E-03	1.49E-02	7.69E-04	8.66E-01	4.56E-05	2.03E-05	3.72E-06	5.09E-05
2027	1.19E-03	1.27E-03	1.45E-02	7.20E-04	8.56E-01	4.52E-05	1.99E-05	3.68E-06	4.80E-05
2028	1.16E-03	1.23E-03	1.42E-02	6.71E-04	8.47E-01	4.48E-05	1.96E-05	3.63E-06	4.52E-05
2029	1.11E-03	1.18E-03	1.38E-02	6.22E-04	8.37E-01	4.44E-05	1.92E-05	3.59E-06	4.24E-05
2030	1.07E-03	1.13E-03	1.33E-02	5.68E-04	8.27E-01	4.40E-05	1.88E-05	3.55E-06	3.95E-05
2031	1.02E-03	1.08E-03	1.28E-02	5.13E-04	8.18E-01	4.35E-05	1.84E-05	3.51E-06	3.65E-05
2032	9.69E-04	1.02E-03	1.24E-02	4.61E-04	8.09E-01	4.30E-05	1.80E-05	3.47E-06	3.38E-05
2033	9.33E-04	9.83E-04	1.20E-02	4.14E-04	8.00E-01	4.26E-05	1.76E-05	3.43E-06	3.13E-05
2034	8.84E-04	9.31E-04	1.16E-02	3.74E-04	7.92E-01	4.22E-05	1.72E-05	3.40E-06	2.90E-05
2035	8.73E-04	9.16E-04	1.12E-02	3.44E-04	7.84E-01	4.18E-05	1.68E-05	3.37E-06	2.72E-05
2036	8.51E-04	8.90E-04	1.08E-02	3.13E-04	7.77E-01	4.14E-05	1.65E-05	3.34E-06	2.54E-05
2037	8.05E-04	8.40E-04	1.05E-02	2.86E-04	7.70E-01	4.11E-05	1.62E-05	3.31E-06	2.38E-05
2038	7.75E-04	8.07E-04	1.02E-02	2.59E-04	7.64E-01	4.08E-05	1.59E-05	3.28E-06	2.22E-05
2039	7.38E-04	7.67E-04	9.94E-03	2.35E-04	7.58E-01	4.05E-05	1.57E-05	3.26E-06	2.07E-05
2040	6.88E-04	7.15E-04	9.70E-03	2.12E-04	7.53E-01	4.02E-05	1.54E-05	3.23E-06	1.93E-05
2041	6.50E-04	6.73E-04	9.45E-03	1.87E-04	7.48E-01	4.00E-05	1.52E-05	3.21E-06	1.78E-05
2042	6.07E-04	6.28E-04	9.22E-03	1.63E-04	7.43E-01	3.97E-05	1.50E-05	3.19E-06	1.64E-05
2043	5.75E-04	5.93E-04	9.01E-03	1.41E-04	7.38E-01	3.95E-05	1.48E-05	3.17E-06	1.51E-05
2044	5.47E-04	5.64E-04	8.85E-03	1.24E-04	7.34E-01	3.93E-05	1.46E-05	3.15E-06	1.40E-05
2045	5.23E-04	5.38E-04	8.71E-03	1.09E-04	7.30E-01	3.91E-05	1.44E-05	3.13E-06	1.30E-05
2046	4.99E-04	5.13E-04	8.58E-03	9.50E-05	7.26E-01	3.89E-05	1.43E-05	3.12E-06	1.21E-05
2047	4.78E-04	4.91E-04	8.47E-03	8.19E-05	7.22E-01	3.88E-05	1.41E-05	3.10E-06	1.13E-05
2048	4.63E-04	4.75E-04	8.39E-03	7.38E-05	7.19E-01	3.86E-05	1.40E-05	3.09E-06	1.08E-05
2049	4.53E-04	4.64E-04	8.34E-03	7.04E-05	7.17E-01	3.86E-05	1.39E-05	3.08E-06	1.06E-05
2050	4.43E-04	4.54E-04	8.30E-03	6.75E-05	7.15E-01	3.85E-05	1.38E-05	3.07E-06	1.04E-05

EMFAC 2025 Light Truck Emissions by Period (lbs/VMT)

	CO	**NOx**	**PM10**	**PM2_5**	**ROG**	**SOx**	**TOG**	**Co2e**
Baseline	0.01802	0.00112	0.00005	0.00002	0.00143	0.00000	0.00155	0.94117
Years 0 - 29	0.01492	0.00077	0.00005	0.00002	0.00123	0.00000	0.00131	0.87974
Year 30-99	0.00830	0.00007	0.00004	0.00001	0.00044	0.000003	0.00045	0.71812

Note: After calendar year 2050, 2050 emission factors are assumed.

Natural Gas Fired Asphalt Plant with Fabric Filter		Years 1 - 30				
Substance	**CAS#**	**lbs/ton asphalt Produced**	lbs/ton apsh	**LB/HR**	**LB/DAY**	**LB/YR**
PM10	85101	**0.023**	**0.0025**	**1.2**	**8.3**	**1,244.3**
CO	42101	**0.13**	**N/A**	**65.0**	**433.3**	**65,000.0**
CO2	124389	**33**	**N/A**	**16,500.0**	**109,989.0**	**16,500,000.0**
Nox	42603	**0.0087 (a)**	**N/A**	**4.4**	**29.1**	**4,371.4**
SO2	42401	**0.0034**	**N/A**	**1.7**	**11.3**	**1,700.0**
CH4	74828	**0.012**	**N/A**	**6.0**	**40.0**	**6,000.0**
VOC	43104	**0.0082 (b)**	**N/A**	**4.1**	**27.3**	**4,100.0**
2,2,4-Trimethylpentane	**540841**	4.00E-05	**4.33E-06**	**0.0022**		**2.2**
2-Methyl naphthalene	**91576**	7.40E-05	**8.01E-06**	**0.0040**		**4.0**
Acenaphthene	**83329**	1.40E-06	**1.51E-07**	**0.0001**		**0.1**
Acenaphthylene	**208968**	8.60E-06	**9.31E-07**	**0.0005**		**0.5**
Anthracene	**120127**	2.20E-07	**2.38E-08**	**0.0000**		**0.0**
Antimony	**7440360**	1.80E-07	**1.95E-08**	**0.0000**		**0.0**
Arsenic	**7440382**	5.60E-07	**6.06E-08**	**0.0000**		**0.0**
Barium	**7440393**	5.80E-06	**6.28E-07**	**0.0003**		**0.3**
Benzene	**71432**	3.90E-04	**4.22E-05**	**0.0211**		**21.1**
Benzo(a)anthracene	**56553**	2.10E-07	**2.27E-08**	**0.0000**		**0.0**
Benzo(a)pyrene	**50328**	9.80E-09	**1.06E-09**	**0.0000**		**0.0**
Benzo(b)fluoranthene	**205992**	1.00E-07	**1.08E-08**	**0.0000**		**0.0**
Benzo(g,h,i)perylene	**191242**	4.00E-08	**4.33E-09**	**0.0000**		**0.0**
Benzo(k)fluoranthene	**207089**	4.10E-08	**4.44E-09**	**0.0000**		**0.0**
Cadmium	**7440439**	4.10E-07	**4.44E-08**	**0.0000**		**0.0**
Chromium	**7440473**	5.50E-06	**5.95E-07**	**0.0003**		**0.3**
Chrysene	**218019**	1.80E-07	**1.95E-08**	**0.0000**		**0.0**
Cobalt	**7440484**	2.60E-08	**2.81E-09**	**0.0000**		**0.0**
Copper	**7440508**	3.10E-06	**3.35E-07**	**0.0002**		**0.2**
Ethylbenzene	**100414**	2.40E-04	**2.60E-05**	**0.0130**		**13.0**
Ethylene	**74851**	7.00E-03	**7.57E-04**	**0.3787**		**378.7**
Fluorene	**86737**	3.80E-06	**4.11E-07**	**0.0002**		**0.2**
Fluoranthene	**206440**	6.10E-07	**6.60E-08**	**0.0000**		**0.0**
Formaldehyde	**50000**	3.10E-03	**3.35E-04**	**0.1677**		**167.7**
Hexane	**110543**	9.20E-04	**9.95E-05**	**0.0498**		**49.8**
Hexvalent Chromium	**18540299**	4.50E-07	**4.87E-08**	**0.0000**		**0.0**
Indeno(1,2,3-cd)pyrene	**193395**	7.00E-09	**7.57E-10**	**0.0000**		**0.0**
Lead	**7439921**	6.20E-07	**6.71E-08**	**0.0000**		**0.0**
Manganese	**7439965**	7.70E-06	**8.33E-07**	**0.0004**		**0.4**
Mercury	**7439976**	2.40E-07	**2.60E-08**	**0.0000**		**0.0**
Methyl Chloroform	**71556**	4.80E-05	**5.19E-06**	**0.0026**		**2.6**
Naphthalene	**91203**	9.00E-05	**9.74E-06**	**0.0049**		**4.9**
Nickel	**7440020**	6.30E-05	**6.82E-06**	**0.0034**		**3.4**
Perylene	**198550**	8.80E-09	**9.52E-10**	**0.0000**		**0.0**
Phenanthrene	**85018**	7.60E-06	**8.22E-07**	**0.0004**		**0.4**
Phosphorus	**7723140**	2.80E-05	**3.03E-06**	**0.0015**		**1.5**
Pyrene	**129000**	5.40E-07	**5.84E-08**	**0.0000**		**0.0**
Selenium	**7782492**	3.50E-07	**3.79E-08**	**0.0000**		**0.0**
Silver	**7440224**	4.80E-07	**5.19E-08**	**0.0000**		**0.0**
Thallium	**7440280**	4.10E-09	**4.44E-10**	**0.0000**		**0.0**
Toluene	**108883**	1.50E-04	**1.62E-05**	**0.0081**		**8.1**
Xylene (mixed xylenes)	**1330207**	2.00E-04	**2.16E-05**	**0.0108**		**10.8**
Zinc	**7440666**	6.10E-05	**6.60E-06**	**0.0033**		**3.3**

Natural Gas Fired Asphalt Plant with Fabric Filter — **Years 31 - 100**

Substance	CAS#	lbs/ton asphalt Produced	lbs/ton apshalt produced	LB/HR	LB/DAY	LB/YR
PM10	85101	**0.023**	**0.0025**	**1.2**	**8.3**	**1,244.3**
CO	42101	**0.13**	**N/A**	**65.0**	**433.3**	**65,000.0**
CO2	124389	**33**	**N/A**	**16,500.0**	**109,989.0**	**16,500,000.0**
Nox	42603	**0.0087 (a)**	**N/A**	**4.4**	**29.1**	**4,371.4**
SO2	42401	**0.0034**	**N/A**	**1.7**	**11.3**	**1,700.0**
CH4	74828	**0.012**	**N/A**	**6.0**	**40.0**	**6,000.0**
VOC	43104	**0.0082 (b)**	**N/A**	**4.1**	**27.3**	**4,100.0**
2,2,4-Trimethylpentane	**540841**	4.00E-05	**4.33E-06**	**0.0022**		**2.2**
2-Methyl naphthalene	**91576**	7.40E-05	**8.01E-06**	**0.0040**		**4.0**
Acenaphthene	**83329**	1.40E-06	**1.51E-07**	**0.0001**		**0.1**
Acenaphthylene	**208968**	8.60E-06	**9.31E-07**	**0.0005**		**0.5**
Anthracene	**120127**	2.20E-07	**2.38E-08**	**0.0000**		**0.0**
Antimony	**7440360**	1.80E-07	**1.95E-08**	**0.0000**		**0.0**
Arsenic	**7440382**	5.60E-07	**6.06E-08**	**0.0000**		**0.0**
Barium	**7440393**	5.80E-06	**6.28E-07**	**0.0003**		**0.3**
Benzene	**71432**	3.90E-04	**4.22E-05**	**0.0211**		**21.1**
Benzo(a)anthracene	**56553**	2.10E-07	**2.27E-08**	**0.0000**		**0.0**
Benzo(a)pyrene	**50328**	9.80E-09	**1.06E-09**	**0.0000**		**0.0**
Benzo(b)fluoranthene	**205992**	1.00E-07	**1.08E-08**	**0.0000**		**0.0**
Benzo(g,h,i)perylene	**191242**	4.00E-08	**4.33E-09**	**0.0000**		**0.0**
Benzo(k)fluoranthene	**207089**	4.10E-08	**4.44E-09**	**0.0000**		**0.0**
Cadmium	**7440439**	4.10E-07	**4.44E-08**	**0.0000**		**0.0**
Chromium	**7440473**	5.50E-06	**5.95E-07**	**0.0003**		**0.3**
Chrysene	**218019**	1.80E-07	**1.95E-08**	**0.0000**		**0.0**
Cobalt	**7440484**	2.60E-08	**2.81E-09**	**0.0000**		**0.0**
Copper	**7440508**	3.10E-06	**3.35E-07**	**0.0002**		**0.2**
Ethylbenzene	**100414**	2.40E-04	**2.60E-05**	**0.0130**		**13.0**
Ethylene	**74851**	7.00E-03	**7.57E-04**	**0.3787**		**378.7**
Fluorene	**86737**	3.80E-06	**4.11E-07**	**0.0002**		**0.2**
Fluoranthene	**206440**	6.10E-07	**6.60E-08**	**0.0000**		**0.0**
Formaldehyde	**50000**	3.10E-03	**3.35E-04**	**0.1677**		**167.7**
Hexane	**110543**	9.20E-04	**9.95E-05**	**0.0498**		**49.8**
Hexvalent Chromium	**18540299**	4.50E-07	**4.87E-08**	**0.0000**		**0.0**
Indeno(1,2,3-cd)pyrene	**193395**	7.00E-09	**7.57E-10**	**0.0000**		**0.0**
Lead	**7439921**	6.20E-07	**6.71E-08**	**0.0000**		**0.0**
Manganese	**7439965**	7.70E-06	**8.33E-07**	**0.0004**		**0.4**
Mercury	**7439976**	2.40E-07	**2.60E-08**	**0.0000**		**0.0**
Methyl Chloroform	**71556**	4.80E-05	**5.19E-06**	**0.0026**		**2.6**
Naphthalene	**91203**	9.00E-05	**9.74E-06**	**0.0049**		**4.9**
Nickel	**7440020**	6.30E-05	**6.82E-06**	**0.0034**		**3.4**
Perylene	**198550**	8.80E-09	**9.52E-10**	**0.0000**		**0.0**
Phenanthrene	**85018**	7.60E-06	**8.22E-07**	**0.0004**		**0.4**
Phosphorus	**7723140**	2.80E-05	**3.03E-06**	**0.0015**		**1.5**
Pyrene	**129000**	5.40E-07	**5.84E-08**	**0.0000**		**0.0**
Selenium	**7782492**	3.50E-07	**3.79E-08**	**0.0000**		**0.0**
Silver	**7440224**	4.80E-07	**5.19E-08**	**0.0000**		**0.0**
Thallium	**7440280**	4.10E-09	**4.44E-10**	**0.0000**		**0.0**
Toluene	**108883**	1.50E-04	**1.62E-05**	**0.0081**		**8.1**
Xylene (mixed xylenes)	**1330207**	2.00E-04	**2.16E-05**	**0.0108**		**10.8**
Zinc	**7440666**	6.10E-05	**6.60E-06**	**0.0033**		**3.3**

Notes:

Emission factors are from March 2004 *AP 42 Table 11.1-8 unless otherwise noted below.*

(a) Nox emission factor based on BACT standard of 36 ppmv @ 3% O2, resulting in the following factor in terms of lb/MMcf:

(b) VOC emission factor from AP-42, Table 11.1-6.

Scalar Factors used to account for modern BACT, per SCAQMD Grain Loading Limit Rule 1155		
0.000190476	mmscf gas/ton asphalt	**Source**
500	ton asphalt / hr	
0.095238	mmscf gas/hr	
1050	mmbtu/mmscf	
99.9999	mmbtu/hr	
8710	dscf/million btu	
870999.129	dscf/hr	ethod 19 tabl
0.01	grain/dscf	
7000	grain/lb	
8709.99129	grain/hr	
1.24428447	lb PM/hr	
0.002488569	PM lb/ton asphalt	

Notes:

Emission factors are from March 2004 *AP 42 Table 11.1*

(a) Nox emission factor based on BACT standard of 36 l

(b) VOC emission factor from AP-42, Table 11.1-6.

Scalar Factors used to account for modern BAC	
SCAQMD Grain Loading Limit Rule 1155	
0.000190476	mmscf gas/ton asphalt
500	ton asphalt / hr
0.095238	mmscf gas/hr
1050	mmbtu/mmscf
99.9999	mmbtu/hr
8710	dscf/million btu
870999.129	dscf/hr
0.01	grain/dscf
7000	grain/lb
8709.99129	grain/hr
1.24428447	lb PM/hr
0.002488569	PM lb/ton asphalt

Emissions from Asphalt Storage and Loadout

Silo Emissions

	Throughput (tons)			Emission Factors (lb/ton)*			Controlled Project Emissions (lb)		
Pollutant	**Hour**	**Day**	**Year**	**Uncontrolled**	**Control Factor**	**Controlled**	**Hour**	**Day**	**Year**
VOC	500	3,333	500,000	0.01220	0%	0.012200	6.10	40.66	6,100.00
PM				0.00059	95%	0.000030	0.01	0.10	14.75
PM10				0.00059	95%	0.000030	0.01	0.10	14.75
CO				0.00118	0%	0.001180	0.59	3.93	590.00

* Emission factors based on AP42 Table 11.1-14, (T=325, V=-0.5). Control efficiencies for Blue Smoke Control.
12 hours at peak rate on the maximum day.

Load Out Emissions

	Throughput (tons)			Emission Factors (lb/ton)*			Controlled Project Emissions (lb)		
Pollutant	**Hour**	**Day**	**Year**	**Uncontrolled**	**Control Factor**	**Controlled**	**Hour**	**Day**	**Year**
VOC	500	3,333	500,000	0.00391	0%	0.003910	1.96	13.03	1,955.00
PM				0.00052	95%	0.000026	0.01	0.09	13.00
PM10				0.00052	95%	0.000026	0.01	0.09	13.00
CO				0.00135	0%	0.001350	0.68	4.50	675.00

Process rates		Blue Smoke Filter Control Efficiency	
(tph)	(tpy)	0%	VOC
500	500,000	95%	PM

* Emission factors based AP42 Table 11.1-14 (T=325, V=-0.5). See calculation below.

Total Change in Loadout and Silo Emissions

	Emissions (lb)		
Pollutant	**Hour**	**Day**	**Year**
VOC	8.06	53.69	8,055.00
PM	0.03	0.18	27.75
PM10	0.03	0.18	27.75
CO	1.27	8.43	1,265.00

Load Out and Silo Emissions

Organic PM and TOC EF Determination

V = -0.5

T = 325

Load Out Organic PM EF = $0.00141(-V)e^{[(0.0251)(T+460)-20.43]}$

Organic PM EF = 0.000341

Silo Fill Organic PM EF = $0.00105(-V)e^{[(0.0251)(T+460)-20.43]}$

Organic PM E 0.000254

Load Out TOC EF = $0.0172(-V)e^{[(0.0251)(T+460)-20.43]}$

TOC EF = 0.004159

Silo Fill TOC EF = $0.0504(-V)e^{[(0.0251)(T+460)-20.43]}$

TOC EF = 0.012187

Proposed Project

Pollutant	Load Out				Silo				Emissions		Control Efficiency	Controlled Emissions	
	Fraction (%)	EF (lb/ton)	missions (lb/h	missions (lb/yr	Fraction (%)	EF (lb/ton)	Emissions (lb/hr)	missions (lb/y	Hourly (lb/hr)	Annual (lb/yr)		Hourly (lb/hr)	Annual (lb/yr)
Organic PM Emissions		0.000341				0.000254							
Total PAH (except naphthale	4.68%	1.6E-05	0.01	7.98	9.58%	2.43E-05	0.01	12.16	0.02	20.14	95%	0.00	1.01
Benzo(a)anthracene	0.019%	6.5E-08	0.00	0.03	0.06%	1.42E-07	0.00	0.07	0.00	0.10	95%	0.00	0.01
Benzo(a)pyrene	0.0023%	7.8E-09	0.00	0.00	0.00%	-	-	-	0.00	0.00	95%	0.00	0.00
Benzo(b)fluoranthene	0.0076%	2.6E-08	0.00	0.01	0.00%	-	-	-	0.00	0.01	95%	0.00	0.00
Benzo(k)fluoranthene	0.0022%	7.5E-09	0.00	0.00	0.00%	-	-	-	0.00	0.00	95%	0.00	0.00
Chrysene	0.1030%	3.5E-07	0.00	0.18	0.21%	5.33E-07	0.00	0.27	0.00	0.44	95%	0.00	0.02
Indeno(1,2,3-cd)pyrene	0.00047%	1.6E-09	0.00	0.00	0.00%	-	-	-	0.00	0.00	95%	0.00	0.00
Dibenz(a,h)anthracene	0.00037%	1.3E-09	0.00	0.00	0.00%	-	-	-	0.00	0.00	95%	0.00	0.00
Naphthalene	1.25%	4.3E-06	0.00	2.13	1.82%	4.62E-06	0.00	2.31	0.00	4.44	95%	0.00	0.22
Phenol	1.18%	4.0E-06	0.00	2.01	0%	-	-	-	0.00	2.01	95%	0.00	0.10

VOC Emissions from Asphalt Storage and Loadout

Criteria Pollutant	CAS#	Combined Storage and Loadout Emissions Factor (lb/ton)	Uncontrolled (LB/HR)	Uncontrolled (LB/DAY)	Uncontrolled (LB/YR)	Controlled (LB/HR)	Controlled (LB/DAY)	Controlled (LB/YR)
VOC	43104	**0.016346**	8.06	53.69	8,055.00	8.06	53.69	8,055.00
TOC	nd	**0.017389**	8.57	57.12	8,569.15	8.57	57.12	8,569.15
CH4	74828	**0.001130**	0.56	3.71	556.99	0.56	3.71	556.99

Substance	CAS#	Weight Fraction Asphalt Storage VOC*	Uncontrolled (LB/HR)		Uncontrolled (LB/YR)	Controlled (LB/HR)		Controlled (LB/YR)
Ethylbenzene	100414	0.023200	0.19		186.88	0.19		186.88
Naphthalene	91203	0.065300	0.53		525.99	0.53		525.99
O-xylene	95476	0.037300	0.30		300.45	0.30		300.45
Trimethylbenzene	25551137	0.089500	0.72		720.92	0.72		720.92
Toluene	108883	0.064500	0.52		519.55	0.52		519.55
Xylene	1330207	0.085600	0.69		689.51	0.69		689.51

References:

The emission factors were taken from a worst case summation of CARB Speciation Profiles 715, 716.
Pollutants required for toxic reporting: HAPS w/o Risk Factor or Non - HAPs Current as of 5/14/2013.
SJVAPCD Silo VOC speciation also applied to Loadout VOC emissions and the sum is represented in this table.
PM emissions omitted from SJVAPCD guidance are calculated elsewhere using AP-42 methodology.

Asphalt Tank Oil Heater Emissions

Inputs			MMscf /hr	MMcf/day	MMscf /yr		
<10 MMBTU/hr			1.90E-03	4.56E-02	16.7		
				Emissions			
Substance	CAS#	Emission Factor lbs/ MMscf	LB/HR	LB/DAY	LB/YR		
PM10	85101	7.6	0.01	0.35	126.92		
CO	42101	84	0.16	3.83	1,402.80		
CO2	124389	120153	228	5,479	2,006,548	Tons CO2	1003.273882
NOx	42603	25.5	0.05	1.16	425.85	Metric Tons	910.1550164
SO2	42401	0.6	0.00	0.03	10.02		
CH4	74828	2.27	0.00	0.10	37.85		
TOC		11	0.02	0.50			
VOC	43104	5.5	0.01	0.25	91.85		
Substances	CAS#	<10 MMBTU/hr Emission Factor	LB/HR		LB/YR		
Acetaldehyde	75070	4.30E-03	0.00		0.07		
Acrolein **	107028	0.00E+00	-		-		
Benzene	71432	8.00E-03	0.00		0.13		
Ethyl Benzene	100414	9.50E-03	0.00		0.16		
Formaldehyde	50000	1.70E-02	0.00		0.28		
Hexane	110543	6.30E-03	0.00		0.11		
Naphthalene	91203	3.00E-04	0.00		0.01		
PAH's	1151	1.00E-04	0.00		0.00		
Propylene	115071	7.31E-01	0.00		12.21		
Toluene	108883	3.66E-02	0.00		0.61		
Xylenes	1330207	2.72E-02	0.00		0.45		

References:

* The emission factors are from the table, "Natural Gas Fired External Combustion Equipment" in the May 2001 update of *VCAPCD AB 2588 Combustion Emission Factors* . PAHs emission factor adjusted from table values to subtract Naphthalene portion.

** Acrolein can not be accurately measured and is assigned zero emissions.
https://ww3.arb.ca.gov/ab2588/acrolein.htm
Rate assumed to be 2 MMBtu/hr or less operating 8,670 hr/yr.
NOx emissions factor equal to value in Rule 4308 Table 2 or 0.024 lb/MMBtu * 1050 btu/cf.

0.00002	ppm NOx @ 3% O2
46	lb/lbmole
0.002585315	dscf/lb-mol
8743	dscf/MMbtu for 1050 btu/scf natural gas at 70 deg F
20.9	% O2 in atmosphere
3	% O2 standard
0.024280359	lb/MMBtu
1050	btu/cf HHV
25.5	lb/MMcf

Equations from https://www.valleyair.org/notices/Docs/2015/04-01-15_(S-1133606)/S-1133606.pdf
Other factors from https://ww3.arb.ca.gov/ei/areasrc/districtmeth/sjvalley/mthd_industrialngcombustion_sjv_2005.pdf

GHG factors from : https://ww3.arb.ca.gov/cc/inventory/doc/docs1/1a2m_manufacturing_fuelcombustion_naturalgas_co2_2017.htm

Dust Emissions From Activities Related to Baseline Asphalt and Concrete Processing

	Project Emissions		Mitigated Emissions	
	PM10	PM2.5	PM10	PM2.5
Hourly (lb/hr)	0.36	0.05	0.36	0.05
Daily (lb/day)	4.29	0.55	4.29	0.55
Annual (lb/yr)	38.90	5.70	38.90	5.70

Activity Levels

Throughput (tons/hr)	225
Operation (hr/day)	12
Production (tons/year)	25,000

Recycle Plant Fugitive Dust Emissions Calculations

Equipment	Percent of Plant Feed Rate	Rate (ton/hr)	PM10 (lb/ton)	PM2.5 (lb/ton)	PM10 (lb/hr)	PM2.5 (lb/hr)	PM10 (lb/day)	PM2.5 (lb/day)	PM10 (lb/yr)	PM2.5 (lb/yr)
Crusher (500 tph) with feeder	100%	225	0.00054	0.00010	0.12	0.02	1.46	0.27	13.50	2.50
Side discharge conveyor with magnet	100%	225	0.000046	0.000013	0.01	0.00	0.12	0.04	1.15	0.33
Screen (3-deck, 6' x 24')	120%	270	0.00074	0.00005	0.20	0.01	2.40	0.16	18.50	1.25
Oversize return conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	1.15	0.33
Transfer conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	1.15	0.33
Radial stacker conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	1.15	0.33
Transfer conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	1.15	0.33
Radial stacker conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	1.15	0.33
Total					**0.36**	**0.05**	**4.29**	**0.55**	**38.90**	**5.70**

AP-42 Section 11.19.2 Emission Factors [1,2]

	PM10 (lb/ton)	$PM_{2.5}$ (lb/ton)	Control Method
conveyor transfer point	0.000046	0.000013	water spray
screening	0.00074	0.000050	controlled (lb/ton)
crushing	0.00054	0.00010	controlled (lb/ton)
wet processing	0	0	saturation

[1] Emission factors for controlled emissions as defined in AP-42 Section 11.19.2 dated 8/04 and Section 13.2 for loader drop of aggregate with 3% moisture.

[2] $PM_{2.5}$ emissions based on SCAQMD's "Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds" from October, 2006, Mineral Process Loss: Loading and Unloading Bulk Materials and Mineral

Dust Emissions From Activities Related to Future Asphalt and Concrete Processing (Years 0 - 30)

	Project Emissions		Mitigated Emissions	
	PM10	**PM2.5**	**PM10**	**PM2.5**
Hourly (lb/hr)	0.36	0.05	0.36	0.05
Daily (lb/day)	4.29	0.55	4.29	0.55
Annual (lb/yr)	311.20	45.60	311.20	45.60

Activity Levels

Throughput (tons/hr)	225
Operation (hr/day)	12
Production (tons/year)	200,000

Recycle Plant Fugitive Dust Emissions Calculations

Equipment	Percent of Plant Feed Rate	Rate (ton/hr)	PM10 (lb/ton)	PM2.5 (lb/ton)	PM10 (lb/hr)	PM2.5 (lb/hr)	PM10 (lb/day)	PM2.5 (lb/day)	PM10 (lb/yr)	PM2.5 (lb/yr)
Crusher (500 tph) with feeder	100%	225	0.00054	0.00010	0.12	0.02	1.46	0.27	108.00	20.00
Side discharge conveyor with magnet	100%	225	0.000046	0.000013	0.01	0.00	0.12	0.04	9.20	2.60
Screen (3-deck, 6' x 24')	120%	270	0.00074	0.00005	0.20	0.01	2.40	0.16	148.00	10.00
Oversize return conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Transfer conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Radial stacker conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Transfer conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Radial stacker conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Total					**0.36**	**0.05**	**4.29**	**0.55**	**311.20**	**45.60**

AP-42 Section 11.19.2 Emission Factors [1,2]

	PM10 (lb/ton)	$PM_{2.5}$ (lb/ton)	Control Method
conveyor transfer point	0.000046	0.000013	water spray
screening	0.00074	0.000050	controlled (lb/ton)
crushing	0.00054	0.00010	controlled (lb/ton)
wet processing	0	0	saturation

[1] Emission factors for controlled emissions as defined in AP-42 Section 11.19.2 dated 8/04 and Section 13.2 for loader drop of aggregate with 3% moisture.

[2] $PM_{2.5}$ emissions based on SCAQMD's "Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds" from October, 2006, Mineral Process Loss: Loading and Unloading Bulk Materials and Mineral

Dust Emissions From Activities Related to Future Asphalt and Concrete Processing (Years 0 - 30)

	Project Emissions		Mitigated Emissions	
	PM10	**PM2.5**	**PM10**	**PM2.5**
Hourly (lb/hr)	0.36	0.05	0.36	0.05
Daily (lb/day)	4.29	0.55	4.29	0.55
Annual (lb/yr)	311.20	45.60	311.20	45.60

Activity Levels	
Throughput (tons/hr)	225
Operation (hr/day)	12
Production (tons/year)	200,000

Recycle Plant Fugitive Dust Emissions Calculations

Equipment	Percent of Plant Feed Rate	Rate (ton/hr)	PM10 (lb/ton)	PM2.5 (lb/ton)	PM10 (lb/hr)	PM2.5 (lb/hr)	PM10 (lb/day)	PM2.5 (lb/day)	PM10 (lb/yr)	PM2.5 (lb/yr)
Crusher (500 tph) with feeder	100%	225	0.00054	0.00010	0.12	0.02	1.46	0.27	108.00	20.00
Side discharge conveyor with magnet	100%	225	0.000046	0.000013	0.01	0.00	0.12	0.04	9.20	2.60
Screen (3-deck, 6' x 24')	120%	270	0.00074	0.00005	0.20	0.01	2.40	0.16	148.00	10.00
Oversize return conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Transfer conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Radial stacker conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Transfer conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Radial stacker conveyor	50%	113	0.000046	0.000013	0.01	0.00	0.06	0.02	9.20	2.60
Total					**0.36**	**0.05**	**4.29**	**0.55**	**311.20**	**45.60**

AP-42 Section 11.19.2 Emission Factors [1,2]

	PM10 (lb/ton)	$PM_{2.5}$ (lb/ton)	Control Method
conveyor transfer point	0.000046	0.000013	water spray
screening	0.00074	0.000050	controlled (lb/ton)
crushing	0.00054	0.00010	controlled (lb/ton)
wet processing	0	0	saturation

[1] Emission factors for controlled emissions as defined in AP-42 Section 11.19.2 dated 8/04 and Section 13.2 for loader drop of aggregate with 3% moisture.

[2] $PM_{2.5}$ emissions based on SCAQMD's "Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds" from October, 2006, Mineral Process Loss: Loading and Unloading Bulk Materials and

Dust Emissions From Activities Related to Baseline Asphalt and Concrete Processing
CalEEMod Genset Emissions Estimation

Equiptment	Year	HP	Load Factor
Generator Sets	2018	750	0.74

	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4	
g/hpr-hr	30.5	0.2	1.0	2.4	0.0	0.1	0.1	568.3	0.0	
g/hr	16,914.2	119.3	570.5	1,315.4	2.8	38.9	38.9	315,405.9	10.5	
g/yr	1,879,353.3	13,258.3	63,393.3	146,150.0	308.3	4,316.7	4,316.7	35,045,105.0	1,171.7	
lb/hr	37.3	0.3	1.3	2.9	0.0	0.1	0.1	695.4	0.0	696.0
lb/yr	4,143.3	29.2	139.8	322.2	0.7	9.5	9.5	77,261.2	2.6	77,333.6
lb/day	447.5	3.2	15.1	34.8	0.1	1.0	1.0	8344.2	0.3	8,352.0

Dust Emissions From Activities Related to Future Asphalt and Concrete Processing (Years 0 - 30)
CalEEMod Genset Emissions Estimation

Equiptment	Year	HP	Load Factor
Generator Sets	2019	750	0.74

	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
g/hpr-hr	28.7	0.2	1.0	2.1	0.0	0.1	0.1	568.3	0.0
g/hr	15,914.6	112.1	563.3	1,167.7	2.8	34.4	34.4	315,405.9	10.0
g/yr	14,146,333.3	99,653.3	500,733.3	1,037,973.3	2,466.7	30,586.7	30,586.7	280,360,840.0	8,880.0
lb/hr	35.1	0.2	1.2	2.6	0.0	0.1	0.1	695.4	0.0
lb/yr	31,187.3	219.7	1,103.9	2,288.3	5.4	67.4	67.4	618,089.9	19.6
lb/day	421.03	2.97	14.90	30.89	0.07	0.91	0.91	8344.21	0.26

Dust Emissions From Activities Related to Future Asphalt and Concrete Processing (Years 0 - 30)
CalEEMod Genset Emissions Estimation

Equiptment	Year	HP	Load Factor
Generator Sets	2049	750	0.74

	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
g/hpr-hr	15.0	0.1	1.0	0.3	0.0	0.0	0.0	568.3	0.0
g/hr	8,323.3	58.8	542.8	153.7	2.8	5.0	5.0	315,406.5	5.0
g/yr	7,398,520.0	52,293.3	482,480.0	136,653.3	2,466.7	4,440.0	4,440.0	280,361,333.3	4,440.0
lb/hr	18.3	0.1	1.2	0.3	0.0	0.0	0.0	695.4	0.0
lb/yr	16,310.9	115.3	1,063.7	301.3	5.4	9.8	9.8	618,090.9	9.8
lb/day	220.20	1.56	14.36	4.07	0.07	0.13	0.13	8344.23	0.13

AP-42 Table 11.12-6 Footnote a: Composition of one yard of concrete	
Material	**Weight (lb)**
Coarse Aggregate	1865
Sand	1428
Cement	491
Cement Supplement	73
Water	167
Sum	4024
Tons Concrete per yard	2.012

Per Email from John Buada Dated April 24 2018	
Cubic Yards Concrete Per load	9.5

Estimated	
Max Trucks Per Hour Load Out	20

Data Type/Units	Data	Source
BSFC (lbs fuel/hp-hr):	0.367	(based on offroad 2011)
Density of Diesel Fuel (lb/gal):	7.05	(based on AP-42 App A)
C02 Content of Diesel Fuel (kg/gal)	10.15	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
CH4 Content of Diesel Fuel (kg/gal)	0.0015	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
NO2 Content of Diesel Fuel (kg/gal)	0.0001	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
CH4 Emissions Per VMT (g/VMT)	0.0051	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
NO2 Emissions per VMT (g/VMT)	0.0048	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
CO2e CH4	28	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
CO2e N20	265	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
Density of Dry Packed Gravel	120	AP-42 Appendix A
Fuel Sulfur Content	15	(CARB Ultra Low Diesel Standard)
CO2 Emissions, lbs/kWh, CAMX Region	0.72412	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
CH4 Emissions, lbs/kWh, CAMX Region	0.0000302	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
N2O Emissions, lbs/kWh, CAMX Region	0.0000081	(based on California Climate Action Registry General Reporting Protocol 3.1 Appendix C)
Ready Mix Plant electricity use, kWh/yd^3	3.86	A cradle to Gate Life Cycle Assesment of Ready Mixed Concrete Manufacture by NRMCA Members (http://www.nrmca.org/sustainability/EPDProgram/Downloads/NRMCA%20LCA%20Project%20Report_v1.0b_20140929.pdf)

Basline Unpaved Road Emission Factors

Unpaved Road emissions factor from AP42 Section 13.2.2

EF (lb/VMT)= 4.9 * (S/12)$^{0.7}$ * (W/3)$^{0.45}$

	Mining Haul Trucks		On-road Trucks	
	PM10	**PM2.5**	**PM10**	**PM2.5**
S = silt content (%) =	4.8		4.8	
W_l = loaded truck wt (tons) =	120		40	
W_u = unloaded truck wt (tons) =	50		15	
W = avg truck weight	85		27.5	
EF (lb/VMT) =	11.62	2.46	6.99	1.48
Baseline C.E. =	80%	80%	80%	80%
Baseline EF (lb/VMT) =	**2.32**	**0.49**	**1.40**	**0.30**

Silt content based on mean Sand and Gravel Processing from AP-42 Table 13.2.2-1.
Control efficiency for unpaved roads in baseline is 80% for watering.
PM2.5 emissions are 21.2% of PM10 for unpaved roads (SCAQMD *Updated CEIDARS Table).*

Future Unpaved Road Emission Factors

Unpaved Road emissions factor from AP42 Section 13.2.2

EF (lb/VMT)= 4.9 * (S/12)$^{0.7}$ * (W/3)$^{0.45}$

	Mining Haul Trucks		On-road Trucks	
	PM10	**PM2.5**	**PM10**	**PM2.5**
S = silt content (%) =	4.8		4.8	
W_l = loaded truck wt (tons) =	120		40	
W_u = unloaded truck wt (tons) =	50		15	
W = avg truck weight	85		27.5	
EF (lb/VMT) =	11.62	2.46	6.99	1.48
Future C.E. =	90%	90%	90%	90%
Future EF (lb/VMT) =	**1.16**	**0.25**	**0.70**	**0.15**

Silt content based on mean Sand and Gravel Processing from AP-42 Table 13.2.2-1.
PM2.5 emissions are 21.2% of PM10 for unpaved roads (SCAQMD *Updated CEIDARS Table).*

Basline Paved Road Emission Factors

Paved Road emissions factor from AP42 Section 13.2.1

EF (lb/VMT)= k * $(sL)^{0.91}$ * $(W)^{1.02}$

	Mining Haul Trucks		On-road Trucks	
	PM10	**PM2.5**	**PM10**	**PM2.5**
k= particle size multiplier (lb/vmt) =	0.0022	0.00054	0.0022	0.00054
sL = road surface silt loading (g/m^2) =	0.2	0.2	0.2	0.2
W_l = loaded truck wt (tons) =	120	120	40	40
W_u = unloaded truck wt (tons) =	50	50	15	15
W = avge truck weight	85.00	85.00	27.50	27.50
EF (lb/VMT) =	0.05	0.01	0.01	0.00
Baseline C.E. =	80%	80%	80%	80%
Baseline EF (lb/VMT) =	**0.0094**	**0.0023**	**0.0030**	**0.0007**

Particle size multiplier based on AP-42 Table 13.2.1-1
Silt Loading based on ADT of 500 - 5000 from AP-42 Table 13.1-2
Control efficiency for unpaved roads in baseline is 80% for watering.

Future Paved Road Emission Factors

Paved Road emissions factor from AP42 Section 13.2.1

EF (lb/VMT)= k * $(sL)^{0.91}$ * $(W)^{1.02}$

	Mining Haul Trucks		On-road Trucks	
	PM10	**PM2.5**	**PM10**	**PM2.5**
k= particle size multiplier (lb/vmt) =	0.0022	0.00054	0.0022	0.00054
sL = road surface silt loading (g/m^2) =	0.2	0.2	0.2	0.2
W_l = loaded truck wt (tons) =	120	120	40	40
W_u = unloaded truck wt (tons) =	50	50	15	15
W = avge truck weight	85.00	85.00	27.50	27.50
EF (lb/VMT) =	0.05	0.01	0.01	0.00
Future C.E. =	90%	90%	90%	90%
Future EF (lb/VMT) =	**0.0047**	**0.0012**	**0.0015**	**0.0004**

Particle size multiplier based on AP-42 Table 13.2.1-1
Silt Loading based on ADT of 500 - 5000 from AP-42 Table 13.1-2

Baseline GHG Emission Summary			
Activity	**Units**	**Value**	**Source Tab**
On-site On-Road	MT CO2e/yr	954.0	Onsite Yearly VMT & EMS (10)
On-Site Off-Road		5,212.1	Offroad Engine EMS (7)
Off-site On-road Trucks		5,358.6	Regional Offsite Emissions (8)
Employee Off-Site On-Road		292.7	Total Annual Emissions (2a)
Stationary		-	Asphalt Dryer (14a) and Asphalt Plant Oil Heaters (14c)
Electricity		1,919.0	GHG Emissions (21)
Total		13,736.3	

Operation GHG Emission Summary			
Activity	**Units**	**Value**	**Source Tab**
On-site On-Road	MT CO2e/yr	927.2	Onsite Yearly VMT & EMS (10)
On-Site Off-Road (1)		4,236.2	Offroad Engine EMS (7)
Off-site On-road Trucks		6,067.9	Regional Offsite Emissions (8)
Employee Off-Site On-Road		301.8	Total Annual Emissions (2a)
Stationary		8,394.4	Asphalt Dryer (14a) and Asphalt Plant Oil Heaters (14c)
Electricity		1,373.0	GHG Emissions (21)
Total		21,300.6	

Notes: (1) Off-road units comply with offroad engine rules which require renewable diesel and adjusted by 50% (see Appendix L).

Project GHG Emission Summary		
Baseline	MT CO2e/yr	13,736.3
Operation	MT CO2e/yr	21,300.6
Project	MT CO2e/yr	**7,564.3**

Electricty Calculations

Aggregate Plant

Parameter	Unit	Value	Source
Baseline Plant Horsepower	hp	1625	
Project Plant Horsepower	hp	3456.5	
Operation Hours	hour/day	16	
Operation Days	days/yr	312	
hp to kW Conversion	MW/hp	0.00074	
Baseline CO2 Conversion	lb CO2/MWh	641	CalEEMod 2016 User Guide (CalEEMod Appendix D: Default Data Tables, 2017)
Project CO2 Conversion	lb CO2/MWh	206	CalEEMod 2020 User Guide (CalEEMod Appendix D: Default Data Tables, 2021)
Metric Ton Conversion	MT/lb	0.000453593	

Project Stage	Plant Horsepower hp	CO2 Conversion lb CO2/MWh	Electricity Use MWh/yr	GHG Emissions CO2e/yr
Baseline	1,625.0	641.0	6,002.9	1,745.4
Project	3,456.5	206.0	12,768.6	1,193.1

Ready Mix Plant

Parameter	Unit	Value	Source
Baseline Throughput	yd^3/yr	189550	Tab 1
Project Max. Throughput	yd^3/yr	300000	Tab 1
Electricity Conversion	kWh/yd^3	3.15	Portland Cement Association, Life Cycle Inventory of Portland Cement Concrete 2007 (http://large.stanford.edu/courses/2016/ph240/pourshafeie2/docs/marceau-2007.pdf)
Baseline CO2 Conversion	lb CO2/MWh	641	CalEEMod 2016 User Guide (CalEEMod Appendix D: Default Data Tables, 2017)
Project CO2 Conversion	lb CO2/MWh	206	CalEEMod 2020 User Guide (CalEEMod Appendix D: Default Data Tables, 2021)
Metric Ton Conversion	MT/lb	0.000453593	

Project Stage	Plant Throughput yd^3/yr	CO2 Conversion lb CO2/MWh	Electricity Use MWh/yr	GHG Emissions CO2e/yr
Baseline	189,550.0	641.0	597.1	173.6
Project	300,000.0	206.0	945.0	88.3

Asphalt Plant

Parameter	Unit	Value	Source
Baseline Throughput	ton/yr	0	Tab 1
Project Max. Throughput	ton/yr	500,000	Tab 1
Electricity Conversion	kWh/ton	1.96	San Joaquin Valley Unified Air Pollution Control District Best Performance Standard 2010 (https://archive.valleyair.org/Programs/CCAP/bps/DRAFT_Modified_Continuous_Asphalt_Plant_Dryers.pdf)
Baseline CO2 Conversion	lb CO2/MWh	641	CalEEMod 2016 User Guide (CalEEMod Appendix D: Default Data Tables, 2017)
Project CO2 Conversion	lb CO2/MWh	206	CalEEMod 2020 User Guide (CalEEMod Appendix D: Default Data Tables, 2021)
Metric Ton Conversion	MT/lb	0.000453593	

Project Stage	Plant Throughput ton/yr	CO2 Conversion lb CO2/MWh	Electricity Use MWh/yr	GHG Emissions CO2e/yr
Baseline	-	641.0	-	-
Project	500,000.0	206.0	980.0	91.6

Construction

Source: Construction GHG emissions gathered from CalEEMod (Appendix F)

Construction Phase	GHG Emissions MT CO2e/yr
Site Preparation	24.55
Grading	61.07
Building Construction	93.78
Paving*	17.25
Total	**196.65**

Amortized Across 30-Year Project Lifespan (MT CO2e/yr)
6.6

*An additional 10 MT CO2e/yr Paving was conservatively assumed to represent the entire lifetime of the Project

Construction Schedule

Phase Name	Phase Type	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	5	10	--
Grading	Grading	5	20	10 Acres Graded
Building Construction	Building Construction	5	196	--
Paving	Paving	5	10	--

Table ES8

Activity		CO_2e (MT/yr)
Construction Phase (Maximum Year)		6.6
Operation Phase		21,301
On-site On-road Sources (a)	927.2	
On-site Offroad Sources (b)	4,236.2	
Off-site On-road Trucks	6,067.9	
Employee Off-site On-road Sources (d)	301.8	
Stationary Sources (Asphalt Plant) (e)	8,394.4	
Electricity (f)	1,373.0	
Baseline Condition		13,736
On-site On-road Sources (a)	954.0	
On-site Offroad Sources (b)	5,212.1	
Off-site On-road Trucks	5,358.6	
Employee Off-site On-road Sources (d)	292.7	
Stationary Sources (e)	-	
Electricity (g)	1,919.0	
Project Emissions Total (Operation Phase Minus Baseline Condition)		7,564
GHG Threshold of Significance		10,000
Significant?		No

Notes: (1) Off-road units comply with offroad engine rules which require renewable diesel and adjusted by 50% (see Appendix L).
(2) Off-site on-road units evaluated based on incremental share of regional increase in emissions (see Appendix J).

Blue Smoke Control ®

5594 E. La Palma Ave.
Anaheim Ca. 92807
714-696-7599 Fax 714-696-7595

Blue Smoke Control *is a division of* Butler-*Justice Inc.*

Blue Smoke Control Permitting Parameters
Model 6S20C

The Blue Smoke Control collector, designed for controlling blue smoke that typically comes from in-plant transferring and loading hot mix asphalt, is a patented product of Butler-Justice Inc., Anaheim California. The equipment is marketed under the registered trade name BLUE SMOKE CONTROL.

With installations in several states, we have learned that each state has their own unique set of permitting requirements. Nevertheless, the following specifications will likely meet the needs of most agencies.

GENERAL DESCRIPTION

The Blue Smoke Control collectors are high efficiency cartridge mist collectors. Constructed with a steel housing, the filtration is accomplished in cells with each cell having seven stages. Each stage is more efficient than the previous. The first three stages are metal and designed to be cleaned when necessary. Stages four, five, six and 7 are disposable and are to be replaced when they become plugged.

Model 6S20C

Number of cells … 20 with maximum capacity each cell … 2,000 CFM

Maximum collector rated capacity for the Model 6S20C … 40,000 CFM

Fan …75 HP, rated for 40,000 CFM at 8 inches SP

Number of Primary and secondary filters … 20 sets (Stages 6&7)

Primary stage 6 filter dimensions … 25.5" Long x 26" Diameter. (This is a pleated cartridge type filter with a 220 sq ft of filter media per cartridge.)

Filter efficiency is 98% on 1.8 Micron (Refer to filter manufacturer's data sheet-Dryflo filter),

Secondary Stage 7 filter insert is 95% efficient at .3 microns (refer to manufacturer's data sheet 95-DOP)

Number of pre-filters … 100 (Stages 1-5 including a 5th stage wrap around stage 6)

Plan and elevation views of this equipment are illustrated on Blue Smoke Control drawing number BSC-PB-20C. Also, refer to the product brochure for photographs of typical installations, explanation of the equipment, and illustrations of the six stages of filtration. For further information, call 714-696-7599.

Pollution Control Systems for the Hot Mix Asphalt Industry.

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population
Fresno	2025	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	3,654.9
Fresno	2026	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	3,693.9
Fresno	2027	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	3,714.5
Fresno	2028	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	3,720.4
Fresno	2029	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	3,695.1
Fresno	2030	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	3,668.6
Fresno	2031	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	3,664.1
Fresno	2032	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	3,643.8
Fresno	2033	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	3,608.6
Fresno	2034	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	3,552.0
Fresno	2035	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	3,462.4
Fresno	2036	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	3,347.1
Fresno	2037	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	3,141.7
Fresno	2038	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2,884.2
Fresno	2039	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2,608.9
Fresno	2040	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2,325.4
Fresno	2041	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2,051.1
Fresno	2042	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1,777.5
Fresno	2043	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1,529.4
Fresno	2044	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1,321.3
Fresno	2045	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1,149.8
Fresno	2046	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1,004.9
Fresno	2047	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	879.5
Fresno	2048	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	781.6
Fresno	2049	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	718.7
Fresno	2050	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	682.1

Summary:

Year	Miles/Year	PM10 TOTEX (tons/year)	Tons/Mile	Emission Factor (lbs/mile)
2025	94,193,143.3	1.66	1.762E-08	3.5E-05
2050	17,011,378.5	0.23	1.33786E-08	2.7E-05

Calendar Year	Total VMT	CVMT	Trips	NOx_RUNEX	NOx_IDLEX	NOx_STREX	NOx_TOTEX	PM2.5_RUNEX	PM2.5_IDLEX
2025	94,193,143.3	94,193,143.3	16,568,944.0	120.1	32.0	64.1	216.2	1.6	0.0
2026	95,187,568.2	95,187,568.2	16,745,821.2	96.6	26.1	53.2	175.9	1.4	0.0
2027	95,868,760.2	95,868,760.2	16,839,119.9	85.8	23.4	48.8	158.0	1.4	0.0
2028	95,872,059.8	95,872,059.8	16,865,692.3	73.0	19.9	42.1	134.9	1.3	0.0
2029	95,505,565.9	95,505,565.9	16,751,276.4	65.7	17.7	37.9	121.2	1.3	0.0
2030	94,902,994.2	94,902,994.2	16,631,282.9	60.3	15.9	34.2	110.3	1.3	0.0
2031	94,465,642.0	94,465,642.0	16,610,499.4	56.1	14.4	31.0	101.5	1.2	0.0
2032	93,551,151.5	93,551,151.5	16,518,676.3	52.4	13.0	28.3	93.7	1.2	0.0
2033	92,172,129.8	92,172,129.8	16,358,941.1	48.7	11.7	25.7	86.1	1.2	0.0
2034	90,705,799.5	90,705,799.5	16,102,344.0	45.4	10.4	23.2	79.0	1.2	0.0
2035	88,898,550.9	88,898,550.9	15,696,498.4	42.5	9.2	20.8	72.5	1.1	0.0
2036	85,454,219.0	85,454,219.0	15,173,784.5	39.5	8.0	18.6	66.1	1.1	0.0
2037	79,441,909.3	79,441,909.3	14,242,647.9	35.7	6.9	16.4	59.0	1.0	0.0
2038	72,037,133.7	72,037,133.7	13,075,239.5	31.8	5.9	14.3	52.1	0.9	0.0
2039	64,257,686.2	64,257,686.2	11,826,964.2	28.0	5.1	12.5	45.6	0.8	0.0
2040	56,256,587.4	56,256,587.4	10,541,950.8	24.3	4.3	10.8	39.4	0.7	0.0
2041	49,042,110.1	49,042,110.1	9,298,473.8	20.9	3.6	9.2	33.8	0.6	0.0
2042	42,001,466.3	42,001,466.3	8,058,016.3	17.7	3.1	7.8	28.6	0.5	0.0
2043	35,882,039.9	35,882,039.9	6,933,378.0	15.1	2.6	6.7	24.3	0.5	0.0
2044	30,907,446.1	30,907,446.1	5,989,768.3	13.0	2.2	5.7	21.0	0.4	0.0
2045	26,825,107.2	26,825,107.2	5,212,379.6	11.3	1.9	5.0	18.3	0.3	0.0
2046	23,568,132.3	23,568,132.3	4,555,492.7	10.0	1.7	4.5	16.2	0.3	0.0
2047	20,849,398.0	20,849,398.0	3,987,055.1	8.9	1.6	4.1	14.6	0.3	0.0
2048	18,882,074.9	18,882,074.9	3,543,115.0	8.2	1.4	3.8	13.4	0.2	0.0
2049	17,678,529.2	17,678,529.2	3,258,295.6	7.8	1.3	3.5	12.7	0.2	0.0
2050	17,011,378.5	17,011,378.5	3,092,339.0	7.3	1.3	3.3	11.9	0.2	0.0

Summary:

Year	Miles/Year	PM10 TOTEX (tons/year)	Tons/Mile	Emission Factor (lbs/mile)
2025	94,193,143.3	1.66	1.762E-08	3.5E-05
2050	17,011,378.5	0.23	1.33786E-08	2.7E-05

Calendar Year	PM2.5_TOTEX	PM2.5_PMTW	PM2.5_PMBW	PM2.5_TOTAL	PM10_RUNEX	PM10_IDLEX	PM10_TOTEX
2025	1.6	0.9	2.9	5.4	1.6	0.0	1.7
2026	1.4	0.9	2.9	5.2	1.4	0.0	1.5
2027	1.4	1.0	2.9	5.2	1.4	0.0	1.4
2028	1.3	1.0	3.0	5.2	1.4	0.0	1.4
2029	1.3	0.9	3.0	5.2	1.3	0.0	1.3
2030	1.3	0.9	3.0	5.2	1.3	0.0	1.3
2031	1.3	0.9	3.0	5.2	1.3	0.0	1.3
2032	1.2	0.9	3.0	5.2	1.3	0.0	1.3
2033	1.2	0.9	3.0	5.1	1.3	0.0	1.3
2034	1.2	0.9	2.9	5.0	1.2	0.0	1.2
2035	1.2	0.9	2.9	4.9	1.2	0.0	1.2
2036	1.1	0.8	2.8	4.8	1.2	0.0	1.2
2037	1.0	0.8	2.6	4.4	1.1	0.0	1.1
2038	0.9	0.7	2.4	4.0	1.0	0.0	1.0
2039	0.8	0.6	2.1	3.6	0.9	0.0	0.9
2040	0.7	0.6	1.9	3.2	0.8	0.0	0.8
2041	0.6	0.5	1.6	2.8	0.7	0.0	0.7
2042	0.5	0.4	1.4	2.4	0.6	0.0	0.6
2043	0.5	0.4	1.2	2.0	0.5	0.0	0.5
2044	0.4	0.3	1.0	1.7	0.4	0.0	0.4
2045	0.3	0.3	0.9	1.5	0.4	0.0	0.4
2046	0.3	0.2	0.8	1.3	0.3	0.0	0.3
2047	0.3	0.2	0.7	1.2	0.3	0.0	0.3
2048	0.2	0.2	0.6	1.1	0.3	0.0	0.3
2049	0.2	0.2	0.6	1.0	0.2	0.0	0.2
2050	0.2	0.2	0.6	1.0	0.2	0.0	0.2

Summary:

Year	Miles/Year	PM10 TOTEX (tons/year)	Tons/Mile	Emission Factor (lbs/mile)
2025	94,193,143.3	1.66	1.762E-08	3.5E-05
2050	17,011,378.5	0.23	1.33786E-08	2.7E-05

Calendar Year	PM10_PMTW	PM10_PMBW	PM10_TOTAL	CO2_RUNEX	CO2_IDLEX	CO2_TOTEX	CH4_RUNEX
2025	3.7	8.2	13.5	157,309.7	10,113.2	167,422.9	0.1
2026	3.8	8.3	13.5	156,350.7	9,986.0	166,336.7	0.1
2027	3.8	8.4	13.6	154,858.7	9,822.3	164,681.0	0.1
2028	3.8	8.4	13.6	152,109.4	9,632.8	161,742.3	0.1
2029	3.8	8.5	13.6	148,847.2	9,386.3	158,233.5	0.0
2030	3.8	8.5	13.6	145,326.4	9,154.2	154,480.6	0.0
2031	3.7	8.6	13.6	142,266.4	8,994.7	151,261.1	0.0
2032	3.7	8.6	13.6	138,800.4	8,817.4	147,617.8	0.0
2033	3.7	8.5	13.4	134,985.3	8,625.2	143,610.5	0.0
2034	3.6	8.4	13.3	131,423.4	8,404.6	139,828.0	0.0
2035	3.5	8.3	13.0	127,694.5	8,124.9	135,819.4	0.0
2036	3.4	8.0	12.6	121,767.3	7,795.9	129,563.1	0.0
2037	3.2	7.5	11.7	112,220.7	7,259.0	119,479.7	0.0
2038	2.9	6.8	10.7	100,918.5	6,613.3	107,531.8	0.0
2039	2.5	6.1	9.5	89,377.8	5,942.5	95,320.3	0.0
2040	2.2	5.3	8.3	77,818.1	5,269.8	83,087.9	0.0
2041	1.9	4.7	7.3	67,575.2	4,631.4	72,206.5	0.0
2042	1.7	4.0	6.2	57,701.0	4,002.4	61,703.3	0.0
2043	1.4	3.4	5.3	49,158.3	3,435.2	52,593.4	0.0
2044	1.2	2.9	4.6	42,222.4	2,960.1	45,182.6	0.0
2045	1.1	2.6	4.0	36,535.3	2,568.8	39,104.1	0.0
2046	0.9	2.2	3.5	31,998.7	2,238.4	34,237.1	0.0
2047	0.8	2.0	3.1	28,212.0	1,952.6	30,164.6	0.0
2048	0.7	1.8	2.8	25,467.9	1,729.5	27,197.4	0.0
2049	0.7	1.7	2.6	23,782.0	1,585.9	25,367.9	0.0
2050	0.7	1.6	2.5	22,838.8	1,501.6	24,340.4	0.0

Summary:

Year	Miles/Year	PM10 TOTEX (tons/year)	Tons/Mile	Emission Factor (lbs/mile)
2025	94,193,143.3	1.66	1.762E-08	3.5E-05
2050	17,011,378.5	0.23	1.33786E-08	2.7E-05

Calendar Year	CH4_IDLEX	CH4_TOTEX	N2O_RUNEX	N2O_TOTEX	ROG_RUNEX	ROG_IDLEX	ROG_TOTEX
2025	0.2	0.3	41.4	41.4	1.4	4.3	5.7
2026	0.2	0.3	41.9	41.9	1.2	4.3	5.6
2027	0.2	0.3	42.2	42.2	1.2	4.4	5.5
2028	0.2	0.3	42.2	42.2	1.1	4.4	5.5
2029	0.2	0.3	42.1	42.1	1.1	4.4	5.4
2030	0.2	0.3	41.8	41.8	1.0	4.3	5.4
2031	0.2	0.2	41.6	41.6	1.0	4.3	5.4
2032	0.2	0.2	41.2	41.2	1.0	4.3	5.3
2033	0.2	0.2	40.6	40.6	1.0	4.3	5.3
2034	0.2	0.2	40.0	40.0	1.0	4.2	5.2
2035	0.2	0.2	39.2	39.2	1.0	4.1	5.1
2036	0.2	0.2	37.7	37.7	0.9	4.0	4.9
2037	0.2	0.2	35.0	35.0	0.9	3.7	4.6
2038	0.2	0.2	31.8	31.8	0.8	3.4	4.2
2039	0.1	0.2	28.3	28.3	0.7	3.1	3.8
2040	0.1	0.2	24.8	24.8	0.6	2.8	3.4
2041	0.1	0.1	21.6	21.6	0.5	2.4	3.0
2042	0.1	0.1	18.5	18.5	0.5	2.1	2.6
2043	0.1	0.1	15.8	15.8	0.4	1.8	2.2
2044	0.1	0.1	13.6	13.6	0.3	1.6	1.9
2045	0.1	0.1	11.8	11.8	0.3	1.4	1.7
2046	0.1	0.1	10.4	10.4	0.3	1.2	1.5
2047	0.0	0.1	9.2	9.2	0.2	1.0	1.3
2048	0.0	0.1	8.3	8.3	0.2	0.9	1.1
2049	0.0	0.0	7.8	7.8	0.2	0.9	1.0
2050	0.0	0.0	7.5	7.5	0.2	0.8	1.0

Summary:

Year	Miles/Year	PM10 TOTEX (tons/year)	Tons/Mile	Emission Factor (lbs/mile)
2025	94,193,143.3	1.66	1.762E-08	3.5E-05
2050	17,011,378.5	0.23	1.33786E-08	2.7E-05

Calendar Year	ROG_TOTAL	TOG_RUNEX	TOG_IDLEX	TOG_TOTEX	TOG_TOTAL
2025	5.7	1.6	4.9	6.4	6.4
2026	5.6	1.4	4.9	6.4	6.4
2027	5.5	1.3	5.0	6.3	6.3
2028	5.5	1.3	5.0	6.3	6.3
2029	5.4	1.2	5.0	6.2	6.2
2030	5.4	1.2	5.0	6.1	6.1
2031	5.4	1.2	5.0	6.1	6.1
2032	5.3	1.1	4.9	6.1	6.1
2033	5.3	1.1	4.9	6.0	6.0
2034	5.2	1.1	4.8	5.9	5.9
2035	5.1	1.1	4.7	5.8	5.8
2036	4.9	1.0	4.5	5.6	5.6
2037	4.6	1.0	4.3	5.2	5.2
2038	4.2	0.9	3.9	4.8	4.8
2039	3.8	0.8	3.5	4.3	4.3
2040	3.4	0.7	3.1	3.9	3.9
2041	3.0	0.6	2.8	3.4	3.4
2042	2.6	0.5	2.4	2.9	2.9
2043	2.2	0.5	2.1	2.5	2.5
2044	1.9	0.4	1.8	2.2	2.2
2045	1.7	0.3	1.6	1.9	1.9
2046	1.5	0.3	1.4	1.7	1.7
2047	1.3	0.3	1.2	1.5	1.5
2048	1.1	0.2	1.1	1.3	1.3
2049	1.0	0.2	1.0	1.2	1.2
2050	1.0	0.2	0.9	1.1	1.1

Summary:

Year	Miles/Yr	PM10 TOTEX (tons/year)	Tons/Mile	Emission Factor (lbs/mile)
2025	94,193,143.3	1.66	1.762E-08	3.5E-05
2050	17,011,378.5	0.23	1.33786E-08	2.7E-05

Calendar Year	CO_RUNEX	CO_IDLEX	CO_TOTEX	SOx_RUNEX	SOx_IDLEX	SOx_TOTEX	NH3_RUNEX	Fuel Consumption
2025	7.4	63.0	70.4	0.5	0.0	0.5	22.8	14,961.0
2026	6.6	64.0	70.6	0.5	0.0	0.5	23.0	14,863.9
2027	6.1	64.6	70.6	0.5	0.0	0.5	23.2	14,716.0
2028	5.6	64.9	70.5	0.5	0.0	0.5	23.2	14,453.3
2029	5.3	64.6	69.9	0.5	0.0	0.5	23.1	14,139.8
2030	5.0	64.2	69.3	0.5	0.0	0.5	23.0	13,804.4
2031	4.9	64.2	69.1	0.5	0.0	0.5	22.9	13,516.7
2032	4.8	63.9	68.7	0.5	0.0	0.5	22.7	13,191.2
2033	4.6	63.3	68.0	0.4	0.0	0.5	22.4	12,833.1
2034	4.5	62.4	66.9	0.4	0.0	0.5	22.0	12,495.1
2035	4.4	60.8	65.2	0.4	0.0	0.4	21.6	12,136.9
2036	4.3	58.8	63.1	0.4	0.0	0.4	20.7	11,577.8
2037	4.0	55.2	59.2	0.4	0.0	0.4	19.3	10,676.7
2038	3.7	50.7	54.3	0.3	0.0	0.4	17.5	9,609.1
2039	3.3	45.8	49.1	0.3	0.0	0.3	15.6	8,517.9
2040	2.9	40.8	43.7	0.3	0.0	0.3	13.6	7,424.8
2041	2.6	36.0	38.6	0.2	0.0	0.2	11.9	6,452.4
2042	2.2	31.2	33.4	0.2	0.0	0.2	10.2	5,513.8
2043	1.9	26.9	28.7	0.2	0.0	0.2	8.7	4,699.8
2044	1.6	23.2	24.8	0.1	0.0	0.1	7.5	4,037.5
2045	1.4	20.2	21.6	0.1	0.0	0.1	6.5	3,494.4
2046	1.2	17.6	18.9	0.1	0.0	0.1	5.7	3,059.4
2047	1.1	15.4	16.5	0.1	0.0	0.1	5.1	2,695.5
2048	1.0	13.7	14.7	0.1	0.0	0.1	4.6	2,430.4
2049	0.9	12.6	13.5	0.1	0.0	0.1	4.3	2,266.9
2050	0.8	12.0	12.8	0.1	0.0	0.1	4.1	2,175.1

Summary:

Year	Miles/Year	PM10 TOTEX (tons/year)	Tons/Mile	Emission Factor (lbs/mile)
2025	94,193,143.3	1.66	1.762E-08	3.5E-05
2050	17,011,378.5	0.23	1.33786E-08	2.7E-05

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	Trips	NOx_RUNEX
Fresno	2025	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	3,654.9	301,901.1	301,901.1	53,105.6	1.2
Fresno	2050	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	682.1	54,523.6	54,523.6	9,911.3	0.4

Calendar Year	NOx_IDLEX	NOx_STREX	PM2.5_RUNEX	PM2.5_IDLEX	PM2.5_PMTW	PM2.5_PMBW	PM10_RUNEX	PM10_IDLEX	PM10_PMTW	PM10_PMBW
2025	25.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
2050	5.4	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1

Calendar Year	CO2_RUNEX	CO2_IDLEX	CH4_RUNEX	CH4_IDLEX	N2O_RUNEX	ROG_RUNEX	ROG_IDLEX	TOG_RUNEX	TOG_IDLEX	NH3_RUNEX
2025	1,515.1	8,045.5	0.0	0.2	0.4	0.0	3.4	0.0	3.9	0.2
2050	1,218.0	6,400.7	0.0	0.2	0.4	0.0	3.5	0.0	3.9	0.2

Calendar Year	CO_RUNEX	CO_IDLEX	SOx_RUNEX	SOx_IDLEX	Total VMT	PM 10 IDLEX (g/vehicle/day)	Trips	Grams/Vehicle/Second
2025	0.1	50.1	0.0	0.0	301,901.1	0.01	53,105.6	1.3E-07
2050	0.0	51.1	0.0	0.0	54,523.6	0.01	9,911.3	1.1E-07

Calendar Year	Pounds/Vehicle/Second
2025	4.2E-10
2050	3.5E-10

Pollutant										
										Representative Road
					Yearly					
	Year	Total Trips for 3 Axle and 5 Axle	lbs/miles	Location	Trips	Estimate Miles		Emissions/Trip	Total Emissions (lbs)/Year	Total Emissions (lbs)/Year
PM10	2025	122,850.00	3.52E-05	Quarry Going North	48,000.0	2.62		9.23288E-05	4.43	27.92
				B/w Quarry and Plant	160,000.0	1.86		6.55464E-05	10.49	
				Plant Going South	112,000.0	0.67		2.36108E-05	2.64	
				Willow Road	24,000.0	1.90		6.6956E-05	1.61	
				Copper River	88,000.0	2.02		7.11848E-05	6.26	
				Copper Road (1)	88,000.0	0.53		1.86772E-05	1.64	
				Copper Road (2)	88,000.0	0.27		9.5148E-06	0.84	
	2050	196,312.00	2.68E-05	Quarry Going North	72,000.0	2.62		7.01037E-05	5.05	31.79
				B/w Quarry and Plant	240,000.0	1.86		4.97683E-05	11.94	
				Plant Going South	168,000.0	0.67		1.79273E-05	3.01	
				Willow Road	36,000.0	1.90		5.08386E-05	1.83	
				Copper River	132,000.0	2.02		5.40494E-05	7.13	
				Copper Road (1)	132,000.0	0.53		1.41813E-05	1.87	
				Copper Road (2)	132,000.0	0.27		7.22443E-06	0.95	
	Difference	73,462.00	-8.48E-06							3.88

Notes:
(1) Copper Road #1 indicates the Copper Road portion after the intersection with Copper River
(2) Copper Road #2 indicates the Copper Road portion after the intersection with Copper Road

Trip Data Origin	DEIR Traffic Study
	Volume ii
Percentage Hauls	pg. (1358 of 1968)
Estimated Miles Origin*	Rockfield Traffic Distance.kmz

*kmz file where miles were taken from measured distances using Google Earth

Year	Throughput (tons/year)	Segment of Road	Percentage of Haul Traffic*
2025	2000000	Quarry Going North	30%
		B/w Quarry and Plant	100%
		Quarry Going South	70%
		Friant to Copper Road	55%
		Friant to Copper River	55%
		Friant to Willow	15%
2050	3000000	Quarry Going North	30%
		B/w Quarry and Plant	100%
		Quarry Going South	70%
		Friant to Copper Road	55%
		Friant to Copper River	55%
		Friant to Willow	15%

Sample Calculations

					Hourly				
Year	Total Trips for 3 Axle and 5 Axle*	lbs/miles	Location Sources	Trips	Estimate Miles		Emissions/Trip	Total Emissions (lbs)/hr	Total Emissions (lbs)/hr
2025	50.5	2.88E-04	Quarry Going North	11.0	2.62		9.23E-05	0.00	6.37E-03
			B/w Quarry and Plant	36.5	1.86		6.55E-05	0.00	
			Plant Going South	25.6	0.67		2.36E-05	0.00	
			Willow Road	5.5	1.90		6.70E-05	0.00	
			Copper River	20.1	2.02		7.12E-05	0.00	
			Copper Road (1)	20.1	0.53		1.87E-05	0.00	
			Copper Road (2)	20.1	0.27		9.51E-06	0.00	
2050	80.7	2.97E-04	Quarry Going North	16.4	2.62		7.01E-05	0.00	7.26E-03
			B/w Quarry and Plant	54.8	1.86		4.98E-05	0.00	
			Plant Going South	38.4	0.67		1.79E-05	0.00	
			Willow Road	8.2	1.90		5.08E-05	0.00	
			Copper River	30.1	2.02		5.40E-05	0.00	
			Copper Road (1)	30.1	0.53		1.42E-05	0.00	
			Copper Road (2)	30.1	0.27		7.22E-06	0.00	
Difference	30.2	9.3E-06							8.85E-04

*DEIR Annual Avg Daily*0.15

Weight of Load (tons)	Trips per Load	Total Trips	Segmented Trips	Trips/hr
25	2	160000	48000	11.0
			160000	36.5
			112000	25.6
			88000	20.1
			88000	20.1
			24000	5.5
25	2	240000	72000	16.4
			240000	54.8
			168000	38.4
			132000	30.1
			132000	30.1
			36000	8.2

Assumed Operating Conditions	
365	days/yr
12	hours/day

$$E = \left[k \left(\frac{sL}{2} \right)^{0.65} \left(\frac{W}{3} \right)^{1.5} \right] \times \left(1 - \frac{P}{4N} \right)$$

Parameters	Units	Value
sL	g/m^2	0.032
k	lb PM10/VMT	0.0022
W (3 axle)	tons	17.5
W (5 axle)	tons	27.5
P	Index	21.2
N	Index	365

Emission Fact	Weight
0.00175249	3 Axle
0.00277892	5 Axle

Source:

https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2016.pdf

	Weight (tons)		
	Empty	Full	Average
5 Axle	15	40	27.5
3 Axle	10	25	17.5

		Axle	Location	Segmented Trips	Estimated Miles Per Trip
Phase 1	Year	3	Quarry Going North	11,972.0	2.62
			B/w Quarry and Plant	11,972.0	1.86
			Plant Going South	27,959.0	0.67
			Willow Road	5,986.0	1.9
			Copper River	21,973.0	2.02
			Copper Road (1)	21,973.0	0.53
		5	Quarry Going North	28,543.0	2.62
			B/w Quarry and Plant	141,036.0	1.86
			Plant Going South	66,576.0	0.67
			Willow Road	14,235.0	1.9
			Copper River	52,341.0	2.02
			Copper Road (1)	52,341.0	0.53
Phase 2 (3.0 MT Per Year)	Year	3	Quarry Going North	18,980.0	2.62
			B/w Quarry and Plant	18,980.0	1.86
			Plant Going South	44,384.0	0.67
			Willow Road	9,490.0	1.9
			Copper River	34,748.0	2.02
			Copper Road (1)	34,748.0	0.53
		5	Quarry Going North	82,490.0	2.62
			B/w Quarry and Plant	206,298.0	1.86
			Plant Going South	192,939.0	0.67
			Willow Road	41,318.0	1.9
			Copper River	151,548.0	2.02
			Copper Road (1)	151,548.0	0.53

		Axle	Location	Segmented Trips	Estimated Miles Per Trip
Phase 1	Hourly	3	Quarry Going North	2.5	2.62
			B/w Quarry and Plant	2.5	1.86
			Plant Going South	5.7	0.67
			Willow Road	1.2	1.9
			Copper River	4.5	2.02
			Copper Road (1)	4.5	0.53
		5	Quarry Going North	5.9	2.62
			B/w Quarry and Plant	29.0	1.86
			Plant Going South	13.7	0.67
			Willow Road	2.9	1.9
			Copper River	10.8	2.02
			Copper Road (1)	10.8	0.53
Phase 2 (3.0 MT Per Year)	Hourly	3	Quarry Going North	3.9	2.62
			B/w Quarry and Plant	3.9	1.86
			Plant Going South	9.1	0.67
			Willow Road	2.0	1.9
			Copper River	7.1	2.02
			Copper Road (1)	7.1	0.53
		5	Quarry Going North	17.0	2.62
			B/w Quarry and Plant	42.4	1.86
			Plant Going South	39.6	0.67
			Willow Road	8.5	1.9
			Copper River	31.1	2.02
			Copper Road (1)	31.1	0.53

		Axle	Location	Segmented Trips	Estimated Miles Per Trip
Phase 1	Yearly	3	Copper Road (2)	21,973.0	0.27
		5	Copper Road (2)	52,341.0	0.27
Phase 2 (3.0 MT Per Year)	Yearly	3	Copper Road (2)	34,748.0	0.27
		5	Copper Road (2)	151,548.0	0.27
Phase 1	Hourly	3	Copper Road (2)	4.5	0.27
		5	Copper Road (2)	10.8	0.27
Phase 2 (3.0 MT Per Year)	Hourly	3	Copper Road (2)	7.1	0.27
		5	Copper Road (2)	31.1	0.27

Notes: Additional Road Segment (Copper Road 2) added after original creation of table.
(1) Copper Road #1 indicates the Copper Road portion after the intersection with Copper River
(2) Copper Road #2 indicates the Copper Road portion after the intersection with Copper Road
"0.0" values represent numbers that are less than 0.05

Trip Data Origin	DEIR Traffic Study
	Volume ii
Percentage Hauls	pg. (1365 and 1367 of 1968)

Source:
https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2016.pdf

$$E = [k(sL)^{0.91} \times (W)^{1.02}] \times (1 - P/4N)$$

Where:
E = the particulate emission factor in units of pounds of particulate matter per VMT
k = the U.S. EPA AP-42 particle size multiplier (PM_{10} = 0.0022 lb/VMT),[1]
sL = the roadway-specific silt loading in grams/square meter (g/m^2),[2,3,4,5]
W = the average weight of vehicles traveling the road (California statewide default = 2.4 tons),[5]
P = number of "wet" days, when at least one site per county received at least 0.01 inch of precipitation during the annual averaging period,[9] and
N = the number of days in the annual averaging period (default = 365)

		Road Dust Emission Factor (lb PM10/VMT)	Total Miles
Phase 1	Year	1.75E-03	31,366.6
			22,267.9
			18,732.5
			11,373.4
			44,385.5
			11,645.7
		2.78E-03	74,782.7
			262,327.0
			44,605.9
			27,046.5
			105,728.8
			27,740.7
Phase 2 (3.0 MT Per Year)	Year	1.75E-03	49,727.6
			35,302.8
			29,737.3
			18,031.0
			70,191.0
			18,416.4
		2.78E-03	216,123.8
			383,714.3
			129,269.1
			78,504.2
			306,127.0
			80,320.4

		Road Dust Emission Factor (lb PM10/VMT)	Total Miles
Phase 1	Hourly	1.75E-03	6.4
			4.6
			3.8
			2.3
			9.1
			2.4
		2.78E-03	15.4
			53.9
			9.2
			5.6
			21.7
			5.7
Phase 2 (3.0 MT Per Year)	Hourly	1.75E-03	10.2
			7.3
			6.1
			3.7
			14.4
			3.8
		2.78E-03	44.5
			78.8
			26.6
			16.1
			62.9
			16.5

		Road Dust Emission Factor (lb PM10/VMT)	Total Miles
Phase 1	Yearly	1.75E-03	5,932.7
		2.78E-03	14,132.1
Phase 2 (3.0 MT Per Year)	Yearly	1.75E-03	9,382.0
		2.78E-03	40,918.0
Phase 1	Hourly	1.75E-03	1.2
		2.78E-03	2.9
Phase 2 (3.0 MT Per Year)	Hourly	1.75E-03	1.9
		2.78E-03	8.4

Notes: Additional Road Segment (Copper Road 2) adde
(1) Copper Road #1 indicates the Copper Road portion
(2) Copper Road #2 indicates the Copper Road portion after
"0.0" values represent numbers that are less than 0.05

Notes: Additional Road Segment (Copper Road 2) added after original creation of table.
(1) Copper Road #1 indicates the Copper Road portion after the intersection with Copper River
(2) Copper Road #2 indicates the Copper Road portion after the intersection with Copper Road
"0.0" values represent numbers that are less than 0.05

Source:
https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2016.pdf

Table 1. Baseline Uncorrected Paved Road Dust Emission Factors*

Road Type	Silt Loading (g/m^2)	Average Vehicle Weight (tons)	k (lb PM10/ VMT)	Base Emission Factor (lb PM10/ VMT	Base Emission Factor* (lb PM10/ million VMT
Freeway	0.02	2.4	0.016	0.0005738	573.79
Arterial	0.035	2.4	0.016	0.0008255	825.52
Collector	0.035	2.4	0.016	0.0008255	825.52
Local	0.32	2.4	0.016	0.0034788	3478.83
Rural	1.6	2.4	0.016	0.0099029	9902.92

*Note: Emission factors not corrected for rainfall

		PM10 Total Emissions (lbs/yr) or (lbs/hr)	PM10 Total Emissions (lbs/yr) or (lbs/hr)
Phase 1	Year	55.0 39.0 32.8 19.9 77.8 20.4	244.9483989
		207.8 729.0 124.0 75.2 293.8 77.1	1506.818341
Phase 2 (3.0 MT Per Year)	Year	87.1 61.9 52.1 31.6 123.0 32.3	388.0119372
		600.6 1,066.3 359.2 218.2 850.7 223.2	3318.194197

		PM10 Total Emissions (lbs/yr) or (lbs/hr)	PM10 Total Emissions (lbs/yr) or (lbs/hr)
Phase 1	Hourly	0.0 0.0 0.0 0.0 0.0 0.0	0.050331863
		0.0 0.1 0.0 0.0 0.1 0.0	0.309620207
Phase 2 (3.0 MT Per Year)	Hourly	0.0 0.0 0.0 0.0 0.0 0.0	0.079693255
		0.1 0.2 0.1 0.0 0.2 0.0	0.68214836

		PM10 Total Emissions (lbs/yr) or (lbs/hr)	PM10 Total Emissions (lbs/yr) or (lbs/hr)
Phase 1	Yearly	10.4 39.3	49.7
Phase 2 (3.0 MT Per Year)	Yearly	16.4 113.7	130.1
Phase 1	Hourly	0.0 0.0	0.0
Phase 2 (3.0 MT Per Year)	Hourly	0.0 0.0	0.0

Notes: Additional Road Segment (Copper Road 2) adde
(1) Copper Road #1 indicates the Copper Road portion
(2) Copper Road #2 indicates the Copper Road portion after
"0.0" values represent numbers that are less than 0.05

Notes: Additional Road Segment (Copper Road 2) added after original creation of table.
(1) Copper Road #1 indicates the Copper Road portion after the intersection with Copper River
(2) Copper Road #2 indicates the Copper Road portion after the intersection with Copper Road
"0.0" values represent numbers that are less than 0.05

	Emission Rate (lbs PM10/(sec*trip))
2025	4.2478E-10
2050	3.48375E-10

From [EMFAC Data]

	Year	Intersecion	Morning Delay (s)	Evening Delay (s)	Avg Delay (s)
Yearly	2025	Friant/North Fork	13.1	15	14.05
		Friant/Quarry Site	10.8	19.4	15.1
		Friant/Plant Site	16.2	15.8	16
		Friant/Willow	16.6	19.4	18
		Friant/Copper River	7.7	6.4	7.05
		Friant/Copper Ave	10.6	7.3	8.95
		Willow/Copper Ave	24.3	13.4	18.85
	2050	Friant/North Fork	34.4	33.9	34.15
		Friant/Quarry Site	8.3	1.9	5.1
		Friant/Plant Site	8.4	4	6.2
		Friant/Willow	15.7	29.9	22.8
		Friant/Copper River	9.5	9.4	9.45
		Friant/Copper Ave	12.2	10	11.1
		Willow/Copper Ave	31.6	30.3	30.95
Hourly	2025	Friant/North Fork	13.1	15	14.05
		Friant/Quarry Site	10.8	19.4	15.1
		Friant/Plant Site	16.2	15.8	16
		Friant/Willow	16.6	19.4	18
		Friant/Copper River	7.7	6.4	7.05
		Friant/Copper Ave	10.6	7.3	8.95
		Willow/Copper Ave	24.3	13.4	18.85
	2050	Friant/North Fork	34.4	33.9	34.15
		Friant/Quarry Site	8.3	1.9	5.1
		Friant/Plant Site	8.4	4	6.2
		Friant/Willow	15.7	29.9	22.8
		Friant/Copper River	9.5	9.4	9.45
		Friant/Copper Ave	12.2	10	11.1
		Willow/Copper Ave	31.6	30.3	30.95

	Year	Total Trips per Year	Emission Rate (lbs/(sec*trips))	Emissions (lbs/trip)	Total Emissions (lbs/year)
Yearly	2025	48,000.0	4.25E-10	5.97E-09	2.86E-04
		160,000.0		6.41E-09	1.03E-03
		160,000.0		6.80E-09	1.09E-03
		112,000.0		7.65E-09	8.56E-04
		88,000.0		2.99E-09	2.64E-04
		88,000.0		3.80E-09	3.35E-04
		24,000.0		8.01E-09	1.92E-04
	2050	72,000.0	3.48E-10	1.19E-08	8.57E-04
		240,000.0		1.78E-09	4.26E-04
		240,000.0		2.16E-09	5.18E-04
		168,000.0		7.94E-09	1.33E-03
		132,000.0		3.29E-09	4.35E-04
		132,000.0		3.87E-09	5.10E-04
		36,000.0		1.08E-08	3.88E-04
Hourly	2025	11.0	4.25E-10	5.97E-09	6.54E-08
		36.5		6.41E-09	2.34E-07
		36.5		6.80E-09	2.48E-07
		25.6		7.65E-09	1.96E-07
		20.1		2.99E-09	6.02E-08
		20.1		3.80E-09	7.64E-08
		5.5		8.01E-09	4.39E-08
	2050	16.4	3.48E-10	1.19E-08	1.96E-07
		54.8		1.78E-09	9.74E-08
		54.8		2.16E-09	1.18E-07
		38.4		7.94E-09	3.05E-07
		30.1		3.29E-09	9.92E-08
		30.1		3.87E-09	1.17E-07
		8.2		1.08E-08	8.86E-08

APPENDIX I MODELING FILES

Modeling Files are available upon request from:

Andre Almeida [aalmeida@sespe.com]
Scott Cohen [scohen@sespe.com]

```
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION SSNK         VOLUME     256272.099  4090583.512       93.110
** DESCRSRC Baseline
   LOCATION NSNK         VOLUME     256283.475  4093621.242       96.780
** DESCRSRC Baseline
** ----------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = NRD1
** DESCRSRC
** PREFIX
** Length of Side = 10.00
** Configuration = Adjacent
** Emission Rate = 0.0678
** Vertical Dimension = 8.50
** SZINIT = 3.95
** Nodes = 15
** 257232.778, 4093534.017, 96.92, 4.25, 4.65
** 257135.549, 4093513.025, 96.09, 4.25, 4.65
** 257121.185, 4093519.654, 96.11, 4.25, 4.65
** 256920.097, 4093760.517, 95.07, 4.25, 4.65
** 256879.217, 4093771.566, 91.34, 4.25, 4.65
** 256844.966, 4093770.461, 91.50, 4.25, 4.65
** 256823.973, 4093752.783, 91.24, 4.25, 4.65
** 256822.868, 4093716.322, 91.31, 4.25, 4.65
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** 256830.602, 4093654.449, 90.48, 4.25, 4.65
** 256850.490, 4093637.876, 89.84, 4.25, 4.65
** 256859.329, 4093633.456, 89.79, 4.25, 4.65
** 257026.166, 4093621.303, 96.36, 4.25, 4.65
** 257128.919, 4093509.710, 96.02, 4.25, 4.65
** 257237.197, 4093531.808, 97.04, 4.25, 4.65
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   LOCATION L0002396     VOLUME   257218.116 4093530.852 96.67
   LOCATION L0002397     VOLUME   257208.341 4093528.741 96.63
   LOCATION L0002398     VOLUME   257198.566 4093526.631 96.57
   LOCATION L0002399     VOLUME   257188.791 4093524.520 96.55
   LOCATION L0002400     VOLUME   257179.017 4093522.410 96.48
   LOCATION L0002401     VOLUME   257169.242 4093520.299 96.47
   LOCATION L0002402     VOLUME   257159.467 4093518.189 96.44
   LOCATION L0002403     VOLUME   257149.692 4093516.078 96.38
   LOCATION L0002404     VOLUME   257139.918 4093513.968 96.36
   LOCATION L0002405     VOLUME   257130.527 4093515.342 96.34
   LOCATION L0002406     VOLUME   257121.448 4093519.533 96.29
   LOCATION L0002407     VOLUME   257114.962 4093527.108 96.27
   LOCATION L0002408     VOLUME   257108.553 4093534.785 96.27
   LOCATION L0002409     VOLUME   257102.144 4093542.461 96.27
   LOCATION L0002410     VOLUME   257095.735 4093550.138 96.23
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LOCATION L0002411 VOLUME 257089.327 4093557.814 96.26
LOCATION L0002412 VOLUME 257082.918 4093565.491 96.26
LOCATION L0002413 VOLUME 257076.509 4093573.167 96.24
LOCATION L0002414 VOLUME 257070.100 4093580.843 96.19
LOCATION L0002415 VOLUME 257063.692 4093588.520 96.25
LOCATION L0002416 VOLUME 257057.283 4093596.196 96.27
LOCATION L0002417 VOLUME 257050.874 4093603.873 96.27
LOCATION L0002418 VOLUME 257044.465 4093611.549 96.27
LOCATION L0002419 VOLUME 257038.056 4093619.226 96.27
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LOCATION L0002421 VOLUME 257025.239 4093634.578 96.27
LOCATION L0002422 VOLUME 257018.830 4093642.255 96.30
LOCATION L0002423 VOLUME 257012.421 4093649.931 96.34
LOCATION L0002424 VOLUME 257006.013 4093657.608 96.37
LOCATION L0002425 VOLUME 256999.604 4093665.284 96.39
LOCATION L0002426 VOLUME 256993.195 4093672.961 96.49
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LOCATION L0002428 VOLUME 256980.378 4093688.314 96.71
LOCATION L0002429 VOLUME 256973.969 4093695.990 96.77
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LOCATION L0002436 VOLUME 256929.107 4093749.725 96.77
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LOCATION L0002438 VOLUME 256914.362 4093762.067 96.77
LOCATION L0002439 VOLUME 256904.708 4093764.677 96.77
LOCATION L0002440 VOLUME 256895.055 4093767.286 96.77
LOCATION L0002441 VOLUME 256885.401 4093769.895 96.77
LOCATION L0002442 VOLUME 256875.625 4093771.450 96.77
LOCATION L0002443 VOLUME 256865.630 4093771.128 96.77
LOCATION L0002444 VOLUME 256855.635 4093770.805 96.77
LOCATION L0002445 VOLUME 256845.641 4093770.483 96.77
LOCATION L0002446 VOLUME 256837.833 4093764.455 96.77
LOCATION L0002447 VOLUME 256830.184 4093758.014 96.77
LOCATION L0002448 VOLUME 256823.916 4093750.904 96.77
LOCATION L0002449 VOLUME 256823.613 4093740.909 96.77
LOCATION L0002450 VOLUME 256823.310 4093730.913 96.77
LOCATION L0002451 VOLUME 256823.007 4093720.918 96.81
LOCATION L0002452 VOLUME 256823.022 4093710.922 96.96
LOCATION L0002453 VOLUME 256823.308 4093700.926 96.92
LOCATION L0002454 VOLUME 256823.593 4093690.930 96.87
LOCATION L0002455 VOLUME 256823.879 4093680.934 96.77
LOCATION L0002456 VOLUME 256825.818 4093671.194 96.77
LOCATION L0002457 VOLUME 256828.565 4093661.579 96.77
LOCATION L0002458 VOLUME 256832.588 4093652.794 96.77
LOCATION L0002459 VOLUME 256840.270 4093646.392 96.77
LOCATION L0002460 VOLUME 256847.952 4093639.991 96.77

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   LOCATION L0002461     VOLUME   256856.480 4093634.881 96.80
   LOCATION L0002462     VOLUME   256866.125 4093632.961 96.79
   LOCATION L0002463     VOLUME   256876.099 4093632.235 96.79
   LOCATION L0002464     VOLUME   256886.073 4093631.508 96.84
   LOCATION L0002465     VOLUME   256896.046 4093630.782 96.87
   LOCATION L0002466     VOLUME   256906.020 4093630.055 96.86
   LOCATION L0002467     VOLUME   256915.993 4093629.329 96.81
   LOCATION L0002468     VOLUME   256925.967 4093628.602 96.77
   LOCATION L0002469     VOLUME   256935.940 4093627.875 96.77
   LOCATION L0002470     VOLUME   256945.914 4093627.149 96.77
   LOCATION L0002471     VOLUME   256955.888 4093626.422 96.76
   LOCATION L0002472     VOLUME   256965.861 4093625.696 96.71
   LOCATION L0002473     VOLUME   256975.835 4093624.969 96.66
   LOCATION L0002474     VOLUME   256985.808 4093624.243 96.61
   LOCATION L0002475     VOLUME   256995.782 4093623.516 96.52
   LOCATION L0002476     VOLUME   257005.755 4093622.790 96.34
   LOCATION L0002477     VOLUME   257015.729 4093622.063 96.27
   LOCATION L0002478     VOLUME   257025.703 4093621.336 96.27
   LOCATION L0002479     VOLUME   257032.625 4093614.288 96.27
   LOCATION L0002480     VOLUME   257039.399 4093606.931 96.27
   LOCATION L0002481     VOLUME   257046.172 4093599.575 96.26
   LOCATION L0002482     VOLUME   257052.946 4093592.219 96.27
   LOCATION L0002483     VOLUME   257059.720 4093584.862 96.21
   LOCATION L0002484     VOLUME   257066.493 4093577.506 96.17
   LOCATION L0002485     VOLUME   257073.267 4093570.149 96.22
   LOCATION L0002486     VOLUME   257080.041 4093562.793 96.26
   LOCATION L0002487     VOLUME   257086.815 4093555.437 96.23
   LOCATION L0002488     VOLUME   257093.588 4093548.080 96.21
   LOCATION L0002489     VOLUME   257100.362 4093540.724 96.26
   LOCATION L0002490     VOLUME   257107.136 4093533.367 96.27
   LOCATION L0002491     VOLUME   257113.909 4093526.011 96.27
   LOCATION L0002492     VOLUME   257120.683 4093518.655 96.29
   LOCATION L0002493     VOLUME   257127.457 4093511.298 96.30
   LOCATION L0002494     VOLUME   257136.602 4093511.278 96.35
   LOCATION L0002495     VOLUME   257146.400 4093513.278 96.37
   LOCATION L0002496     VOLUME   257156.198 4093515.277 96.41
   LOCATION L0002497     VOLUME   257165.996 4093517.277 96.46
   LOCATION L0002498     VOLUME   257175.794 4093519.276 96.47
   LOCATION L0002499     VOLUME   257185.592 4093521.276 96.52
   LOCATION L0002500     VOLUME   257195.390 4093523.276 96.57
   LOCATION L0002501     VOLUME   257205.188 4093525.275 96.60
   LOCATION L0002502     VOLUME   257214.986 4093527.275 96.65
   LOCATION L0002503     VOLUME   257224.784 4093529.274 96.68
   LOCATION L0002504     VOLUME   257234.582 4093531.274 96.74
** End of LINE VOLUME Source ID = NRD1
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** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = NRD2
** DESCRSRC
** PREFIX
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** Length of Side = 11.00
** Configuration = Adjacent
** Emission Rate = 0.01211
** Vertical Dimension = 6.80
** SZINIT = 3.16
** Nodes = 16
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** 257131.293, 4093515.794, 96.10, 3.40, 5.12
** 257117.044, 4093517.151, 96.14, 3.40, 5.12
** 256796.087, 4093908.677, 95.09, 3.40, 5.12
** 256782.516, 4093913.427, 94.16, 3.40, 5.12
** 256768.945, 4093906.642, 91.73, 3.40, 5.12
** 256768.945, 4093865.250, 90.50, 3.40, 5.12
** 256768.945, 4093855.071, 90.54, 3.40, 5.12
** 256768.945, 4093848.964, 90.51, 3.40, 5.12
** 256777.087, 4093841.500, 90.51, 3.40, 5.12
** 256789.980, 4093842.179, 90.49, 3.40, 5.12
** 256813.729, 4093841.500, 90.56, 3.40, 5.12
** 256837.479, 4093842.179, 92.20, 3.40, 5.12
** 256846.300, 4093842.179, 94.04, 3.40, 5.12
** 257119.079, 4093514.436, 96.11, 3.40, 5.12
** 257233.755, 4093525.293, 96.71, 3.40, 5.12
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   LOCATION L0002506     VOLUME   257219.657 4093534.729 96.68
   LOCATION L0002507     VOLUME   257208.901 4093532.424 96.65
   LOCATION L0002508     VOLUME   257198.146 4093530.119 96.58
   LOCATION L0002509     VOLUME   257187.390 4093527.814 96.54
   LOCATION L0002510     VOLUME   257176.634 4093525.509 96.48
   LOCATION L0002511     VOLUME   257165.878 4093523.205 96.47
   LOCATION L0002512     VOLUME   257155.122 4093520.900 96.42
   LOCATION L0002513     VOLUME   257144.366 4093518.595 96.37
   LOCATION L0002514     VOLUME   257133.611 4093516.290 96.36
   LOCATION L0002515     VOLUME   257122.702 4093516.612 96.30
   LOCATION L0002516     VOLUME   257113.674 4093521.262 96.26
   LOCATION L0002517     VOLUME   257106.700 4093529.769 96.27
   LOCATION L0002518     VOLUME   257099.726 4093538.276 96.26
   LOCATION L0002519     VOLUME   257092.753 4093546.783 96.21
   LOCATION L0002520     VOLUME   257085.779 4093555.290 96.23
   LOCATION L0002521     VOLUME   257078.805 4093563.797 96.25
   LOCATION L0002522     VOLUME   257071.832 4093572.304 96.20
   LOCATION L0002523     VOLUME   257064.858 4093580.811 96.18
   LOCATION L0002524     VOLUME   257057.884 4093589.318 96.25
   LOCATION L0002525     VOLUME   257050.911 4093597.824 96.27
   LOCATION L0002526     VOLUME   257043.937 4093606.331 96.27
   LOCATION L0002527     VOLUME   257036.963 4093614.838 96.27
   LOCATION L0002528     VOLUME   257029.990 4093623.345 96.27
   LOCATION L0002529     VOLUME   257023.016 4093631.852 96.27
   LOCATION L0002530     VOLUME   257016.043 4093640.359 96.29
   LOCATION L0002531     VOLUME   257009.069 4093648.866 96.34
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LOCATION L0002533 VOLUME 256995.122 4093665.880 96.43
LOCATION L0002534 VOLUME 256988.148 4093674.387 96.57
LOCATION L0002535 VOLUME 256981.174 4093682.894 96.68
LOCATION L0002536 VOLUME 256974.201 4093691.401 96.76
LOCATION L0002537 VOLUME 256967.227 4093699.908 96.77
LOCATION L0002538 VOLUME 256960.253 4093708.415 96.77
LOCATION L0002539 VOLUME 256953.280 4093716.922 96.77
LOCATION L0002540 VOLUME 256946.306 4093725.429 96.77
LOCATION L0002541 VOLUME 256939.333 4093733.936 96.77
LOCATION L0002542 VOLUME 256932.359 4093742.443 96.77
LOCATION L0002543 VOLUME 256925.385 4093750.950 96.77
LOCATION L0002544 VOLUME 256918.412 4093759.457 96.77
LOCATION L0002545 VOLUME 256911.438 4093767.964 96.77
LOCATION L0002546 VOLUME 256904.464 4093776.471 96.77
LOCATION L0002547 VOLUME 256897.491 4093784.978 96.77
LOCATION L0002548 VOLUME 256890.517 4093793.485 96.77
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LOCATION L0002550 VOLUME 256876.570 4093810.498 96.77
LOCATION L0002551 VOLUME 256869.596 4093819.005 96.77
LOCATION L0002552 VOLUME 256862.622 4093827.512 96.77
LOCATION L0002553 VOLUME 256855.649 4093836.019 96.77
LOCATION L0002554 VOLUME 256848.675 4093844.526 96.77
LOCATION L0002555 VOLUME 256841.702 4093853.033 96.77
LOCATION L0002556 VOLUME 256834.728 4093861.540 96.77
LOCATION L0002557 VOLUME 256827.754 4093870.047 96.77
LOCATION L0002558 VOLUME 256820.781 4093878.554 96.77
LOCATION L0002559 VOLUME 256813.807 4093887.061 96.77
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LOCATION L0002564 VOLUME 256771.183 4093907.761 96.87
LOCATION L0002565 VOLUME 256768.945 4093898.144 96.87
LOCATION L0002566 VOLUME 256768.945 4093887.144 96.83
LOCATION L0002567 VOLUME 256768.945 4093876.144 96.81
LOCATION L0002568 VOLUME 256768.945 4093865.144 96.85
LOCATION L0002569 VOLUME 256768.945 4093854.144 96.85
LOCATION L0002570 VOLUME 256773.235 4093845.032 96.83
LOCATION L0002571 VOLUME 256782.853 4093841.804 96.77
LOCATION L0002572 VOLUME 256793.842 4093842.069 96.77
LOCATION L0002573 VOLUME 256804.838 4093841.754 96.77
LOCATION L0002574 VOLUME 256815.833 4093841.560 96.77
LOCATION L0002575 VOLUME 256826.829 4093841.875 96.77
LOCATION L0002576 VOLUME 256837.824 4093842.179 96.77
LOCATION L0002577 VOLUME 256847.915 4093840.239 96.77
LOCATION L0002578 VOLUME 256854.952 4093831.784 96.77
LOCATION L0002579 VOLUME 256861.988 4093823.329 96.77
LOCATION L0002580 VOLUME 256869.025 4093814.875 96.77
LOCATION L0002581 VOLUME 256876.062 4093806.420 96.77

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   LOCATION L0002583     VOLUME   256890.136 4093789.510 96.77
   LOCATION L0002584     VOLUME   256897.173 4093781.056 96.77
   LOCATION L0002585     VOLUME   256904.210 4093772.601 96.77
   LOCATION L0002586     VOLUME   256911.247 4093764.146 96.77
   LOCATION L0002587     VOLUME   256918.283 4093755.691 96.77
   LOCATION L0002588     VOLUME   256925.320 4093747.237 96.77
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   LOCATION L0002590     VOLUME   256939.394 4093730.327 96.77
   LOCATION L0002591     VOLUME   256946.431 4093721.872 96.77
   LOCATION L0002592     VOLUME   256953.468 4093713.418 96.77
   LOCATION L0002593     VOLUME   256960.505 4093704.963 96.77
   LOCATION L0002594     VOLUME   256967.541 4093696.508 96.77
   LOCATION L0002595     VOLUME   256974.578 4093688.053 96.75
   LOCATION L0002596     VOLUME   256981.615 4093679.599 96.66
   LOCATION L0002597     VOLUME   256988.652 4093671.144 96.55
   LOCATION L0002598     VOLUME   256995.689 4093662.689 96.41
   LOCATION L0002599     VOLUME   257002.726 4093654.235 96.37
   LOCATION L0002600     VOLUME   257009.763 4093645.780 96.32
   LOCATION L0002601     VOLUME   257016.799 4093637.325 96.28
   LOCATION L0002602     VOLUME   257023.836 4093628.870 96.27
   LOCATION L0002603     VOLUME   257030.873 4093620.416 96.27
   LOCATION L0002604     VOLUME   257037.910 4093611.961 96.27
   LOCATION L0002605     VOLUME   257044.947 4093603.506 96.27
   LOCATION L0002606     VOLUME   257051.984 4093595.051 96.27
   LOCATION L0002607     VOLUME   257059.021 4093586.597 96.23
   LOCATION L0002608     VOLUME   257066.057 4093578.142 96.17
   LOCATION L0002609     VOLUME   257073.094 4093569.687 96.21
   LOCATION L0002610     VOLUME   257080.131 4093561.232 96.26
   LOCATION L0002611     VOLUME   257087.168 4093552.778 96.21
   LOCATION L0002612     VOLUME   257094.205 4093544.323 96.22
   LOCATION L0002613     VOLUME   257101.242 4093535.868 96.27
   LOCATION L0002614     VOLUME   257108.279 4093527.413 96.27
   LOCATION L0002615     VOLUME   257115.316 4093518.959 96.26
   LOCATION L0002616     VOLUME   257124.173 4093514.919 96.30
   LOCATION L0002617     VOLUME   257135.124 4093515.955 96.36
   LOCATION L0002618     VOLUME   257146.075 4093516.992 96.37
   LOCATION L0002619     VOLUME   257157.026 4093518.029 96.42
   LOCATION L0002620     VOLUME   257167.977 4093519.066 96.46
   LOCATION L0002621     VOLUME   257178.928 4093520.103 96.48
   LOCATION L0002622     VOLUME   257189.879 4093521.139 96.54
   LOCATION L0002623     VOLUME   257200.830 4093522.176 96.58
   LOCATION L0002624     VOLUME   257211.781 4093523.213 96.63
   LOCATION L0002625     VOLUME   257222.732 4093524.250 96.67
   LOCATION L0002626     VOLUME   257233.683 4093525.287 96.69
** End of LINE VOLUME Source ID = NRD2
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** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = NRD3
** DESCRSRC
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** PREFIX
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** Configuration = Adjacent
** Emission Rate = 0.1
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** 256747.874, 4093969.863, 95.08, 4.25, 4.65
** 256726.272, 4093982.073, 96.89, 4.25, 4.65
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** 256365.180, 4093833.205, 93.00, 4.25, 4.65
** 256366.709, 4093753.673, 92.18, 4.25, 4.65
** 256382.004, 4093710.847, 94.34, 4.25, 4.65
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   LOCATION L0002630     VOLUME   257206.674 4093527.975 96.62
   LOCATION L0002631     VOLUME   257196.878 4093525.966 96.57
   LOCATION L0002632     VOLUME   257187.082 4093523.956 96.53
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   LOCATION L0002635     VOLUME   257157.694 4093517.928 96.43
   LOCATION L0002636     VOLUME   257147.898 4093515.918 96.37
   LOCATION L0002637     VOLUME   257138.102 4093513.909 96.36
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   LOCATION L0002639     VOLUME   257120.477 4093519.691 96.29
   LOCATION L0002640     VOLUME   257112.214 4093525.325 96.26
   LOCATION L0002641     VOLUME   257105.462 4093532.605 96.27
   LOCATION L0002642     VOLUME   257099.131 4093540.346 96.25
   LOCATION L0002643     VOLUME   257092.801 4093548.087 96.21
   LOCATION L0002644     VOLUME   257086.470 4093555.828 96.24
   LOCATION L0002645     VOLUME   257080.139 4093563.569 96.26
   LOCATION L0002646     VOLUME   257073.809 4093571.311 96.22
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LOCATION L0002703 VOLUME 256696.233 4093985.403 97.17
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LOCATION L0002708 VOLUME 256646.805 4093977.863 97.23
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LOCATION L0002711 VOLUME 256618.627 4093967.764 97.15
LOCATION L0002712 VOLUME 256609.293 4093964.174 97.07
LOCATION L0002713 VOLUME 256599.960 4093960.584 96.99
LOCATION L0002714 VOLUME 256590.941 4093956.341 96.90
LOCATION L0002715 VOLUME 256582.314 4093951.284 96.88
LOCATION L0002716 VOLUME 256573.687 4093946.227 96.87
LOCATION L0002717 VOLUME 256564.744 4093941.954 96.80
LOCATION L0002718 VOLUME 256555.020 4093939.621 96.77
LOCATION L0002719 VOLUME 256545.296 4093937.288 96.77
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LOCATION L0002721 VOLUME 256525.697 4093934.197 96.77
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LOCATION L0002732 VOLUME 256417.040 4093926.851 98.27
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LOCATION L0002734 VOLUME 256399.494 4093918.961 98.27
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LOCATION L0002736 VOLUME 256386.324 4093903.910 98.27
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LOCATION L0002742 VOLUME 256367.076 4093849.796 98.08
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LOCATION L0002744 VOLUME 256365.243 4093829.904 97.98
LOCATION L0002745 VOLUME 256365.436 4093819.906 97.97
LOCATION L0002746 VOLUME 256365.628 4093809.908 97.95

LOCATION L0002747 VOLUME 256365.820 4093799.910 97.89
LOCATION L0002748 VOLUME 256366.012 4093789.912 97.85
LOCATION L0002749 VOLUME 256366.205 4093779.914 97.80
LOCATION L0002750 VOLUME 256366.397 4093769.916 97.75
LOCATION L0002751 VOLUME 256366.589 4093759.917 97.66
LOCATION L0002752 VOLUME 256367.972 4093750.137 97.56
LOCATION L0002753 VOLUME 256371.335 4093740.720 97.47
LOCATION L0002754 VOLUME 256374.699 4093731.302 97.39
LOCATION L0002755 VOLUME 256378.062 4093721.885 97.30
LOCATION L0002756 VOLUME 256381.425 4093712.468 97.21
LOCATION L0002757 VOLUME 256388.422 4093705.617 97.21
LOCATION L0002758 VOLUME 256396.175 4093699.301 97.18
LOCATION L0002759 VOLUME 256403.927 4093692.984 97.19
LOCATION L0002760 VOLUME 256411.680 4093686.667 97.14
LOCATION L0002761 VOLUME 256419.432 4093680.350 97.07
LOCATION L0002762 VOLUME 256428.034 4093675.556 97.07
LOCATION L0002763 VOLUME 256437.481 4093672.279 97.09
LOCATION L0002764 VOLUME 256446.929 4093669.001 97.13
LOCATION L0002765 VOLUME 256456.376 4093665.723 97.16
LOCATION L0002766 VOLUME 256465.824 4093662.445 97.18
LOCATION L0002767 VOLUME 256475.271 4093659.168 97.16
LOCATION L0002768 VOLUME 256484.719 4093655.890 97.12
LOCATION L0002769 VOLUME 256494.167 4093652.612 97.15
LOCATION L0002770 VOLUME 256503.890 4093650.541 97.18
LOCATION L0002771 VOLUME 256513.823 4093649.386 97.22
LOCATION L0002772 VOLUME 256523.756 4093648.231 97.26
LOCATION L0002773 VOLUME 256533.689 4093647.076 97.27
LOCATION L0002774 VOLUME 256543.622 4093645.921 97.24
LOCATION L0002775 VOLUME 256553.555 4093644.766 97.19
LOCATION L0002776 VOLUME 256563.489 4093643.611 97.11
LOCATION L0002777 VOLUME 256573.477 4093643.171 97.00
LOCATION L0002778 VOLUME 256583.469 4093642.772 96.97
LOCATION L0002779 VOLUME 256593.461 4093642.372 96.97
LOCATION L0002780 VOLUME 256603.453 4093641.972 96.98
LOCATION L0002781 VOLUME 256613.445 4093641.573 97.03
LOCATION L0002782 VOLUME 256623.437 4093641.173 97.05
LOCATION L0002783 VOLUME 256633.429 4093640.773 97.02
LOCATION L0002784 VOLUME 256643.421 4093640.374 96.96
LOCATION L0002785 VOLUME 256653.414 4093639.974 96.87
LOCATION L0002786 VOLUME 256663.406 4093639.574 96.81
LOCATION L0002787 VOLUME 256673.398 4093639.175 96.78
LOCATION L0002788 VOLUME 256683.390 4093638.775 96.77
LOCATION L0002789 VOLUME 256693.382 4093638.375 96.77
LOCATION L0002790 VOLUME 256703.374 4093637.976 96.77
LOCATION L0002791 VOLUME 256713.366 4093637.576 96.77
LOCATION L0002792 VOLUME 256723.358 4093637.176 96.77
LOCATION L0002793 VOLUME 256733.350 4093636.777 96.77
LOCATION L0002794 VOLUME 256743.342 4093636.377 96.77
LOCATION L0002795 VOLUME 256753.334 4093635.977 96.77
LOCATION L0002796 VOLUME 256763.326 4093635.578 96.77

LOCATION L0002797 VOLUME 256773.318 4093635.178 96.77
LOCATION L0002798 VOLUME 256783.310 4093634.778 96.77
LOCATION L0002799 VOLUME 256793.302 4093634.378 96.77
LOCATION L0002800 VOLUME 256803.294 4093633.979 96.79
LOCATION L0002801 VOLUME 256813.286 4093633.579 96.79
LOCATION L0002802 VOLUME 256823.278 4093633.179 96.77
LOCATION L0002803 VOLUME 256833.270 4093632.780 96.77
LOCATION L0002804 VOLUME 256843.262 4093632.380 96.77
LOCATION L0002805 VOLUME 256853.254 4093631.980 96.80
LOCATION L0002806 VOLUME 256863.246 4093631.581 96.80
LOCATION L0002807 VOLUME 256873.238 4093631.181 96.78
LOCATION L0002808 VOLUME 256883.230 4093630.781 96.82
LOCATION L0002809 VOLUME 256893.222 4093630.382 96.86
LOCATION L0002810 VOLUME 256903.214 4093629.982 96.86
LOCATION L0002811 VOLUME 256913.206 4093629.582 96.82
LOCATION L0002812 VOLUME 256923.198 4093629.183 96.78
LOCATION L0002813 VOLUME 256933.190 4093628.783 96.77
LOCATION L0002814 VOLUME 256943.182 4093628.383 96.77
LOCATION L0002815 VOLUME 256953.174 4093627.984 96.77
LOCATION L0002816 VOLUME 256963.166 4093627.584 96.73
LOCATION L0002817 VOLUME 256973.158 4093627.184 96.67
LOCATION L0002818 VOLUME 256983.150 4093626.785 96.62
LOCATION L0002819 VOLUME 256993.142 4093626.385 96.53
LOCATION L0002820 VOLUME 257003.134 4093625.985 96.38
LOCATION L0002821 VOLUME 257013.126 4093625.586 96.26
LOCATION L0002822 VOLUME 257023.022 4093624.993 96.27
LOCATION L0002823 VOLUME 257029.354 4093617.254 96.27
LOCATION L0002824 VOLUME 257035.687 4093609.514 96.27
LOCATION L0002825 VOLUME 257042.019 4093601.775 96.27
LOCATION L0002826 VOLUME 257048.351 4093594.035 96.25
LOCATION L0002827 VOLUME 257054.684 4093586.296 96.23
LOCATION L0002828 VOLUME 257061.016 4093578.556 96.17
LOCATION L0002829 VOLUME 257067.349 4093570.816 96.17
LOCATION L0002830 VOLUME 257073.681 4093563.077 96.22
LOCATION L0002831 VOLUME 257080.013 4093555.337 96.22
LOCATION L0002832 VOLUME 257086.346 4093547.598 96.17
LOCATION L0002833 VOLUME 257092.678 4093539.858 96.21
LOCATION L0002834 VOLUME 257099.010 4093532.119 96.25
LOCATION L0002835 VOLUME 257105.343 4093524.379 96.25
LOCATION L0002836 VOLUME 257111.675 4093516.639 96.25
LOCATION L0002837 VOLUME 257118.008 4093508.900 96.25
LOCATION L0002838 VOLUME 257127.167 4093508.937 96.29
LOCATION L0002839 VOLUME 257136.992 4093510.802 96.35
LOCATION L0002840 VOLUME 257146.816 4093512.667 96.37
LOCATION L0002841 VOLUME 257156.641 4093514.533 96.41
LOCATION L0002842 VOLUME 257166.465 4093516.398 96.46
LOCATION L0002843 VOLUME 257176.290 4093518.264 96.47
LOCATION L0002844 VOLUME 257186.114 4093520.129 96.52
LOCATION L0002845 VOLUME 257195.939 4093521.994 96.56
LOCATION L0002846 VOLUME 257205.763 4093523.860 96.60

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   LOCATION L0002847     VOLUME   257215.588 4093525.725 96.66
   LOCATION L0002848     VOLUME   257225.412 4093527.591 96.67
   LOCATION L0002849     VOLUME   257235.236 4093529.456 96.77
** End of LINE VOLUME Source ID = NRD3
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** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SRD1
** DESCRSRC
** PREFIX
** Length of Side = 10.00
** Configuration = Adjacent
** Emission Rate = 0.23
** Vertical Dimension = 8.50
** SZINIT = 3.95
** Nodes = 26
** 256767.628, 4090654.073, 95.97, 4.25, 4.65
** 256169.381, 4090651.949, 93.19, 4.25, 4.65
** 256147.433, 4090642.745, 93.15, 4.25, 4.65
** 256129.734, 4090614.426, 93.85, 4.25, 4.65
** 256129.734, 4090588.938, 96.56, 4.25, 4.65
** 256133.982, 4090559.203, 95.81, 4.25, 4.65
** 256137.522, 4090530.175, 95.25, 4.25, 4.65
** 256134.690, 4090511.060, 95.53, 4.25, 4.65
** 256130.442, 4090480.617, 94.90, 4.25, 4.65
** 256130.442, 4090453.713, 94.57, 4.25, 4.65
** 256139.646, 4090432.474, 93.44, 4.25, 4.65
** 256163.009, 4090417.606, 92.95, 4.25, 4.65
** 256187.081, 4090411.942, 93.27, 4.25, 4.65
** 256208.320, 4090412.650, 93.72, 4.25, 4.65
** 256229.560, 4090421.146, 94.14, 4.25, 4.65
** 256250.799, 4090436.721, 93.32, 4.25, 4.65
** 256264.251, 4090457.961, 93.38, 4.25, 4.65
** 256281.243, 4090484.156, 94.75, 4.25, 4.65
** 256290.446, 4090508.228, 92.73, 4.25, 4.65
** 256294.694, 4090545.043, 92.74, 4.25, 4.65
** 256297.526, 4090599.558, 93.72, 4.25, 4.65
** 256296.110, 4090629.293, 93.41, 4.25, 4.65
** 256302.482, 4090640.621, 93.55, 4.25, 4.65
** 256327.969, 4090647.701, 93.33, 4.25, 4.65
** 256334.341, 4090649.825, 93.24, 4.25, 4.65
** 256766.920, 4090650.533, 95.99, 4.25, 4.65
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   LOCATION L0002851     VOLUME   256752.628 4090654.019 96.43
   LOCATION L0002852     VOLUME   256742.628 4090653.984 96.28
   LOCATION L0002853     VOLUME   256732.628 4090653.948 96.16
   LOCATION L0002854     VOLUME   256722.628 4090653.913 96.07
   LOCATION L0002855     VOLUME   256712.628 4090653.877 95.93
   LOCATION L0002856     VOLUME   256702.628 4090653.842 95.78
   LOCATION L0002857     VOLUME   256692.628 4090653.806 95.61
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LOCATION L0002858 VOLUME 256682.628 4090653.771 95.47
LOCATION L0002859 VOLUME 256672.628 4090653.735 95.30
LOCATION L0002860 VOLUME 256662.629 4090653.700 95.16
LOCATION L0002861 VOLUME 256652.629 4090653.664 95.07
LOCATION L0002862 VOLUME 256642.629 4090653.629 94.93
LOCATION L0002863 VOLUME 256632.629 4090653.593 94.78
LOCATION L0002864 VOLUME 256622.629 4090653.558 94.61
LOCATION L0002865 VOLUME 256612.629 4090653.522 94.42
LOCATION L0002866 VOLUME 256602.629 4090653.487 94.30
LOCATION L0002867 VOLUME 256592.629 4090653.451 94.20
LOCATION L0002868 VOLUME 256582.629 4090653.416 94.11
LOCATION L0002869 VOLUME 256572.629 4090653.380 94.01
LOCATION L0002870 VOLUME 256562.629 4090653.345 93.91
LOCATION L0002871 VOLUME 256552.629 4090653.309 93.81
LOCATION L0002872 VOLUME 256542.629 4090653.274 93.71
LOCATION L0002873 VOLUME 256532.629 4090653.238 93.61
LOCATION L0002874 VOLUME 256522.629 4090653.203 93.51
LOCATION L0002875 VOLUME 256512.629 4090653.167 93.44
LOCATION L0002876 VOLUME 256502.630 4090653.132 93.42
LOCATION L0002877 VOLUME 256492.630 4090653.096 93.43
LOCATION L0002878 VOLUME 256482.630 4090653.061 93.43
LOCATION L0002879 VOLUME 256472.630 4090653.025 93.43
LOCATION L0002880 VOLUME 256462.630 4090652.990 93.43
LOCATION L0002881 VOLUME 256452.630 4090652.954 93.38
LOCATION L0002882 VOLUME 256442.630 4090652.919 93.34
LOCATION L0002883 VOLUME 256432.630 4090652.883 93.32
LOCATION L0002884 VOLUME 256422.630 4090652.848 93.25
LOCATION L0002885 VOLUME 256412.630 4090652.812 93.21
LOCATION L0002886 VOLUME 256402.630 4090652.777 93.19
LOCATION L0002887 VOLUME 256392.630 4090652.741 93.18
LOCATION L0002888 VOLUME 256382.630 4090652.706 93.19
LOCATION L0002889 VOLUME 256372.630 4090652.670 93.18
LOCATION L0002890 VOLUME 256362.630 4090652.635 93.18
LOCATION L0002891 VOLUME 256352.630 4090652.599 93.20
LOCATION L0002892 VOLUME 256342.631 4090652.564 93.27
LOCATION L0002893 VOLUME 256332.631 4090652.528 93.37
LOCATION L0002894 VOLUME 256322.631 4090652.493 93.48
LOCATION L0002895 VOLUME 256312.631 4090652.457 93.64
LOCATION L0002896 VOLUME 256302.631 4090652.422 93.74
LOCATION L0002897 VOLUME 256292.631 4090652.386 93.76
LOCATION L0002898 VOLUME 256282.631 4090652.351 93.77
LOCATION L0002899 VOLUME 256272.631 4090652.315 93.77
LOCATION L0002900 VOLUME 256262.631 4090652.280 93.77
LOCATION L0002901 VOLUME 256252.631 4090652.244 93.77
LOCATION L0002902 VOLUME 256242.631 4090652.209 93.77
LOCATION L0002903 VOLUME 256232.631 4090652.173 93.76
LOCATION L0002904 VOLUME 256222.631 4090652.138 93.62
LOCATION L0002905 VOLUME 256212.631 4090652.102 93.24
LOCATION L0002906 VOLUME 256202.631 4090652.067 92.93
LOCATION L0002907 VOLUME 256192.631 4090652.031 92.82

LOCATION L0002908 VOLUME 256182.632 4090651.996 92.82
LOCATION L0002909 VOLUME 256172.632 4090651.960 92.94
LOCATION L0002910 VOLUME 256163.157 4090649.339 93.03
LOCATION L0002911 VOLUME 256153.935 4090645.471 93.03
LOCATION L0002912 VOLUME 256145.870 4090640.243 93.12
LOCATION L0002913 VOLUME 256140.570 4090631.763 93.24
LOCATION L0002914 VOLUME 256135.270 4090623.283 93.33
LOCATION L0002915 VOLUME 256129.970 4090614.803 93.47
LOCATION L0002916 VOLUME 256129.734 4090604.871 93.47
LOCATION L0002917 VOLUME 256129.734 4090594.871 94.62
LOCATION L0002918 VOLUME 256130.309 4090584.912 96.94
LOCATION L0002919 VOLUME 256131.723 4090575.012 97.71
LOCATION L0002920 VOLUME 256133.137 4090565.113 97.60
LOCATION L0002921 VOLUME 256134.470 4090555.203 96.33
LOCATION L0002922 VOLUME 256135.680 4090545.276 95.55
LOCATION L0002923 VOLUME 256136.891 4090535.350 94.60
LOCATION L0002924 VOLUME 256136.820 4090525.440 93.82
LOCATION L0002925 VOLUME 256135.355 4090515.548 93.58
LOCATION L0002926 VOLUME 256133.935 4090505.649 93.52
LOCATION L0002927 VOLUME 256132.553 4090495.745 93.42
LOCATION L0002928 VOLUME 256131.171 4090485.841 93.28
LOCATION L0002929 VOLUME 256130.442 4090475.892 93.09
LOCATION L0002930 VOLUME 256130.442 4090465.892 92.90
LOCATION L0002931 VOLUME 256130.442 4090455.892 92.75
LOCATION L0002932 VOLUME 256133.552 4090446.536 92.60
LOCATION L0002933 VOLUME 256137.528 4090437.361 92.44
LOCATION L0002934 VOLUME 256143.589 4090429.964 92.37
LOCATION L0002935 VOLUME 256152.025 4090424.596 92.27
LOCATION L0002936 VOLUME 256160.462 4090419.227 92.19
LOCATION L0002937 VOLUME 256169.804 4090416.007 92.23
LOCATION L0002938 VOLUME 256179.538 4090413.717 92.21
LOCATION L0002939 VOLUME 256189.331 4090412.017 92.19
LOCATION L0002940 VOLUME 256199.326 4090412.350 92.22
LOCATION L0002941 VOLUME 256209.249 4090413.022 92.37
LOCATION L0002942 VOLUME 256218.534 4090416.735 92.55
LOCATION L0002943 VOLUME 256227.819 4090420.449 92.58
LOCATION L0002944 VOLUME 256236.112 4090425.951 92.61
LOCATION L0002945 VOLUME 256244.176 4090431.864 92.74
LOCATION L0002946 VOLUME 256251.755 4090438.231 92.90
LOCATION L0002947 VOLUME 256257.105 4090446.679 93.01
LOCATION L0002948 VOLUME 256262.456 4090455.127 93.72
LOCATION L0002949 VOLUME 256267.867 4090463.536 94.64
LOCATION L0002950 VOLUME 256273.309 4090471.926 95.76
LOCATION L0002951 VOLUME 256278.751 4090480.315 96.44
LOCATION L0002952 VOLUME 256283.179 4090489.221 95.16
LOCATION L0002953 VOLUME 256286.750 4090498.561 93.37
LOCATION L0002954 VOLUME 256290.322 4090507.902 92.39
LOCATION L0002955 VOLUME 256291.553 4090517.815 92.24
LOCATION L0002956 VOLUME 256292.699 4090527.749 92.31
LOCATION L0002957 VOLUME 256293.845 4090537.683 92.40

LOCATION L0002958 VOLUME 256294.829 4090547.631 92.39
LOCATION L0002959 VOLUME 256295.347 4090557.617 92.61
LOCATION L0002960 VOLUME 256295.866 4090567.604 92.82
LOCATION L0002961 VOLUME 256296.385 4090577.590 92.94
LOCATION L0002962 VOLUME 256296.904 4090587.577 93.12
LOCATION L0002963 VOLUME 256297.423 4090597.564 93.24
LOCATION L0002964 VOLUME 256297.146 4090607.552 93.35
LOCATION L0002965 VOLUME 256296.670 4090617.540 93.52
LOCATION L0002966 VOLUME 256296.194 4090627.529 93.65
LOCATION L0002967 VOLUME 256300.147 4090636.470 93.73
LOCATION L0002968 VOLUME 256307.528 4090642.023 93.77
LOCATION L0002969 VOLUME 256317.163 4090644.699 93.69
LOCATION L0002970 VOLUME 256326.798 4090647.376 93.53
LOCATION L0002971 VOLUME 256336.409 4090649.828 93.39
LOCATION L0002972 VOLUME 256346.409 4090649.845 93.29
LOCATION L0002973 VOLUME 256356.409 4090649.861 93.27
LOCATION L0002974 VOLUME 256366.409 4090649.877 93.27
LOCATION L0002975 VOLUME 256376.409 4090649.894 93.27
LOCATION L0002976 VOLUME 256386.409 4090649.910 93.27
LOCATION L0002977 VOLUME 256396.409 4090649.926 93.26
LOCATION L0002978 VOLUME 256406.409 4090649.943 93.27
LOCATION L0002979 VOLUME 256416.409 4090649.959 93.27
LOCATION L0002980 VOLUME 256426.409 4090649.975 93.33
LOCATION L0002981 VOLUME 256436.409 4090649.992 93.37
LOCATION L0002982 VOLUME 256446.409 4090650.008 93.37
LOCATION L0002983 VOLUME 256456.409 4090650.025 93.43
LOCATION L0002984 VOLUME 256466.409 4090650.041 93.45
LOCATION L0002985 VOLUME 256476.409 4090650.057 93.44
LOCATION L0002986 VOLUME 256486.409 4090650.074 93.44
LOCATION L0002987 VOLUME 256496.409 4090650.090 93.44
LOCATION L0002988 VOLUME 256506.409 4090650.106 93.44
LOCATION L0002989 VOLUME 256516.409 4090650.123 93.48
LOCATION L0002990 VOLUME 256526.409 4090650.139 93.55
LOCATION L0002991 VOLUME 256536.409 4090650.156 93.65
LOCATION L0002992 VOLUME 256546.409 4090650.172 93.75
LOCATION L0002993 VOLUME 256556.409 4090650.188 93.85
LOCATION L0002994 VOLUME 256566.409 4090650.205 93.95
LOCATION L0002995 VOLUME 256576.409 4090650.221 94.05
LOCATION L0002996 VOLUME 256586.409 4090650.237 94.15
LOCATION L0002997 VOLUME 256596.409 4090650.254 94.26
LOCATION L0002998 VOLUME 256606.409 4090650.270 94.36
LOCATION L0002999 VOLUME 256616.409 4090650.286 94.52
LOCATION L0003000 VOLUME 256626.409 4090650.303 94.70
LOCATION L0003001 VOLUME 256636.409 4090650.319 94.85
LOCATION L0003002 VOLUME 256646.409 4090650.336 95.01
LOCATION L0003003 VOLUME 256656.409 4090650.352 95.14
LOCATION L0003004 VOLUME 256666.409 4090650.368 95.24
LOCATION L0003005 VOLUME 256676.409 4090650.385 95.41
LOCATION L0003006 VOLUME 256686.409 4090650.401 95.54
LOCATION L0003007 VOLUME 256696.409 4090650.417 95.71

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   LOCATION L0003008     VOLUME   256706.409 4090650.434 95.85
   LOCATION L0003009     VOLUME   256716.409 4090650.450 96.01
   LOCATION L0003010     VOLUME   256726.409 4090650.466 96.14
   LOCATION L0003011     VOLUME   256736.409 4090650.483 96.23
   LOCATION L0003012     VOLUME   256746.409 4090650.499 96.35
   LOCATION L0003013     VOLUME   256756.409 4090650.516 96.51
   LOCATION L0003014     VOLUME   256766.409 4090650.532 96.64
** End of LINE VOLUME Source ID = SRD1
   LOCATION SPILE        AREAPOLY   256392.826  4090627.404       93.670
   LOCATION SPLNT        VOLUME     256043.280  4090639.630       92.920
   LOCATION NASTK        POINT      256837.260  4093726.550       96.770
   LOCATION NAPLNT       VOLUME     256858.230  4093716.440       96.770
   LOCATION NMPLNT       VOLUME     256794.189  4093865.734       96.770
   LOCATION NPLNT        VOLUME     256555.250  4093781.235       96.770
   LOCATION NPILE        AREAPOLY   256496.869  4093919.057       96.770
   LOCATION NMINE1       VOLUME     256174.230  4094121.750       96.630
   LOCATION NMINE2       VOLUME     256099.183  4093800.700       94.820
   LOCATION NMINE3       VOLUME     256003.286  4093458.808       92.170
   LOCATION NMINE4       VOLUME     256307.654  4093450.469       96.080
   LOCATION NMINE5       VOLUME     256587.006  4093121.084       94.390
   LOCATION NMINE6       VOLUME     256841.340  4092816.717       95.170
   LOCATION NMINE7       VOLUME     257016.456  4093842.394       96.790
   LOCATION NMINE8       VOLUME     257112.353  4093346.233       96.130
   LOCATION NMINE9       VOLUME     257045.642  4093071.051       95.260
   LOCATION SRMPT        VOLUME     256131.990  4090766.120       94.900
   LOCATION SAPLT        VOLUME     256231.930  4090520.690       94.150
   LOCATION SASTK        POINT      256265.350  4090552.800       92.560
   LOCATION SMINE        VOLUME     255977.203  4090628.407       92.480

** Variable Emissions Type: "By Hour-of-Day (HROFDY)"
** Variable Emission Scenario: "Scenario 1"
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   EMISFACT SSNK         HROFDY 1.0 1.0 1.0 1.0 1.0 1.0
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   EMISFACT NSNK         HROFDY 1.0 1.0 1.0 1.0 1.0 1.0
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EMISFACT L0002972     HROFDY 1.0 1.0 1.0 1.0 1.0 1.0
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EMISFACT NMINE6       HROFDY 1.0 1.0 1.0 1.0 1.0 1.0
EMISFACT NMINE6       HROFDY 1.0 1.0 1.0 1.0 1.0 1.0
EMISFACT NMINE6       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT NMINE7       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT NMINE7       HROFDY 1.0 1.0 1.0 1.0 1.0 1.0
EMISFACT NMINE7       HROFDY 1.0 1.0 1.0 1.0 1.0 1.0
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EMISFACT NMINE8       HROFDY 1.0 1.0 1.0 1.0 1.0 1.0
EMISFACT NMINE8       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
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EMISFACT SRMPT        HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT SAPLT        HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
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EMISFACT SAPLT        HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
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EMISFACT SASTK        HROFDY 1.0 1.0 1.0 1.0 1.0 1.0
EMISFACT SASTK        HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
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EMISFACT SMINE        HROFDY 1.0 1.0 1.0 1.0 1.0 1.0
EMISFACT SMINE        HROFDY 1.0 1.0 1.0 1.0 1.0 1.0
EMISFACT SMINE        HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
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SRCGROUP NMINE3   NMINE3
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SRCGROUP NMINE7   NMINE7
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SRCGROUP NMPLNT   NMPLNT
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SRCGROUP NRD2     L0002607 L0002608 L0002609 L0002610 L0002611 L0002612
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SRCGROUP NRD3     L0002849
SRCGROUP NSNK     NSNK
SRCGROUP SPILE    SPILE
SRCGROUP SPLNT    SPLNT
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SRCGROUP SOUTH    SASTK SMINE
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SRCGROUP POSITIVE L0002442 L0002443 L0002444 L0002445 L0002446 L0002447
SRCGROUP POSITIVE L0002448 L0002449 L0002450 L0002451 L0002452 L0002453
SRCGROUP POSITIVE L0002454 L0002455 L0002456 L0002457 L0002458 L0002459
SRCGROUP POSITIVE L0002460 L0002461 L0002462 L0002463 L0002464 L0002465
SRCGROUP POSITIVE L0002466 L0002467 L0002468 L0002469 L0002470 L0002471
SRCGROUP POSITIVE L0002472 L0002473 L0002474 L0002475 L0002476 L0002477
SRCGROUP POSITIVE L0002478 L0002479 L0002480 L0002481 L0002482 L0002483
```

SRCGROUP POSITIVE L0002484 L0002485 L0002486 L0002487 L0002488 L0002489
SRCGROUP POSITIVE L0002490 L0002491 L0002492 L0002493 L0002494 L0002495
SRCGROUP POSITIVE L0002496 L0002497 L0002498 L0002499 L0002500 L0002501
SRCGROUP POSITIVE L0002502 L0002503 L0002504 L0002505 L0002506 L0002507
SRCGROUP POSITIVE L0002508 L0002509 L0002510 L0002511 L0002512 L0002513
SRCGROUP POSITIVE L0002514 L0002515 L0002516 L0002517 L0002518 L0002519
SRCGROUP POSITIVE L0002520 L0002521 L0002522 L0002523 L0002524 L0002525
SRCGROUP POSITIVE L0002526 L0002527 L0002528 L0002529 L0002530 L0002531
SRCGROUP POSITIVE L0002532 L0002533 L0002534 L0002535 L0002536 L0002537
SRCGROUP POSITIVE L0002538 L0002539 L0002540 L0002541 L0002542 L0002543
SRCGROUP POSITIVE L0002544 L0002545 L0002546 L0002547 L0002548 L0002549
SRCGROUP POSITIVE L0002550 L0002551 L0002552 L0002553 L0002554 L0002555
SRCGROUP POSITIVE L0002556 L0002557 L0002558 L0002559 L0002560 L0002561
SRCGROUP POSITIVE L0002562 L0002563 L0002564 L0002565 L0002566 L0002567
SRCGROUP POSITIVE L0002568 L0002569 L0002570 L0002571 L0002572 L0002573
SRCGROUP POSITIVE L0002574 L0002575 L0002576 L0002577 L0002578 L0002579
SRCGROUP POSITIVE L0002580 L0002581 L0002582 L0002583 L0002584 L0002585
SRCGROUP POSITIVE L0002586 L0002587 L0002588 L0002589 L0002590 L0002591
SRCGROUP POSITIVE L0002592 L0002593 L0002594 L0002595 L0002596 L0002597
SRCGROUP POSITIVE L0002598 L0002599 L0002600 L0002601 L0002602 L0002603
SRCGROUP POSITIVE L0002604 L0002605 L0002606 L0002607 L0002608 L0002609
SRCGROUP POSITIVE L0002610 L0002611 L0002612 L0002613 L0002614 L0002615
SRCGROUP POSITIVE L0002616 L0002617 L0002618 L0002619 L0002620 L0002621
SRCGROUP POSITIVE L0002622 L0002623 L0002624 L0002625 L0002626 NMPLNT
SRCGROUP POSITIVE NPLNT NPILE SPILE SPLNT SASTK SMINE SRMPT SAPLT
SRCGROUP NEGATIVE L0002627 L0002628 L0002629 L0002630 L0002631 L0002632
SRCGROUP NEGATIVE L0002633 L0002634 L0002635 L0002636 L0002637 L0002638
SRCGROUP NEGATIVE L0002639 L0002640 L0002641 L0002642 L0002643 L0002644
SRCGROUP NEGATIVE L0002645 L0002646 L0002647 L0002648 L0002649 L0002650
SRCGROUP NEGATIVE L0002651 L0002652 L0002653 L0002654 L0002655 L0002656
SRCGROUP NEGATIVE L0002657 L0002658 L0002659 L0002660 L0002661 L0002662
SRCGROUP NEGATIVE L0002663 L0002664 L0002665 L0002666 L0002667 L0002668
SRCGROUP NEGATIVE L0002669 L0002670 L0002671 L0002672 L0002673 L0002674
SRCGROUP NEGATIVE L0002675 L0002676 L0002677 L0002678 L0002679 L0002680
SRCGROUP NEGATIVE L0002681 L0002682 L0002683 L0002684 L0002685 L0002686
SRCGROUP NEGATIVE L0002687 L0002688 L0002689 L0002690 L0002691 L0002692
SRCGROUP NEGATIVE L0002693 L0002694 L0002695 L0002696 L0002697 L0002698
SRCGROUP NEGATIVE L0002699 L0002700 L0002701 L0002702 L0002703 L0002704
SRCGROUP NEGATIVE L0002705 L0002706 L0002707 L0002708 L0002709 L0002710
SRCGROUP NEGATIVE L0002711 L0002712 L0002713 L0002714 L0002715 L0002716
SRCGROUP NEGATIVE L0002717 L0002718 L0002719 L0002720 L0002721 L0002722
SRCGROUP NEGATIVE L0002723 L0002724 L0002725 L0002726 L0002727 L0002728
SRCGROUP NEGATIVE L0002729 L0002730 L0002731 L0002732 L0002733 L0002734
SRCGROUP NEGATIVE L0002735 L0002736 L0002737 L0002738 L0002739 L0002740
SRCGROUP NEGATIVE L0002741 L0002742 L0002743 L0002744 L0002745 L0002746
SRCGROUP NEGATIVE L0002747 L0002748 L0002749 L0002750 L0002751 L0002752
SRCGROUP NEGATIVE L0002753 L0002754 L0002755 L0002756 L0002757 L0002758
SRCGROUP NEGATIVE L0002759 L0002760 L0002761 L0002762 L0002763 L0002764
SRCGROUP NEGATIVE L0002765 L0002766 L0002767 L0002768 L0002769 L0002770
SRCGROUP NEGATIVE L0002771 L0002772 L0002773 L0002774 L0002775 L0002776

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   SRCGROUP NEGATIVE L0002777 L0002778 L0002779 L0002780 L0002781 L0002782
   SRCGROUP NEGATIVE L0002783 L0002784 L0002785 L0002786 L0002787 L0002788
   SRCGROUP NEGATIVE L0002789 L0002790 L0002791 L0002792 L0002793 L0002794
   SRCGROUP NEGATIVE L0002795 L0002796 L0002797 L0002798 L0002799 L0002800
   SRCGROUP NEGATIVE L0002801 L0002802 L0002803 L0002804 L0002805 L0002806
   SRCGROUP NEGATIVE L0002807 L0002808 L0002809 L0002810 L0002811 L0002812
   SRCGROUP NEGATIVE L0002813 L0002814 L0002815 L0002816 L0002817 L0002818
   SRCGROUP NEGATIVE L0002819 L0002820 L0002821 L0002822 L0002823 L0002824
   SRCGROUP NEGATIVE L0002825 L0002826 L0002827 L0002828 L0002829 L0002830
   SRCGROUP NEGATIVE L0002831 L0002832 L0002833 L0002834 L0002835 L0002836
   SRCGROUP NEGATIVE L0002837 L0002838 L0002839 L0002840 L0002841 L0002842
   SRCGROUP NEGATIVE L0002843 L0002844 L0002845 L0002846 L0002847 L0002848
   SRCGROUP NEGATIVE L0002849 NMINE8 NMINE9 L0002850 L0002851 L0002852 L0002853
   SRCGROUP NEGATIVE L0002854 L0002855 L0002856 L0002857 L0002858 L0002859
   SRCGROUP NEGATIVE L0002860 L0002861 L0002862 L0002863 L0002864 L0002865
   SRCGROUP NEGATIVE L0002866 L0002867 L0002868 L0002869 L0002870 L0002871
   SRCGROUP NEGATIVE L0002872 L0002873 L0002874 L0002875 L0002876 L0002877
   SRCGROUP NEGATIVE L0002878 L0002879 L0002880 L0002881 L0002882 L0002883
   SRCGROUP NEGATIVE L0002884 L0002885 L0002886 L0002887 L0002888 L0002889
   SRCGROUP NEGATIVE L0002890 L0002891 L0002892 L0002893 L0002894 L0002895
   SRCGROUP NEGATIVE L0002896 L0002897 L0002898 L0002899 L0002900 L0002901
   SRCGROUP NEGATIVE L0002902 L0002903 L0002904 L0002905 L0002906 L0002907
   SRCGROUP NEGATIVE L0002908 L0002909 L0002910 L0002911 L0002912 L0002913
   SRCGROUP NEGATIVE L0002914 L0002915 L0002916 L0002917 L0002918 L0002919
   SRCGROUP NEGATIVE L0002920 L0002921 L0002922 L0002923 L0002924 L0002925
   SRCGROUP NEGATIVE L0002926 L0002927 L0002928 L0002929 L0002930 L0002931
   SRCGROUP NEGATIVE L0002932 L0002933 L0002934 L0002935 L0002936 L0002937
   SRCGROUP NEGATIVE L0002938 L0002939 L0002940 L0002941 L0002942 L0002943
   SRCGROUP NEGATIVE L0002944 L0002945 L0002946 L0002947 L0002948 L0002949
   SRCGROUP NEGATIVE L0002950 L0002951 L0002952 L0002953 L0002954 L0002955
   SRCGROUP NEGATIVE L0002956 L0002957 L0002958 L0002959 L0002960 L0002961
   SRCGROUP NEGATIVE L0002962 L0002963 L0002964 L0002965 L0002966 L0002967
   SRCGROUP NEGATIVE L0002968 L0002969 L0002970 L0002971 L0002972 L0002973
   SRCGROUP NEGATIVE L0002974 L0002975 L0002976 L0002977 L0002978 L0002979
   SRCGROUP NEGATIVE L0002980 L0002981 L0002982 L0002983 L0002984 L0002985
   SRCGROUP NEGATIVE L0002986 L0002987 L0002988 L0002989 L0002990 L0002991
   SRCGROUP NEGATIVE L0002992 L0002993 L0002994 L0002995 L0002996 L0002997
   SRCGROUP NEGATIVE L0002998 L0002999 L0003000 L0003001 L0003002 L0003003
   SRCGROUP NEGATIVE L0003004 L0003005 L0003006 L0003007 L0003008 L0003009
   SRCGROUP NEGATIVE L0003010 L0003011 L0003012 L0003013 L0003014
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE ..\Fresno_18-22.SFC
```

```
   PROFFILE ..\Fresno_18-22.PFL
   SURFDATA 93193 2018 FRESNO/AIR_TERMINAL
   UAIRDATA 23230 2018 OAKLAND/WSO_AP
   PROFBASE 101.0 METERS
ME FINISHED
**
```

APPENDIX I1 NO2-1HR
MODELING FILES

Blasting Events
Operations

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Table 1

- Program Input Data -

- Program Models Selected -

- Concentration
- Using final cloud rise ht. for all calc. distances.
- Flat terrain is assumed.
- Grid system origin is not added to source rectangular coordinates
- Instantaneous sources can use both stable and adiabatic plume rise.
- Grid receptor system is ----------Rectangular

- Print Output Options -

- Print and save data using Detailed processing mode
- Print concentration output units ---------- Micrograms/Cubic Meter

- Receptor Grid System Geometry -

Grid system orientation angle (Degrees) ---------- .0
Receptor X coordinate units ---------- Meters
Y coordinate units ---------- Meters
Z coordinate units ---------- Meters
X origin ---------- .00
Y origin ---------- .00
X Axis of the grid system (Meters)---------- 100.00,
Y Axis of the grid system (Meters)---------- 100.00,

- Source Geometry/Emission Strength -

Material or fuel/explosive ---------- ANFO
Pollutant/species ---------- NO2
Total number of sources ---------- 1

Source Number	Ident	Reference System	Source Type	Emission Type
1	Single Blast	Rectangular	Volume	Instantaneous

Source Number	X Coordinate	Y Coordinate	Z Elevation	Release Height	Emission Strength
1	.0 m	.0 m	.0 m	3.6~ m	5.50000E+01 lb

~ Means the value is defaulted for each hour of met. data.

Source Number	Rect. Expan. Dist. / Reference Dist. /Crosswind	Vertical/Crosswind	Air Entrain-/Dispersion Coeff. Vertical/ment Coeff. /Crosswind	Vertical

1	50.00 m	50.00 m	.00 m	.00 m	.640	1.000	1.000

Table 1 (cont.)

- Program Input Data -

- Source Geometry/Emission Strength -

Source Number	Fuel Heat Content	Fuel Burn Rate	Fuel Burn Time	Initial Diameter
1	890.0 ca/g	9979.03 g/s	2.5 s	7.18~ m

~ Means the value is defaulted for each hour of met. data.

- Pollutant/Species Material Characteristics -

Pollutant/species name ---------- NO2
Pollutant/species is ---------- Gaseous
Particle material half-life ---------- infinite
Molecular weight (g/g-mol) ---------- 46.0
Density of species (g/cm**3) ---------- .00118
Fraction of exhaust cloud constituting pollutant/species ----- 1.0

- Meteorological Data -
([#-#] min-max limits)

Year [1900-2099]---------- 2025
Month [1-12]---------- 8
Day [1-31]---------- 12
Hour (PDT) [00-23]---------- 1300
Minute ---------- 45
Julian day [1- 1]---------- 224
West longitude (degrees) ---------- 119.73070
North latitude (degrees) ---------- 36.95313
Time zone difference from GMT (hours) ---------- 8.
Surface pressure (mb) [600.0-1100.0]---------- 986.00
Cloud cover (8ths) [0-8]---------- .00
Cloud ceiling (m) [.0-20000.0]---------- 10000.00
Net radiation index [-2- 4]---------- 2.
Pasquill stability category [A-F]---------- C
Wind speed reference height (m) ---------- 10.00
Surface roughness length (cm) [.00-100.00]---------- .000
Vertical grad. of pot. temp. (C/m) [-5.000- 5.000]--------- .0

Table 1 (cont.)

- Program Input Data -

- Meteorological Data -
([#-#] min-max limits)

Reference wind speed (m/s) [1.0- 50.0]---------- 2.990
Minimum (at 2m) wind speed (m/s) ---------- 2.167
Air temperature (K) [213.1-333.1]---------- 318.800
Standard dev. of wind direction angle (d) [1.0000-80.0000]------ 16.0000
Standard dev. wind elevation angle (d) [1.0000-50.0000]--------- 6.0000
Longitudinal turbulence intensity (d) [1.0000-106.4000]--------- 21.2800
Measurement time for std. dev. wind dir. angle (s) [2.5-3600.0]- 600.00
Air humidity (%) (.0-100.0)---------- 50.0
Surface mixing layer height (m) [1.0-20000.0]---------- 1200.00
Wind direction (From) (deg) [.0- 360.0]---------- 270.0
Wind-direction shear (d/m) [-45.0- 45.0]---------- .00
Wind-speed power law exponent [.000-5.000]---------- .2
Wind-speed shear (m/s) [.00- 20.00]---------- Compute

- Input/Output Files Used -

Input save data file name ---------- ROCK_IN.INP
Print solution output file name ---------- CEMEX1.OUT
Graphics/solution input/output file ---------- CEMEX1.SOL

Table 2
NO2 Peak Concentration (Micrograms/Cubic Meter)

- X Axis (Meters) -
100.000
Y A

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**
**********************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 11.2.0
** Lakes Environmental Software Inc.
** Date: 9/23/2025
** File: C:\Users\MasonByers\OneDrive - Trinity Consultants, Inc\Desktop\CEMEX\CA
Fresno\NO2Blasting\NO2Blasting\NO2Blasting.ADI
**
**********************************************
**
**
**********************************************
** AERMOD Control Pathway
**********************************************
**
**
CO STARTING
  TITLEONE Rockfield NO2 Blasting
  MODELOPT CONC ARM2
  AVERTIME 1 ANNUAL
  POLLUTID NO2
  FLAGPOLE 1.50
  RUNORNOT RUN
** NO2 Conversion Options
  ARMRATIO 0.500 0.900
  ERRORFIL NO2BLASTING.ERR
CO FINISHED
**
**********************************************
** AERMOD Source Pathway
**********************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
  LOCATION NMINE1     VOLUME   256174.230  4094121.750     91.220
  LOCATION NMINE2     VOLUME   256099.183  4093800.700     89.850
  LOCATION NMINE3     VOLUME   256003.286  4093458.808     82.350
  LOCATION NMINE4     VOLUME   256307.654  4093450.469     89.330
  LOCATION NMINE5     VOLUME   256587.006  4093121.084     83.530
  LOCATION NMINE6     VOLUME   256841.340  4092816.717     91.490
  LOCATION NMINE7     VOLUME   257016.456  4093842.394     87.730
  LOCATION NMINE8     VOLUME   257112.353  4093346.233     96.040
  LOCATION NMINE9     VOLUME   257045.642  4093071.051     96.340
  BACKGRND ANNUAL 17.7
  BACKUNIT PPB
** Source Parameters **
  SRCPARAM NMINE1     1.1843800772   6.750   6.280   6.280
  SRCPARAM NMINE2     1.1843800772   6.750   6.280   6.280
  SRCPARAM NMINE3     1.1843800772   6.750   6.280   6.280
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  SRCPARAM NMINE4      1.1843800772    6.750    6.280    6.280
  SRCPARAM NMINE5      1.1843800772    6.750    6.280    6.280
  SRCPARAM NMINE6      1.1843800772    6.750    6.280    6.280
  SRCPARAM NMINE7      1.1843800772    6.750    6.280    6.280
  SRCPARAM NMINE8      1.1843800772    6.750    6.280    6.280
  SRCPARAM NMINE9      1.1843800772    6.750    6.280    6.280

** Variable Emissions Type: "By Hour-of-Day (HROFDY)"
** Variable Emission Scenario: "Scenario 1"
  EMISFACT NMINE1      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE1      HROFDY 0.0 0.0 0.0 1.0 1.0 1.0
  EMISFACT NMINE1      HROFDY 1.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE1      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE2      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE2      HROFDY 0.0 0.0 0.0 1.0 1.0 1.0
  EMISFACT NMINE2      HROFDY 1.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE2      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE3      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE3      HROFDY 0.0 0.0 0.0 1.0 1.0 1.0
  EMISFACT NMINE3      HROFDY 1.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE3      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE4      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE4      HROFDY 0.0 0.0 0.0 1.0 1.0 1.0
  EMISFACT NMINE4      HROFDY 1.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE4      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE5      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE5      HROFDY 0.0 0.0 0.0 1.0 1.0 1.0
  EMISFACT NMINE5      HROFDY 1.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE5      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE6      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE6      HROFDY 0.0 0.0 0.0 1.0 1.0 1.0
  EMISFACT NMINE6      HROFDY 1.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE6      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE7      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE7      HROFDY 0.0 0.0 0.0 1.0 1.0 1.0
  EMISFACT NMINE7      HROFDY 1.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE7      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE8      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE8      HROFDY 0.0 0.0 0.0 1.0 1.0 1.0
  EMISFACT NMINE8      HROFDY 1.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE8      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE9      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE9      HROFDY 0.0 0.0 0.0 1.0 1.0 1.0
  EMISFACT NMINE9      HROFDY 1.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT NMINE9      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
  SRCGROUP NMINE1   NMINE1
  SRCGROUP NMINE2   NMINE2
  SRCGROUP NMINE3   NMINE3
  SRCGROUP NMINE4   NMINE4
  SRCGROUP NMINE5   NMINE5
  SRCGROUP NMINE6   NMINE6
  SRCGROUP NMINE7   NMINE7
  SRCGROUP NMINE8   NMINE8
  SRCGROUP NMINE9   NMINE9
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   SRCGROUP ALL
SO FINISHED
**
**********************************************
** AERMOD Receptor Pathway
**********************************************
**
**
RE STARTING
   INCLUDED NO2Blasting.rou
RE FINISHED
**
**********************************************
** AERMOD Meteorology Pathway
**********************************************
**
**
ME STARTING
   SURFFILE ..\FRESNO_18-22.SFC
   PROFFILE ..\FRESNO_18-22.PFL
   SURFDATA 93193 2018 FRESNO/AIR_TERMINAL
   UAIRDATA 23230 2018 OAKLAND/WSO_AP
   PROFBASE 101.0 METERS
ME FINISHED
**
**********************************************
** AERMOD Output Pathway
**********************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST 8TH 40
   RECTABLE 1 1ST 8TH 40
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST NO2Blasting.AD\01H1GALL.PLT 31
   PLOTFILE 1 NMINE1 1ST NO2Blasting.AD\01H1G001.PLT 32
   PLOTFILE 1 NMINE2 1ST NO2Blasting.AD\01H1G002.PLT 33
   PLOTFILE 1 NMINE3 1ST NO2Blasting.AD\01H1G003.PLT 34
   PLOTFILE 1 NMINE4 1ST NO2Blasting.AD\01H1G004.PLT 35
   PLOTFILE 1 NMINE5 1ST NO2Blasting.AD\01H1G005.PLT 36
   PLOTFILE 1 NMINE6 1ST NO2Blasting.AD\01H1G006.PLT 37
   PLOTFILE 1 NMINE7 1ST NO2Blasting.AD\01H1G007.PLT 38
   PLOTFILE 1 NMINE8 1ST NO2Blasting.AD\01H1G008.PLT 39
   PLOTFILE 1 NMINE9 1ST NO2Blasting.AD\01H1G009.PLT 40
   PLOTFILE 1 ALL 8TH NO2Blasting.AD\01H8GALL.PLT 41
   PLOTFILE 1 NMINE1 8TH NO2Blasting.AD\01H8G001.PLT 42
   PLOTFILE 1 NMINE2 8TH NO2Blasting.AD\01H8G002.PLT 43
   PLOTFILE 1 NMINE3 8TH NO2Blasting.AD\01H8G003.PLT 44
   PLOTFILE 1 NMINE4 8TH NO2Blasting.AD\01H8G004.PLT 45
   PLOTFILE 1 NMINE5 8TH NO2Blasting.AD\01H8G005.PLT 46
   PLOTFILE 1 NMINE6 8TH NO2Blasting.AD\01H8G006.PLT 47
   PLOTFILE 1 NMINE7 8TH NO2Blasting.AD\01H8G007.PLT 48
   PLOTFILE 1 NMINE8 8TH NO2Blasting.AD\01H8G008.PLT 49
   PLOTFILE 1 NMINE9 8TH NO2Blasting.AD\01H8G009.PLT 50
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  PLOTFILE 1 ALL 40 NO2Blasting.AD\01H40GALL.PLT 51
  PLOTFILE 1 NMINE1 40 NO2Blasting.AD\01H40G001.PLT 52
  PLOTFILE 1 NMINE2 40 NO2Blasting.AD\01H40G002.PLT 53
  PLOTFILE 1 NMINE3 40 NO2Blasting.AD\01H40G003.PLT 54
  PLOTFILE 1 NMINE4 40 NO2Blasting.AD\01H40G004.PLT 55
  PLOTFILE 1 NMINE5 40 NO2Blasting.AD\01H40G005.PLT 56
  PLOTFILE 1 NMINE6 40 NO2Blasting.AD\01H40G006.PLT 57
  PLOTFILE 1 NMINE7 40 NO2Blasting.AD\01H40G007.PLT 58
  PLOTFILE 1 NMINE8 40 NO2Blasting.AD\01H40G008.PLT 59
  PLOTFILE 1 NMINE9 40 NO2Blasting.AD\01H40G009.PLT 60
  PLOTFILE ANNUAL ALL NO2Blasting.AD\AN00GALL.PLT 61
  PLOTFILE ANNUAL NMINE1 NO2Blasting.AD\AN00G001.PLT 62
  PLOTFILE ANNUAL NMINE2 NO2Blasting.AD\AN00G002.PLT 63
  PLOTFILE ANNUAL NMINE3 NO2Blasting.AD\AN00G003.PLT 64
  PLOTFILE ANNUAL NMINE4 NO2Blasting.AD\AN00G004.PLT 65
  PLOTFILE ANNUAL NMINE5 NO2Blasting.AD\AN00G005.PLT 66
  PLOTFILE ANNUAL NMINE6 NO2Blasting.AD\AN00G006.PLT 67
  PLOTFILE ANNUAL NMINE7 NO2Blasting.AD\AN00G007.PLT 68
  PLOTFILE ANNUAL NMINE8 NO2Blasting.AD\AN00G008.PLT 69
  PLOTFILE ANNUAL NMINE9 NO2Blasting.AD\AN00G009.PLT 70
  MXDYBYYR ALL NO2Blasting.AD\MXDYBYYR_ALL_NO2.DAT 60
  MXDYBYYR NMINE1 NO2Blasting.AD\MXDYBYYR_NMINE1_NO2.DAT 51
  MXDYBYYR NMINE2 NO2Blasting.AD\MXDYBYYR_NMINE2_NO2.DAT 52
  MXDYBYYR NMINE3 NO2Blasting.AD\MXDYBYYR_NMINE3_NO2.DAT 53
  MXDYBYYR NMINE4 NO2Blasting.AD\MXDYBYYR_NMINE4_NO2.DAT 54
  MXDYBYYR NMINE5 NO2Blasting.AD\MXDYBYYR_NMINE5_NO2.DAT 55
  MXDYBYYR NMINE6 NO2Blasting.AD\MXDYBYYR_NMINE6_NO2.DAT 56
  MXDYBYYR NMINE7 NO2Blasting.AD\MXDYBYYR_NMINE7_NO2.DAT 57
  MXDYBYYR NMINE8 NO2Blasting.AD\MXDYBYYR_NMINE8_NO2.DAT 58
  MXDYBYYR NMINE9 NO2Blasting.AD\MXDYBYYR_NMINE9_NO2.DAT 59
  MAXDAILY ALL NO2Blasting.AD\MAXDAILY_ALL_NO2.DAT 70
  MAXDAILY NMINE1 NO2Blasting.AD\MAXDAILY_NMINE1_NO2.DAT 61
  MAXDAILY NMINE2 NO2Blasting.AD\MAXDAILY_NMINE2_NO2.DAT 62
  MAXDAILY NMINE3 NO2Blasting.AD\MAXDAILY_NMINE3_NO2.DAT 63
  MAXDAILY NMINE4 NO2Blasting.AD\MAXDAILY_NMINE4_NO2.DAT 64
  MAXDAILY NMINE5 NO2Blasting.AD\MAXDAILY_NMINE5_NO2.DAT 65
  MAXDAILY NMINE6 NO2Blasting.AD\MAXDAILY_NMINE6_NO2.DAT 66
  MAXDAILY NMINE7 NO2Blasting.AD\MAXDAILY_NMINE7_NO2.DAT 67
  MAXDAILY NMINE8 NO2Blasting.AD\MAXDAILY_NMINE8_NO2.DAT 68
  MAXDAILY NMINE9 NO2Blasting.AD\MAXDAILY_NMINE9_NO2.DAT 69
  SUMMFILE NO2BLASTING.SUM
OU FINISHED
**
**********************************************
** Project Parameters
**********************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
```

*** MODELOPTs: CONC ELEV FLGPOL ARM2 RURAL ADJ_U*

*** MODEL SETUP OPTIONS SUMMARY ***

** Model Options Selected:
* Model Allows User-Specified Options
* Model Is Setup For Calculation of Average CONCentration Values.
* NO GAS DEPOSITION Data Provided.
* NO PARTICLE DEPOSITION Data Provided.
* Model Uses NO DRY DEPLETION. DDPLETE = F
* Model Uses NO WET DEPLETION. WETDPLT = F
* Stack-tip Downwash.
* Model Accounts for ELEVated Terrain Effects.
* Use Calms Processing Routine.
* Use Missing Data Processing Routine.
* No Exponential Decay.
* Ambient Ratio Method Ver 2 (ARM2) Used for NO2 Conversion
with a Minimum NO2/NOx Ratio of 0.500
and a Maximum NO2/NOx Ratio of 0.900
* Model Uses RURAL Dispersion Only.
* ADJ_U* - Use ADJ_U* option for SBL in AERMET
* CCVR_Sub - Meteorological data includes CCVR substitutions
* TEMP_Sub - Meteorological data includes TEMP substitutions
* Model Accepts FLAGPOLE Receptor . Heights.
* The User Specified a Pollutant Type of: NO2

**Note that special processing requirements apply for the 1-hour NO2 NAAQS - check available guidance.
Model will process user-specified ranks of daily maximum 1-hour values averaged across the number of years modeled.
For annual NO2 NAAQS modeling, the multi-year maximum of PERIOD values can be simulated using the MULTYEAR keyword.
Multi-year PERIOD and 1-hour values should only be done in a single model run using the MULTYEAR option with a single multi-year meteorological data file using STARTEND keyword.

**Model Calculates 1 Short Term Average(s) of: 1-HR
and Calculates ANNUAL Averages

**This Run Includes: 9 Source(s); 10 Source Group(s); and 6883 Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 9 VOLUME source(s)
and: 0 AREA type source(s)
and: 0 LINE source(s)
and: 0 RLINE/RLINEXT source(s)
and: 0 OPENPIT source(s)
and: 0 BUOYANT LINE source(s) with a total of 0 line(s)
and: 0 SWPOINT source(s)

**This Run Includes BACKGRND Values for 0 Source Group(s) for a Single Sector
Non-HOURLY BACKGRND Values are Available Varying by: ANNUAL

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 21112

**Output Options Selected:
Model Outputs Tables of ANNUAL Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)
Model Outputs External File(s) of Maximum Daily 1-hr Values by Day (MAXDAILY Keyword)
Model Outputs External File(s) of Maximum Daily 1-hr Values by Year (MXDYBYYR Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 101.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 43.6 MB of RAM.

**Input Runstream File: aermod.inp
**Output Print File: aermod.out

**Detailed Error/Message File: NO2BLASTING.ERR
**File for Summary of Results: NO2BLASTING.SUM

*** MODELOPTs: CONC ELEV FLGPOL ARM2 RURAL ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

1 1 1

*** MODELOPTs: CONC ELEV FLGPOL ARM2 RURAL ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: ..\FRESNO_18-22.SFC Met Version: 21112
Profile file: ..\FRESNO_18-22.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 93193 Upper air station no.: 23230
Name: FRESNO/AIR_TERMINAL Name: OAKLAND/WSO_AP
Year: 2018 Year: 2018

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
18	01	01	1	01	-6.0	0.108	-9.000	-9.000	-999.	85.	18.7	0.17	1.06	1.00	1.20	347.	10.0	280.9	2.0
18	01	01	1	02	-2.0	0.062	-9.000	-9.000	-999.	38.	10.9	0.02	1.06	1.00	0.91	174.	10.0	279.2	2.0
18	01	01	1	03	-3.4	0.076	-9.000	-9.000	-999.	50.	11.8	0.03	1.06	1.00	1.20	265.	10.0	279.2	2.0
18	01	01	1	04	-5.1	0.095	-9.000	-9.000	-999.	71.	15.2	0.06	1.06	1.00	1.35	316.	10.0	278.1	2.0
18	01	01	1	05	-8.8	0.123	-9.000	-9.000	-999.	104.	19.1	0.04	1.06	1.00	1.87	96.	10.0	277.0	2.0
18	01	01	1	06	-2.6	0.067	-9.000	-9.000	-999.	43.	10.7	0.02	1.06	1.00	1.08	177.	10.0	277.5	2.0
18	01	01	1	07	-3.7	0.078	-9.000	-9.000	-999.	52.	11.5	0.02	1.06	1.00	1.33	181.	10.0	277.5	2.0
18	01	01	1	08	-15.2	0.167	-9.000	-9.000	-999.	164.	30.7	0.06	1.06	0.65	2.32	76.	10.0	276.4	2.0
18	01	01	1	09	-3.5	0.149	-9.000	-9.000	-999.	139.	86.8	0.04	1.06	0.36	2.15	109.	10.0	278.1	2.0
18	01	01	1	10	56.2	0.204	0.651	0.006	177.	221.	-13.6	0.04	1.06	0.26	2.37	134.	10.0	281.4	2.0
18	01	01	1	11	92.0	0.233	1.067	0.016	477.	270.	-12.4	0.04	1.06	0.22	2.62	105.	10.0	283.1	2.0
18	01	01	1	12	116.8	0.202	1.234	0.018	581.	219.	-6.4	0.04	1.06	0.21	2.11	102.	10.0	285.9	2.0
18	01	01	1	13	112.5	0.144	1.280	0.019	673.	132.	-2.4	0.02	1.06	0.21	1.55	183.	10.0	287.5	2.0
18	01	01	1	14	84.0	0.122	1.190	0.019	723.	103.	-2.0	0.02	1.06	0.22	1.28	200.	10.0	289.2	2.0
18	01	01	1	15	57.9	0.161	1.059	0.019	738.	155.	-6.5	0.03	1.06	0.26	1.81	262.	10.0	290.4	2.0
18	01	01	1	16	16.8	0.124	0.702	0.019	742.	105.	-10.3	0.03	1.06	0.35	1.47	259.	10.0	289.9	2.0
18	01	01	1	17	-2.5	0.068	-9.000	-9.000	-999.	44.	11.3	0.02	1.06	0.62	1.14	297.	10.0	287.5	2.0
18	01	01	1	18	-7.4	0.111	-9.000	-9.000	-999.	89.	16.9	0.03	1.06	1.00	1.84	239.	10.0	286.4	2.0
18	01	01	1	19	-4.0	0.085	-9.000	-9.000	-999.	60.	13.8	0.06	1.06	1.00	1.21	83.	10.0	284.9	2.0
18	01	01	1	20	-10.4	0.137	-9.000	-9.000	-999.	122.	22.3	0.06	1.06	1.00	1.93	76.	10.0	283.8	2.0
18	01	01	1	21	-4.7	0.090	-9.000	-9.000	-999.	65.	14.0	0.04	1.06	1.00	1.38	109.	10.0	283.1	2.0
18	01	01	1	22	-4.1	0.084	-9.000	-9.000	-999.	58.	13.0	0.04	1.06	1.00	1.30	127.	10.0	281.4	2.0
18	01	01	1	23	-11.7	0.145	-9.000	-9.000	-999.	133.	23.6	0.06	1.06	1.00	2.04	70.	10.0	280.9	2.0
18	01	01	1	24	-3.4	0.079	-9.000	-9.000	-999.	54.	13.0	0.06	1.06	1.00	1.09	80.	10.0	281.4	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
18	01	01	01	10.0	1	347.	1.20	281.0	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

*** MODELOPTs: CONC ELEV FLGPOL ARM2 RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE	NETWORK GRID-ID
NMINE1	1ST HIGHEST VALUE IS	3.74494 AT (256130.43, 4094254.09, 94.79, 106.35, 1.00) DC	
	2ND HIGHEST VALUE IS	3.74225 AT (256106.16, 4094253.85, 94.32, 106.35, 1.00) DC	
	3RD HIGHEST VALUE IS	3.44448 AT (256081.90, 4094253.60, 94.40, 106.35, 1.00) DC	
	4TH HIGHEST VALUE IS	3.42376 AT (256154.69, 4094254.34, 95.72, 95.72, 1.00) DC	
	5TH HIGHEST VALUE IS	3.20408 AT (256051.66, 4094229.58, 94.90, 94.90, 1.00) DC	
	6TH HIGHEST VALUE IS	3.07560 AT (256045.69, 4094205.80, 95.05, 95.05, 1.00) DC	
	7TH HIGHEST VALUE IS	2.95825 AT (256057.63, 4094253.36, 94.70, 106.35, 1.00) DC	
	8TH HIGHEST VALUE IS	2.90942 AT (256178.96, 4094254.58, 96.81, 98.11, 1.00) DC	
	9TH HIGHEST VALUE IS	2.76822 AT (256105.91, 4094278.85, 93.87, 106.35, 1.00) DC	
	10TH HIGHEST VALUE IS	2.75281 AT (256130.17, 4094279.09, 93.27, 106.35, 1.00) DC	
NMINE2	1ST HIGHEST VALUE IS	2.96564 AT (255968.08, 4093896.69, 93.28, 174.74, 1.00) DC	
	2ND HIGHEST VALUE IS	2.92857 AT (255974.05, 4093920.47, 93.58, 93.58, 1.00) DC	
	3RD HIGHEST VALUE IS	2.65029 AT (255962.10, 4093872.92, 93.07, 174.81, 1.00) DC	
	4TH HIGHEST VALUE IS	2.56450 AT (255980.02, 4093944.25, 94.86, 94.86, 1.00) DC	
	5TH HIGHEST VALUE IS	2.26708 AT (255949.80, 4093926.56, 93.28, 174.81, 1.00) DC	
	6TH HIGHEST VALUE IS	2.19757 AT (255943.83, 4093902.78, 93.01, 174.81, 1.00) DC	
	7TH HIGHEST VALUE IS	2.15497 AT (255985.99, 4093968.03, 94.39, 94.98, 1.00) DC	
	8TH HIGHEST VALUE IS	2.14183 AT (255955.77, 4093950.34, 93.01, 174.74, 1.00) DC	
	9TH HIGHEST VALUE IS	2.09014 AT (255956.13, 4093849.14, 93.89, 174.81, 1.00) DC	
	10TH HIGHEST VALUE IS	1.90833 AT (255937.86, 4093879.01, 93.29, 174.81, 1.00) DC	
NMINE3	1ST HIGHEST VALUE IS	3.07896 AT (255884.49, 4093563.81, 91.85, 174.81, 1.00) DC	
	2ND HIGHEST VALUE IS	2.96354 AT (255878.52, 4093540.03, 91.00, 174.81, 1.00) DC	
	3RD HIGHEST VALUE IS	2.83098 AT (255890.46, 4093587.59, 92.14, 174.81, 1.00) DC	
	4TH HIGHEST VALUE IS	2.62632 AT (255876.50, 4093517.83, 91.04, 174.81, 1.00) DC	
	5TH HIGHEST VALUE IS	2.38568 AT (255860.24, 4093569.90, 89.68, 174.81, 1.00) DC	
	6TH HIGHEST VALUE IS	2.38221 AT (255896.43, 4093611.36, 92.12, 174.81, 1.00) DC	
	7TH HIGHEST VALUE IS	2.33201 AT (255866.21, 4093593.67, 89.70, 174.81, 1.00) DC	
	8TH HIGHEST VALUE IS	2.14845 AT (255874.48, 4093495.64, 91.07, 174.81, 1.00) DC	
	9TH HIGHEST VALUE IS	2.14588 AT (255853.62, 4093542.29, 89.30, 174.81, 1.00) DC	
	10TH HIGHEST VALUE IS	2.05943 AT (255872.18, 4093617.45, 90.36, 174.81, 1.00) DC	
NMINE4	1ST HIGHEST VALUE IS	0.80922 AT (256257.29, 4093309.14, 95.24, 96.03, 1.00) DC	
	2ND HIGHEST VALUE IS	0.75866 AT (256277.30, 4093295.43, 95.61, 97.06, 1.00) DC	
	3RD HIGHEST VALUE IS	0.70640 AT (256232.48, 4093309.95, 94.24, 98.57, 1.00) DC	
	4TH HIGHEST VALUE IS	0.70266 AT (256297.32, 4093281.71, 95.54, 101.18, 1.00) DC	
	5TH HIGHEST VALUE IS	0.68212 AT (256243.16, 4093288.52, 89.05, 102.17, 1.00) DC	
	6TH HIGHEST VALUE IS	0.65407 AT (256263.17, 4093274.80, 88.07, 102.59, 1.00) DC	
	7TH HIGHEST VALUE IS	0.64383 AT (256317.33, 4093268.00, 95.42, 102.58, 1.00) DC	

*** MODELOPTs: CONC ELEV FLGPOL ARM2 RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID
NMINE5	1ST HIGHEST VALUE IS	1.20254	AT (256407.08, 4093190.25, 97.26, 97.26, 1.00) DC
	2ND HIGHEST VALUE IS	1.19030	AT (256397.38, 4093213.15, 97.65, 102.59, 1.00) DC
	3RD HIGHEST VALUE IS	1.16434	AT (256416.78, 4093167.36, 97.86, 99.71, 1.00) DC
	4TH HIGHEST VALUE IS	1.10669	AT (256426.48, 4093144.46, 98.22, 102.44, 1.00) DC
	5TH HIGHEST VALUE IS	1.05817	AT (256436.18, 4093121.56, 97.74, 103.22, 1.00) DC
	6TH HIGHEST VALUE IS	0.98772	AT (256377.37, 4093226.86, 98.01, 102.59, 1.00) DC
	7TH HIGHEST VALUE IS	0.98201	AT (256445.88, 4093098.67, 97.44, 103.22, 1.00) DC
	8TH HIGHEST VALUE IS	0.94296	AT (256383.25, 4093192.53, 94.48, 102.59, 1.00) DC
	9TH HIGHEST VALUE IS	0.91039	AT (256393.76, 4093157.60, 91.47, 103.22, 1.00) DC
	10TH HIGHEST VALUE IS	0.90067	AT (256455.58, 4093075.77, 97.23, 103.22, 1.00) DC
NMINE6	1ST HIGHEST VALUE IS	2.40782	AT (256994.86, 4092703.42, 97.89, 97.89, 1.00) DC
	2ND HIGHEST VALUE IS	2.32300	AT (257011.91, 4092721.21, 97.82, 97.82, 1.00) DC
	3RD HIGHEST VALUE IS	2.18331	AT (256977.82, 4092685.63, 98.08, 98.08, 1.00) DC
	4TH HIGHEST VALUE IS	2.02318	AT (257028.96, 4092738.99, 97.54, 97.54, 1.00) DC
	5TH HIGHEST VALUE IS	1.87525	AT (257012.91, 4092686.12, 98.02, 101.65, 1.00) DC
	6TH HIGHEST VALUE IS	1.84995	AT (257029.96, 4092703.91, 97.89, 102.21, 1.00) DC
	7TH HIGHEST VALUE IS	1.75147	AT (256960.77, 4092667.84, 97.75, 98.61, 1.00) DC
	8TH HIGHEST VALUE IS	1.70510	AT (256995.87, 4092668.33, 98.21, 98.21, 1.00) DC
	9TH HIGHEST VALUE IS	1.68994	AT (256936.46, 4092669.17, 97.16, 97.16, 1.00) DC
	10TH HIGHEST VALUE IS	1.66414	AT (257047.01, 4092721.70, 97.81, 102.55, 1.00) DC
NMINE7	1ST HIGHEST VALUE IS	2.27328	AT (257182.17, 4093795.40, 99.53, 100.71, 1.00) DC
	2ND HIGHEST VALUE IS	2.24050	AT (257187.81, 4093771.42, 99.19, 100.35, 1.00) DC
	3RD HIGHEST VALUE IS	2.15723	AT (257176.54, 4093819.37, 100.10, 100.10, 1.00) DC
	4TH HIGHEST VALUE IS	2.14816	AT (256962.00, 4094012.99, 95.57, 96.60, 1.00) DC
	5TH HIGHEST VALUE IS	2.13902	AT (256937.79, 4094013.25, 96.09, 97.39, 1.00) DC
	6TH HIGHEST VALUE IS	2.06123	AT (256986.20, 4094012.73, 95.01, 95.01, 1.00) DC
	7TH HIGHEST VALUE IS	2.05376	AT (256913.58, 4094013.50, 96.07, 97.44, 1.00) DC
	8TH HIGHEST VALUE IS	2.04429	AT (257193.45, 4093747.44, 99.41, 100.26, 1.00) DC
	9TH HIGHEST VALUE IS	1.97627	AT (257170.90, 4093843.35, 100.25, 100.64, 1.00) DC
	10TH HIGHEST VALUE IS	1.88792	AT (256889.38, 4094013.76, 96.15, 97.45, 1.00) DC
NMINE8	1ST HIGHEST VALUE IS	4.02446	AT (257247.38, 4093291.21, 98.59, 109.71, 1.00) DC
	2ND HIGHEST VALUE IS	3.77812	AT (257248.40, 4093315.92, 98.40, 109.71, 1.00) DC

3RD HIGHEST VALUE IS 3.76814 AT (257246.36, 4093266.49, 98.71, 109.71, 1.00) DC
4TH HIGHEST VALUE IS 3.20008 AT (257249.41, 4093340.63, 98.26, 109.71, 1.00) DC
5TH HIGHEST VALUE IS 3.12640 AT (257245.35, 4093241.78, 98.90, 109.71, 1.00) DC
6TH HIGHEST VALUE IS 2.86994 AT (257272.36, 4093290.18, 99.27, 109.71, 1.00) DC
7TH HIGHEST VALUE IS 2.85128 AT (257271.34, 4093265.47, 99.31, 109.71, 1.00) DC
8TH HIGHEST VALUE IS 2.62329 AT (257273.37, 4093314.90, 99.22, 118.98, 1.00) DC
9TH HIGHEST VALUE IS 2.59902 AT (257250.42, 4093365.35, 98.10, 99.70, 1.00) DC
10TH HIGHEST VALUE IS 2.55834 AT (257270.33, 4093240.75, 99.35, 109.71, 1.00) DC

*** MODELOPTs: CONC ELEV FLGPOL ARM2 RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE	NETWORK GRID-ID
NMINE9	1ST HIGHEST VALUE IS	3.19661 AT (257197.94, 4092998.78, 98.03, 98.75, 1.00) DC	
	2ND HIGHEST VALUE IS	3.14253 AT (257190.90, 4092977.28, 97.63, 98.43, 1.00) DC	
	3RD HIGHEST VALUE IS	2.91636 AT (257204.98, 4093020.27, 98.40, 98.87, 1.00) DC	
	4TH HIGHEST VALUE IS	2.75992 AT (257183.86, 4092955.79, 97.46, 103.23, 1.00) DC	
	5TH HIGHEST VALUE IS	2.45949 AT (257212.03, 4093041.77, 98.55, 98.73, 1.00) DC	
	6TH HIGHEST VALUE IS	2.40210 AT (257214.66, 4092969.50, 98.74, 103.72, 1.00) DC	
	7TH HIGHEST VALUE IS	2.39557 AT (257221.70, 4092991.00, 98.78, 103.07, 1.00) DC	
	8TH HIGHEST VALUE IS	2.25466 AT (257170.89, 4092935.36, 97.57, 99.41, 1.00) DC	
	9TH HIGHEST VALUE IS	2.20458 AT (257207.62, 4092948.01, 98.65, 103.98, 1.00) DC	
	10TH HIGHEST VALUE IS	2.19259 AT (257228.74, 4093012.49, 98.84, 98.84, 1.00) DC	
ALL	1ST HIGHEST VALUE IS	4.75830 AT (257247.38, 4093291.21, 98.59, 109.71, 1.00) DC	
	2ND HIGHEST VALUE IS	4.55930 AT (257246.36, 4093266.49, 98.71, 109.71, 1.00) DC	
	3RD HIGHEST VALUE IS	4.46797 AT (257248.40, 4093315.92, 98.40, 109.71, 1.00) DC	
	4TH HIGHEST VALUE IS	4.32047 AT (256106.16, 4094253.85, 94.32, 106.35, 1.00) DC	
	5TH HIGHEST VALUE IS	4.30389 AT (256130.43, 4094254.09, 94.79, 106.35, 1.00) DC	
	6TH HIGHEST VALUE IS	4.03946 AT (256081.90, 4094253.60, 94.40, 106.35, 1.00) DC	
	7TH HIGHEST VALUE IS	3.98724 AT (257245.35, 4093241.78, 98.90, 109.71, 1.00) DC	
	8TH HIGHEST VALUE IS	3.96558 AT (256154.69, 4094254.34, 95.72, 95.72, 1.00) DC	
	9TH HIGHEST VALUE IS	3.90585 AT (257197.94, 4092998.78, 98.03, 98.75, 1.00) DC	
	10TH HIGHEST VALUE IS	3.87773 AT (255968.08, 4093896.69, 93.28, 174.74, 1.00) DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: CONC ELEV FLGPOL ARM2 RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM 1ST-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE	NETWORK GRID-ID
NMINE1	1ST HIGHEST VALUE IS	216.20835 AT (256154.69, 4094254.34, 95.72, 95.72, 1.00)	DC
	2ND HIGHEST VALUE IS	205.77031 AT (256130.43, 4094254.09, 94.79, 106.35, 1.00)	DC
	3RD HIGHEST VALUE IS	195.32617 AT (256045.69, 4094205.80, 95.05, 95.05, 1.00)	DC
	4TH HIGHEST VALUE IS	195.15706 AT (256227.49, 4094255.07, 98.11, 98.11, 1.00)	DC
	5TH HIGHEST VALUE IS	195.14228 AT (256178.96, 4094254.58, 96.81, 98.11, 1.00)	DC
	6TH HIGHEST VALUE IS	185.80511 AT (256106.16, 4094253.85, 94.32, 106.35, 1.00)	DC
	7TH HIGHEST VALUE IS	177.94592 AT (256251.75, 4094255.32, 98.68, 98.68, 1.00)	DC
	8TH HIGHEST VALUE IS	174.06517 AT (256051.66, 4094229.58, 94.90, 94.90, 1.00)	DC
	9TH HIGHEST VALUE IS	170.78640 AT (256039.72, 4094182.03, 95.10, 95.10, 1.00)	DC
	10TH HIGHEST VALUE IS	170.45937 AT (256081.90, 4094253.60, 94.40, 106.35, 1.00)	DC
NMINE2	1ST HIGHEST VALUE IS	186.07981 AT (255968.08, 4093896.69, 93.28, 174.74, 1.00)	DC
	2ND HIGHEST VALUE IS	167.90965 AT (255962.10, 4093872.92, 93.07, 174.81, 1.00)	DC
	3RD HIGHEST VALUE IS	157.07113 AT (255950.16, 4093825.36, 93.29, 174.81, 1.00)	DC
	4TH HIGHEST VALUE IS	156.37381 AT (255974.05, 4093920.47, 93.58, 93.58, 1.00)	DC
	5TH HIGHEST VALUE IS	150.45762 AT (255956.13, 4093849.14, 93.89, 174.81, 1.00)	DC
	6TH HIGHEST VALUE IS	148.40212 AT (255943.83, 4093902.78, 93.01, 174.81, 1.00)	DC
	7TH HIGHEST VALUE IS	146.08322 AT (255949.80, 4093926.56, 93.28, 174.81, 1.00)	DC
	8TH HIGHEST VALUE IS	143.19137 AT (255944.19, 4093801.58, 93.33, 174.81, 1.00)	DC
	9TH HIGHEST VALUE IS	139.16448 AT (255980.02, 4093944.25, 94.86, 94.86, 1.00)	DC
	10TH HIGHEST VALUE IS	138.97102 AT (255937.86, 4093879.01, 93.29, 174.81, 1.00)	DC
NMINE3	1ST HIGHEST VALUE IS	200.46908 AT (255878.52, 4093540.03, 91.00, 174.81, 1.00)	DC
	2ND HIGHEST VALUE IS	187.16754 AT (255872.47, 4093473.44, 91.22, 174.81, 1.00)	DC
	3RD HIGHEST VALUE IS	182.25963 AT (255876.50, 4093517.83, 91.04, 174.81, 1.00)	DC
	4TH HIGHEST VALUE IS	177.08299 AT (255884.49, 4093563.81, 91.85, 174.81, 1.00)	DC
	5TH HIGHEST VALUE IS	171.54207 AT (255874.48, 4093495.64, 91.07, 174.81, 1.00)	DC
	6TH HIGHEST VALUE IS	166.93313 AT (255868.43, 4093429.05, 91.03, 174.81, 1.00)	DC
	7TH HIGHEST VALUE IS	156.18467 AT (255860.24, 4093569.90, 89.68, 174.81, 1.00)	DC
	8TH HIGHEST VALUE IS	153.57827 AT (255890.46, 4093587.59, 92.14, 174.81, 1.00)	DC
	9TH HIGHEST VALUE IS	149.53784 AT (255870.45, 4093451.25, 91.26, 174.81, 1.00)	DC
	10TH HIGHEST VALUE IS	147.12485 AT (255896.43, 4093611.36, 92.12, 174.81, 1.00)	DC
NMINE4	1ST HIGHEST VALUE IS	129.34167 AT (256277.30, 4093295.43, 95.61, 97.06, 1.00)	DC
	2ND HIGHEST VALUE IS	127.60933 AT (256232.48, 4093309.95, 94.24, 98.57, 1.00)	DC
	3RD HIGHEST VALUE IS	126.94693 AT (256257.29, 4093309.14, 95.24, 96.03, 1.00)	DC
	4TH HIGHEST VALUE IS	126.89723 AT (256297.32, 4093281.71, 95.54, 101.18, 1.00)	DC
	5TH HIGHEST VALUE IS	115.95707 AT (256207.67, 4093310.76, 94.27, 98.57, 1.00)	DC
	6TH HIGHEST VALUE IS	114.98474 AT (256243.16, 4093288.52, 89.05, 102.17, 1.00)	DC
	7TH HIGHEST VALUE IS	110.60308 AT (256317.33, 4093268.00, 95.42, 102.58, 1.00)	DC
	8TH HIGHEST VALUE IS	110.29306 AT (256283.18, 4093261.09, 87.79, 102.59, 1.00)	DC

*** MODELOPTs: CONC ELEV FLGPOL ARM2 RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM 1ST-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	NETWORK OF TYPE GRID-ID
NMINE5	1ST HIGHEST VALUE IS	147.11445 AT (256455.58, 4093075.77, 97.23, 103.22, 1.00)	DC
	2ND HIGHEST VALUE IS	144.82467 AT (256445.88, 4093098.67, 97.44, 103.22, 1.00)	DC
	3RD HIGHEST VALUE IS	137.46429 AT (256436.18, 4093121.56, 97.74, 103.22, 1.00)	DC
	4TH HIGHEST VALUE IS	137.39698 AT (256426.48, 4093144.46, 98.22, 102.44, 1.00)	DC
	5TH HIGHEST VALUE IS	136.37448 AT (256422.86, 4093088.91, 90.61, 103.22, 1.00)	DC
	6TH HIGHEST VALUE IS	130.49676 AT (256474.98, 4093029.97, 96.66, 103.22, 1.00)	DC
	7TH HIGHEST VALUE IS	130.31912 AT (256465.28, 4093052.87, 96.91, 103.22, 1.00)	DC
	8TH HIGHEST VALUE IS	128.46388 AT (256432.56, 4093066.02, 90.75, 103.22, 1.00)	DC
	9TH HIGHEST VALUE IS	125.89769 AT (256407.08, 4093190.25, 97.26, 97.26, 1.00)	DC
	10TH HIGHEST VALUE IS	125.57909 AT (256416.78, 4093167.36, 97.86, 99.71, 1.00)	DC
NMINE6	1ST HIGHEST VALUE IS	148.66085 AT (256839.24, 4092674.51, 97.38, 97.38, 1.00)	DC
	2ND HIGHEST VALUE IS	141.43878 AT (256814.93, 4092675.85, 97.64, 98.46, 1.00)	DC
	3RD HIGHEST VALUE IS	129.32872 AT (256863.54, 4092673.18, 96.63, 96.63, 1.00)	DC
	4TH HIGHEST VALUE IS	127.14644 AT (257046.01, 4092756.78, 97.18, 97.18, 1.00)	DC
	5TH HIGHEST VALUE IS	127.12719 AT (257028.96, 4092738.99, 97.54, 97.54, 1.00)	DC
	6TH HIGHEST VALUE IS	125.72451 AT (257011.91, 4092721.21, 97.82, 97.82, 1.00)	DC
	7TH HIGHEST VALUE IS	124.78653 AT (256837.87, 4092649.55, 96.46, 96.46, 1.00)	DC
	8TH HIGHEST VALUE IS	121.54246 AT (256887.85, 4092671.84, 96.58, 96.58, 1.00)	DC
	9TH HIGHEST VALUE IS	121.53975 AT (256813.56, 4092650.88, 96.40, 96.40, 1.00)	DC
	10TH HIGHEST VALUE IS	120.24338 AT (256766.32, 4092678.51, 97.68, 98.55, 1.00)	DC
NMINE7	1ST HIGHEST VALUE IS	152.13201 AT (257165.26, 4093867.33, 100.21, 100.21, 1.00)	DC
	2ND HIGHEST VALUE IS	146.69534 AT (257148.35, 4093939.26, 99.90, 99.90, 1.00)	DC
	3RD HIGHEST VALUE IS	146.43092 AT (257034.62, 4094012.22, 96.13, 96.13, 1.00)	DC
	4TH HIGHEST VALUE IS	145.78829 AT (256937.79, 4094013.25, 96.09, 97.39, 1.00)	DC
	5TH HIGHEST VALUE IS	144.83913 AT (257182.17, 4093795.40, 99.53, 100.71, 1.00)	DC
	6TH HIGHEST VALUE IS	144.70581 AT (256986.20, 4094012.73, 95.01, 95.01, 1.00)	DC
	7TH HIGHEST VALUE IS	144.39884 AT (257159.62, 4093891.31, 100.12, 100.12, 1.00)	DC
	8TH HIGHEST VALUE IS	143.92971 AT (256962.00, 4094012.99, 95.57, 96.60, 1.00)	DC
	9TH HIGHEST VALUE IS	143.88639 AT (257170.90, 4093843.35, 100.25, 100.64, 1.00)	DC
	10TH HIGHEST VALUE IS	143.65927 AT (257083.03, 4094011.70, 97.83, 127.46, 1.00)	DC
NMINE8	1ST HIGHEST VALUE IS	192.14129 AT (257248.40, 4093315.92, 98.40, 109.71, 1.00)	DC
	2ND HIGHEST VALUE IS	191.65822 AT (257249.41, 4093340.63, 98.26, 109.71, 1.00)	DC
	3RD HIGHEST VALUE IS	177.03630 AT (257250.42, 4093365.35, 98.10, 99.70, 1.00)	DC

4TH HIGHEST VALUE IS 174.42063 AT (257247.38, 4093291.21, 98.59, 109.71, 1.00) DC
5TH HIGHEST VALUE IS 160.91457 AT (257251.44, 4093390.06, 97.91, 97.91, 1.00) DC
6TH HIGHEST VALUE IS 153.43974 AT (257273.37, 4093314.90, 99.22, 118.98, 1.00) DC
7TH HIGHEST VALUE IS 147.49245 AT (257272.36, 4093290.18, 99.27, 109.71, 1.00) DC
8TH HIGHEST VALUE IS 147.07287 AT (257276.42, 4093389.04, 99.06, 118.98, 1.00) DC
9TH HIGHEST VALUE IS 145.10070 AT (257253.47, 4093439.49, 97.80, 97.80, 1.00) DC
10TH HIGHEST VALUE IS 144.37773 AT (257274.39, 4093339.61, 99.17, 118.98, 1.00) DC

*** MODELOPTs: CONC ELEV FLGPOL ARM2 RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM 1ST-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	NETWORK RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID
NMINE9	1ST HIGHEST VALUE IS	147.86165 AT (257204.98, 4093020.27, 98.40, 98.87, 1.00) DC
	2ND HIGHEST VALUE IS	145.00425 AT (257212.03, 4093041.77, 98.55, 98.73, 1.00) DC
	3RD HIGHEST VALUE IS	143.79314 AT (257197.94, 4092998.78, 98.03, 98.75, 1.00) DC
	4TH HIGHEST VALUE IS	135.15867 AT (257219.07, 4093063.26, 98.54, 98.54, 1.00) DC
	5TH HIGHEST VALUE IS	132.59579 AT (257233.15, 4093106.25, 98.63, 98.63, 1.00) DC
	6TH HIGHEST VALUE IS	130.78912 AT (257226.11, 4093084.76, 98.59, 99.42, 1.00) DC
	7TH HIGHEST VALUE IS	128.95198 AT (257221.70, 4092991.00, 98.78, 103.07, 1.00) DC
	8TH HIGHEST VALUE IS	128.47206 AT (257228.74, 4093012.49, 98.84, 98.84, 1.00) DC
	9TH HIGHEST VALUE IS	128.13172 AT (257235.78, 4093033.98, 98.95, 98.95, 1.00) DC
	10TH HIGHEST VALUE IS	127.52434 AT (257190.90, 4092977.28, 97.63, 98.43, 1.00) DC
ALL	1ST HIGHEST VALUE IS	233.66566 AT (255878.52, 4093540.03, 91.00, 174.81, 1.00) DC
	2ND HIGHEST VALUE IS	229.96364 AT (256154.69, 4094254.34, 95.72, 95.72, 1.00) DC
	3RD HIGHEST VALUE IS	225.85435 AT (256130.43, 4094254.09, 94.79, 106.35, 1.00) DC
	4TH HIGHEST VALUE IS	221.84401 AT (255872.47, 4093473.44, 91.22, 174.81, 1.00) DC
	5TH HIGHEST VALUE IS	216.93650 AT (255876.50, 4093517.83, 91.04, 174.81, 1.00) DC
	6TH HIGHEST VALUE IS	216.76585 AT (256227.49, 4094255.07, 98.11, 98.11, 1.00) DC
	7TH HIGHEST VALUE IS	214.48632 AT (256178.96, 4094254.58, 96.81, 98.11, 1.00) DC
	8TH HIGHEST VALUE IS	207.72212 AT (257249.41, 4093340.63, 98.26, 109.71, 1.00) DC
	9TH HIGHEST VALUE IS	207.48056 AT (256045.69, 4094205.80, 95.05, 95.05, 1.00) DC
	10TH HIGHEST VALUE IS	207.35306 AT (255874.48, 4093495.64, 91.07, 174.81, 1.00) DC

*** MODELOPTs: CONC ELEV FLGPOL ARM2 RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM 8TH-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

NETWORK

GROUP ID AVERAGE CONC RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID

- -

NMINE1 1ST HIGHEST VALUE IS 133.93484 AT (256045.69, 4094205.80, 95.05, 95.05, 1.00) DC
2ND HIGHEST VALUE IS 131.92000 AT (256039.72, 4094182.03, 95.10, 95.10, 1.00) DC
3RD HIGHEST VALUE IS 131.37860 AT (256051.66, 4094229.58, 94.90, 94.90, 1.00) DC
4TH HIGHEST VALUE IS 131.12030 AT (256106.16, 4094253.85, 94.32, 106.35, 1.00) DC
5TH HIGHEST VALUE IS 130.96236 AT (256033.75, 4094158.25, 95.13, 95.13, 1.00) DC
6TH HIGHEST VALUE IS 129.85010 AT (256130.43, 4094254.09, 94.79, 106.35, 1.00) DC
7TH HIGHEST VALUE IS 128.45400 AT (256154.69, 4094254.34, 95.72, 95.72, 1.00) DC
8TH HIGHEST VALUE IS 128.25167 AT (256081.90, 4094253.60, 94.40, 106.35, 1.00) DC
9TH HIGHEST VALUE IS 124.91504 AT (256178.96, 4094254.58, 96.81, 98.11, 1.00) DC
10TH HIGHEST VALUE IS 123.95580 AT (256021.44, 4094211.89, 94.65, 94.65, 1.00) DC

NMINE2 1ST HIGHEST VALUE IS 130.72879 AT (255962.10, 4093872.92, 93.07, 174.81, 1.00) DC
2ND HIGHEST VALUE IS 129.92641 AT (255968.08, 4093896.69, 93.28, 174.74, 1.00) DC
3RD HIGHEST VALUE IS 128.84895 AT (255956.13, 4093849.14, 93.89, 174.81, 1.00) DC
4TH HIGHEST VALUE IS 124.53985 AT (255950.16, 4093825.36, 93.29, 174.81, 1.00) DC
5TH HIGHEST VALUE IS 121.66045 AT (255974.05, 4093920.47, 93.58, 93.58, 1.00) DC
6TH HIGHEST VALUE IS 117.85976 AT (255943.83, 4093902.78, 93.01, 174.81, 1.00) DC
7TH HIGHEST VALUE IS 117.84089 AT (255937.86, 4093879.01, 93.29, 174.81, 1.00) DC
8TH HIGHEST VALUE IS 115.14790 AT (255931.89, 4093855.23, 92.26, 174.81, 1.00) DC
9TH HIGHEST VALUE IS 113.12226 AT (255949.80, 4093926.56, 93.28, 174.81, 1.00) DC
10TH HIGHEST VALUE IS 111.86467 AT (255944.19, 4093801.58, 93.33, 174.81, 1.00) DC

NMINE3 1ST HIGHEST VALUE IS 129.23202 AT (255878.52, 4093540.03, 91.00, 174.81, 1.00) DC
2ND HIGHEST VALUE IS 128.59210 AT (255884.49, 4093563.81, 91.85, 174.81, 1.00) DC
3RD HIGHEST VALUE IS 126.90203 AT (255876.50, 4093517.83, 91.04, 174.81, 1.00) DC
4TH HIGHEST VALUE IS 124.37061 AT (255874.48, 4093495.64, 91.07, 174.81, 1.00) DC
5TH HIGHEST VALUE IS 124.24117 AT (255890.46, 4093587.59, 92.14, 174.81, 1.00) DC
6TH HIGHEST VALUE IS 119.13380 AT (255872.47, 4093473.44, 91.22, 174.81, 1.00) DC
7TH HIGHEST VALUE IS 118.96036 AT (255860.24, 4093569.90, 89.68, 174.81, 1.00) DC
8TH HIGHEST VALUE IS 118.47401 AT (255853.62, 4093542.29, 89.30, 174.81, 1.00) DC
9TH HIGHEST VALUE IS 116.53140 AT (255896.43, 4093611.36, 92.12, 174.81, 1.00) DC
10TH HIGHEST VALUE IS 113.56780 AT (255849.59, 4093497.90, 89.64, 174.81, 1.00) DC

NMINE4 1ST HIGHEST VALUE IS 55.96222 AT (256257.29, 4093309.14, 95.24, 96.03, 1.00) DC
2ND HIGHEST VALUE IS 55.19861 AT (256297.32, 4093281.71, 95.54, 101.18, 1.00) DC
3RD HIGHEST VALUE IS 54.22112 AT (256277.30, 4093295.43, 95.61, 97.06, 1.00) DC
4TH HIGHEST VALUE IS 52.96171 AT (256317.33, 4093268.00, 95.42, 102.58, 1.00) DC
5TH HIGHEST VALUE IS 50.55875 AT (256337.34, 4093254.29, 96.19, 102.59, 1.00) DC
6TH HIGHEST VALUE IS 44.15914 AT (256243.16, 4093288.52, 89.05, 102.17, 1.00) DC
7TH HIGHEST VALUE IS 43.34247 AT (256357.35, 4093240.58, 96.99, 102.59, 1.00) DC
8TH HIGHEST VALUE IS 42.49863 AT (256263.17, 4093274.80, 88.07, 102.59, 1.00) DC
9TH HIGHEST VALUE IS 41.93403 AT (256303.20, 4093247.38, 87.80, 102.59, 1.00) DC
10TH HIGHEST VALUE IS 41.65094 AT (256232.48, 4093309.95, 94.24, 98.57, 1.00) DC

*** MODELOPTs: CONC ELEV FLGPOL ARM2 RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM 8TH-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	NETWORK OF TYPE GRID-ID
NMINE5	1ST HIGHEST VALUE IS	105.32187 AT (256416.78, 4093167.36, 97.86, 99.71, 1.00)	DC
	2ND HIGHEST VALUE IS	105.22681 AT (256426.48, 4093144.46, 98.22, 102.44, 1.00)	DC
	3RD HIGHEST VALUE IS	101.00022 AT (256436.18, 4093121.56, 97.74, 103.22, 1.00)	DC
	4TH HIGHEST VALUE IS	99.21484 AT (256407.08, 4093190.25, 97.26, 97.26, 1.00)	DC
	5TH HIGHEST VALUE IS	94.31784 AT (256393.76, 4093157.60, 91.47, 103.22, 1.00)	DC
	6TH HIGHEST VALUE IS	93.24140 AT (256397.38, 4093213.15, 97.65, 102.59, 1.00)	DC
	7TH HIGHEST VALUE IS	92.02128 AT (256445.88, 4093098.67, 97.44, 103.22, 1.00)	DC
	8TH HIGHEST VALUE IS	91.94369 AT (256403.46, 4093134.71, 91.15, 103.22, 1.00)	DC
	9TH HIGHEST VALUE IS	88.16890 AT (256413.16, 4093111.81, 90.50, 103.22, 1.00)	DC
	10TH HIGHEST VALUE IS	86.76912 AT (256383.25, 4093192.53, 94.48, 102.59, 1.00)	DC
NMINE6	1ST HIGHEST VALUE IS	92.83711 AT (257011.91, 4092721.21, 97.82, 97.82, 1.00)	DC
	2ND HIGHEST VALUE IS	92.74853 AT (256994.86, 4092703.42, 97.89, 97.89, 1.00)	DC
	3RD HIGHEST VALUE IS	90.02051 AT (256863.54, 4092673.18, 96.63, 96.63, 1.00)	DC
	4TH HIGHEST VALUE IS	88.91918 AT (256977.82, 4092685.63, 98.08, 98.08, 1.00)	DC
	5TH HIGHEST VALUE IS	86.05289 AT (257028.96, 4092738.99, 97.54, 97.54, 1.00)	DC
	6TH HIGHEST VALUE IS	85.92771 AT (256887.85, 4092671.84, 96.58, 96.58, 1.00)	DC
	7TH HIGHEST VALUE IS	83.10166 AT (256839.24, 4092674.51, 97.38, 97.38, 1.00)	DC
	8TH HIGHEST VALUE IS	83.02106 AT (256912.16, 4092670.51, 97.23, 97.23, 1.00)	DC
	9TH HIGHEST VALUE IS	82.25345 AT (256960.77, 4092667.84, 97.75, 98.61, 1.00)	DC
	10TH HIGHEST VALUE IS	81.87186 AT (256936.46, 4092669.17, 97.16, 97.16, 1.00)	DC
NMINE7	1ST HIGHEST VALUE IS	110.42559 AT (256913.58, 4094013.50, 96.07, 97.44, 1.00)	DC
	2ND HIGHEST VALUE IS	110.27499 AT (256986.20, 4094012.73, 95.01, 95.01, 1.00)	DC
	3RD HIGHEST VALUE IS	108.51811 AT (256937.79, 4094013.25, 96.09, 97.39, 1.00)	DC
	4TH HIGHEST VALUE IS	107.84280 AT (256962.00, 4094012.99, 95.57, 96.60, 1.00)	DC
	5TH HIGHEST VALUE IS	107.30030 AT (257010.41, 4094012.48, 95.29, 95.29, 1.00)	DC
	6TH HIGHEST VALUE IS	104.71051 AT (257165.26, 4093867.33, 100.21, 100.21, 1.00)	DC
	7TH HIGHEST VALUE IS	103.12422 AT (256889.38, 4094013.76, 96.15, 97.45, 1.00)	DC
	8TH HIGHEST VALUE IS	102.30345 AT (257170.90, 4093843.35, 100.25, 100.64, 1.00)	DC
	9TH HIGHEST VALUE IS	101.52155 AT (257182.17, 4093795.40, 99.53, 100.71, 1.00)	DC
	10TH HIGHEST VALUE IS	101.03672 AT (257176.54, 4093819.37, 100.10, 100.10, 1.00)	DC
NMINE8	1ST HIGHEST VALUE IS	126.39958 AT (257248.40, 4093315.92, 98.40, 109.71, 1.00)	DC
	2ND HIGHEST VALUE IS	125.80648 AT (257247.38, 4093291.21, 98.59, 109.71, 1.00)	DC
	3RD HIGHEST VALUE IS	123.89360 AT (257249.41, 4093340.63, 98.26, 109.71, 1.00)	DC
	4TH HIGHEST VALUE IS	122.71444 AT (257250.42, 4093365.35, 98.10, 99.70, 1.00)	DC
	5TH HIGHEST VALUE IS	121.53550 AT (257246.36, 4093266.49, 98.71, 109.71, 1.00)	DC
	6TH HIGHEST VALUE IS	115.38293 AT (257251.44, 4093390.06, 97.91, 97.91, 1.00)	DC
	7TH HIGHEST VALUE IS	112.96280 AT (257272.36, 4093290.18, 99.27, 109.71, 1.00)	DC
	8TH HIGHEST VALUE IS	111.05008 AT (257273.37, 4093314.90, 99.22, 118.98, 1.00)	DC
	9TH HIGHEST VALUE IS	109.16896 AT (257245.35, 4093241.78, 98.90, 109.71, 1.00)	DC
	10TH HIGHEST VALUE IS	107.00581 AT (257271.34, 4093265.47, 99.31, 109.71, 1.00)	DC

*** MODELOPTs: CONC ELEV FLGPOL ARM2 RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM 8TH-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	NETWORK RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID
NMINE9	1ST HIGHEST VALUE IS	111.35888 AT (257204.98, 4093020.27, 98.40, 98.87, 1.00) DC
	2ND HIGHEST VALUE IS	111.08748 AT (257197.94, 4092998.78, 98.03, 98.75, 1.00) DC
	3RD HIGHEST VALUE IS	108.64761 AT (257190.90, 4092977.28, 97.63, 98.43, 1.00) DC
	4TH HIGHEST VALUE IS	105.68315 AT (257212.03, 4093041.77, 98.55, 98.73, 1.00) DC
	5TH HIGHEST VALUE IS	100.13469 AT (257183.86, 4092955.79, 97.46, 103.23, 1.00) DC
	6TH HIGHEST VALUE IS	98.44812 AT (257219.07, 4093063.26, 98.54, 98.54, 1.00) DC
	7TH HIGHEST VALUE IS	96.94010 AT (257228.74, 4093012.49, 98.84, 98.84, 1.00) DC
	8TH HIGHEST VALUE IS	95.81372 AT (257221.70, 4092991.00, 98.78, 103.07, 1.00) DC
	9TH HIGHEST VALUE IS	94.74571 AT (257214.66, 4092969.50, 98.74, 103.72, 1.00) DC
	10TH HIGHEST VALUE IS	92.73770 AT (257170.89, 4092935.36, 97.57, 99.41, 1.00) DC
ALL	1ST HIGHEST VALUE IS	141.73402 AT (256154.69, 4094254.34, 95.72, 95.72, 1.00) DC
	2ND HIGHEST VALUE IS	139.94563 AT (255874.48, 4093495.64, 91.07, 174.81, 1.00) DC
	3RD HIGHEST VALUE IS	139.56268 AT (255876.50, 4093517.83, 91.04, 174.81, 1.00) DC
	4TH HIGHEST VALUE IS	139.30001 AT (256178.96, 4094254.58, 96.81, 98.11, 1.00) DC
	5TH HIGHEST VALUE IS	139.29477 AT (255878.52, 4093540.03, 91.00, 174.81, 1.00) DC
	6TH HIGHEST VALUE IS	138.18049 AT (256106.16, 4094253.85, 94.32, 106.35, 1.00) DC
	7TH HIGHEST VALUE IS	138.10643 AT (256130.43, 4094254.09, 94.79, 106.35, 1.00) DC
	8TH HIGHEST VALUE IS	137.98400 AT (256045.69, 4094205.80, 95.05, 95.05, 1.00) DC
	9TH HIGHEST VALUE IS	137.44479 AT (255968.08, 4093896.69, 93.28, 174.74, 1.00) DC
	10TH HIGHEST VALUE IS	137.18811 AT (255872.47, 4093473.44, 91.22, 174.81, 1.00) DC

*** MODELOPTs: CONC ELEV FLGPOL ARM2 RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM 40TH-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	NETWORK RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID
NMINE1	1ST HIGHEST VALUE IS	106.73842 AT (256045.69, 4094205.80, 95.05, 95.05, 1.00) DC

2ND HIGHEST VALUE IS 104.70860 AT (256051.66, 4094229.58, 94.90, 94.90, 1.00) DC
3RD HIGHEST VALUE IS 104.44149 AT (256130.43, 4094254.09, 94.79, 106.35, 1.00) DC
4TH HIGHEST VALUE IS 103.60049 AT (256106.16, 4094253.85, 94.32, 106.35, 1.00) DC
5TH HIGHEST VALUE IS 101.48254 AT (256154.69, 4094254.34, 95.72, 95.72, 1.00) DC
6TH HIGHEST VALUE IS 98.10684 AT (256081.90, 4094253.60, 94.40, 106.35, 1.00) DC
7TH HIGHEST VALUE IS 93.73115 AT (256039.72, 4094182.03, 95.10, 95.10, 1.00) DC
8TH HIGHEST VALUE IS 90.90356 AT (256178.96, 4094254.58, 96.81, 98.11, 1.00) DC
9TH HIGHEST VALUE IS 88.08270 AT (256057.63, 4094253.36, 94.70, 106.35, 1.00) DC
10TH HIGHEST VALUE IS 84.12983 AT (256027.41, 4094235.67, 94.64, 105.84, 1.00) DC

NMINE2 1ST HIGHEST VALUE IS 100.36998 AT (255968.08, 4093896.69, 93.28, 174.74, 1.00) DC
2ND HIGHEST VALUE IS 95.96113 AT (255962.10, 4093872.92, 93.07, 174.81, 1.00) DC
3RD HIGHEST VALUE IS 93.01513 AT (255974.05, 4093920.47, 93.58, 93.58, 1.00) DC
4TH HIGHEST VALUE IS 79.59890 AT (255943.83, 4093902.78, 93.01, 174.81, 1.00) DC
5TH HIGHEST VALUE IS 78.27426 AT (255949.80, 4093926.56, 93.28, 174.81, 1.00) DC
6TH HIGHEST VALUE IS 76.73374 AT (255980.02, 4093944.25, 94.86, 94.86, 1.00) DC
7TH HIGHEST VALUE IS 76.00945 AT (255956.13, 4093849.14, 93.89, 174.81, 1.00) DC
8TH HIGHEST VALUE IS 69.39195 AT (255937.86, 4093879.01, 93.29, 174.81, 1.00) DC
9TH HIGHEST VALUE IS 67.64860 AT (255955.77, 4093950.34, 93.01, 174.74, 1.00) DC
10TH HIGHEST VALUE IS 63.02968 AT (255985.99, 4093968.03, 94.39, 94.98, 1.00) DC

NMINE3 1ST HIGHEST VALUE IS 103.70945 AT (255878.52, 4093540.03, 91.00, 174.81, 1.00) DC
2ND HIGHEST VALUE IS 100.52647 AT (255884.49, 4093563.81, 91.85, 174.81, 1.00) DC
3RD HIGHEST VALUE IS 95.46881 AT (255876.50, 4093517.83, 91.04, 174.81, 1.00) DC
4TH HIGHEST VALUE IS 84.97100 AT (255890.46, 4093587.59, 92.14, 174.81, 1.00) DC
5TH HIGHEST VALUE IS 83.69044 AT (255860.24, 4093569.90, 89.68, 174.81, 1.00) DC
6TH HIGHEST VALUE IS 80.87014 AT (255853.62, 4093542.29, 89.30, 174.81, 1.00) DC
7TH HIGHEST VALUE IS 80.40118 AT (255874.48, 4093495.64, 91.07, 174.81, 1.00) DC
8TH HIGHEST VALUE IS 75.55069 AT (255866.21, 4093593.67, 89.70, 174.81, 1.00) DC
9TH HIGHEST VALUE IS 70.23495 AT (255896.43, 4093611.36, 92.12, 174.81, 1.00) DC
10TH HIGHEST VALUE IS 65.79757 AT (255836.00, 4093575.98, 89.77, 174.81, 1.00) DC

NMINE4 1ST HIGHEST VALUE IS 15.29106 AT (256337.34, 4093254.29, 96.19, 102.59, 1.00) DC
2ND HIGHEST VALUE IS 15.02603 AT (256357.35, 4093240.58, 96.99, 102.59, 1.00) DC
3RD HIGHEST VALUE IS 14.78344 AT (256317.33, 4093268.00, 95.42, 102.58, 1.00) DC
4TH HIGHEST VALUE IS 14.41919 AT (256377.37, 4093226.86, 98.01, 102.59, 1.00) DC
5TH HIGHEST VALUE IS 13.76619 AT (256297.32, 4093281.71, 95.54, 101.18, 1.00) DC
6TH HIGHEST VALUE IS 13.62406 AT (256397.38, 4093213.15, 97.65, 102.59, 1.00) DC
7TH HIGHEST VALUE IS 13.08797 AT (255932.25, 4093754.03, 92.55, 174.81, 1.00) DC
8TH HIGHEST VALUE IS 13.05086 AT (255926.28, 4093730.25, 92.93, 174.81, 1.00) DC
9TH HIGHEST VALUE IS 12.97818 AT (255920.31, 4093706.47, 92.60, 174.81, 1.00) DC
10TH HIGHEST VALUE IS 12.78025 AT (256257.29, 4093309.14, 95.24, 96.03, 1.00) DC

*** MODELOPTs: CONC ELEV FLGPOL ARM2 RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM 40TH-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

NETWORK

GROUP ID AVERAGE CONC RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID

NMINE5 1ST HIGHEST VALUE IS 43.98581 AT (256407.08, 4093190.25, 97.26, 97.26, 1.00) DC
2ND HIGHEST VALUE IS 43.68807 AT (256397.38, 4093213.15, 97.65, 102.59, 1.00) DC
3RD HIGHEST VALUE IS 41.75491 AT (256416.78, 4093167.36, 97.86, 99.71, 1.00) DC
4TH HIGHEST VALUE IS 36.88882 AT (256377.37, 4093226.86, 98.01, 102.59, 1.00) DC
5TH HIGHEST VALUE IS 34.42154 AT (256426.48, 4093144.46, 98.22, 102.44, 1.00) DC
6TH HIGHEST VALUE IS 33.68646 AT (256383.25, 4093192.53, 94.48, 102.59, 1.00) DC
7TH HIGHEST VALUE IS 31.39619 AT (256357.35, 4093240.58, 96.99, 102.59, 1.00) DC
8TH HIGHEST VALUE IS 30.20105 AT (256363.24, 4093206.24, 91.16, 102.59, 1.00) DC
9TH HIGHEST VALUE IS 28.74704 AT (256436.18, 4093121.56, 97.74, 103.22, 1.00) DC
10TH HIGHEST VALUE IS 28.45947 AT (256393.76, 4093157.60, 91.47, 103.22, 1.00) DC

NMINE6 1ST HIGHEST VALUE IS 55.14298 AT (256994.86, 4092703.42, 97.89, 97.89, 1.00) DC
2ND HIGHEST VALUE IS 53.25134 AT (257011.91, 4092721.21, 97.82, 97.82, 1.00) DC
3RD HIGHEST VALUE IS 51.17647 AT (256977.82, 4092685.63, 98.08, 98.08, 1.00) DC
4TH HIGHEST VALUE IS 48.11361 AT (257028.96, 4092738.99, 97.54, 97.54, 1.00) DC
5TH HIGHEST VALUE IS 44.70773 AT (256936.46, 4092669.17, 97.16, 97.16, 1.00) DC
6TH HIGHEST VALUE IS 44.42045 AT (256960.77, 4092667.84, 97.75, 98.61, 1.00) DC
7TH HIGHEST VALUE IS 43.90048 AT (257012.91, 4092686.12, 98.02, 101.65, 1.00) DC
8TH HIGHEST VALUE IS 42.45348 AT (257029.96, 4092703.91, 97.89, 102.21, 1.00) DC
9TH HIGHEST VALUE IS 41.42468 AT (256912.16, 4092670.51, 97.23, 97.23, 1.00) DC
10TH HIGHEST VALUE IS 40.94994 AT (256995.87, 4092668.33, 98.21, 98.21, 1.00) DC

NMINE7 1ST HIGHEST VALUE IS 63.61027 AT (256986.20, 4094012.73, 95.01, 95.01, 1.00) DC
2ND HIGHEST VALUE IS 63.12900 AT (256962.00, 4094012.99, 95.57, 96.60, 1.00) DC
3RD HIGHEST VALUE IS 63.00701 AT (256937.79, 4094013.25, 96.09, 97.39, 1.00) DC
4TH HIGHEST VALUE IS 58.89485 AT (256913.58, 4094013.50, 96.07, 97.44, 1.00) DC
5TH HIGHEST VALUE IS 58.49892 AT (257010.41, 4094012.48, 95.29, 95.29, 1.00) DC
6TH HIGHEST VALUE IS 56.37150 AT (256889.38, 4094013.76, 96.15, 97.45, 1.00) DC
7TH HIGHEST VALUE IS 55.31278 AT (257176.54, 4093819.37, 100.10, 100.10, 1.00) DC
8TH HIGHEST VALUE IS 54.22517 AT (257182.17, 4093795.40, 99.53, 100.71, 1.00) DC
9TH HIGHEST VALUE IS 53.77099 AT (257170.90, 4093843.35, 100.25, 100.64, 1.00) DC
10TH HIGHEST VALUE IS 53.41861 AT (256938.06, 4094038.25, 88.98, 97.58, 1.00) DC

NMINE8 1ST HIGHEST VALUE IS 93.58211 AT (257247.38, 4093291.21, 98.59, 109.71, 1.00) DC
2ND HIGHEST VALUE IS 91.67212 AT (257248.40, 4093315.92, 98.40, 109.71, 1.00) DC
3RD HIGHEST VALUE IS 83.66453 AT (257249.41, 4093340.63, 98.26, 109.71, 1.00) DC
4TH HIGHEST VALUE IS 83.32250 AT (257246.36, 4093266.49, 98.71, 109.71, 1.00) DC
5TH HIGHEST VALUE IS 73.38333 AT (257250.42, 4093365.35, 98.10, 99.70, 1.00) DC
6TH HIGHEST VALUE IS 69.65879 AT (257245.35, 4093241.78, 98.90, 109.71, 1.00) DC
7TH HIGHEST VALUE IS 66.94444 AT (257272.36, 4093290.18, 99.27, 109.71, 1.00) DC
8TH HIGHEST VALUE IS 64.66301 AT (257271.34, 4093265.47, 99.31, 109.71, 1.00) DC
9TH HIGHEST VALUE IS 64.60224 AT (257273.37, 4093314.90, 99.22, 118.98, 1.00) DC
10TH HIGHEST VALUE IS 60.90438 AT (257251.44, 4093390.06, 97.91, 97.91, 1.00) DC

*** MODELOPTs: CONC ELEV FLGPOL ARM2 RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM 40TH-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	NETWORK RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID
NMINE9	1ST HIGHEST VALUE IS	73.10476 AT (257197.94, 4092998.78, 98.03, 98.75, 1.00) DC
	2ND HIGHEST VALUE IS	69.29030 AT (257190.90, 4092977.28, 97.63, 98.43, 1.00) DC
	3RD HIGHEST VALUE IS	68.10032 AT (257204.98, 4093020.27, 98.40, 98.87, 1.00) DC
	4TH HIGHEST VALUE IS	61.20712 AT (257183.86, 4092955.79, 97.46, 103.23, 1.00) DC
	5TH HIGHEST VALUE IS	61.03805 AT (257212.03, 4093041.77, 98.55, 98.73, 1.00) DC
	6TH HIGHEST VALUE IS	55.69023 AT (257221.70, 4092991.00, 98.78, 103.07, 1.00) DC
	7TH HIGHEST VALUE IS	53.80828 AT (257214.66, 4092969.50, 98.74, 103.72, 1.00) DC
	8TH HIGHEST VALUE IS	52.70857 AT (257170.89, 4092935.36, 97.57, 99.41, 1.00) DC
	9TH HIGHEST VALUE IS	52.34780 AT (257219.07, 4093063.26, 98.54, 98.54, 1.00) DC
	10TH HIGHEST VALUE IS	51.14796 AT (257228.74, 4093012.49, 98.84, 98.84, 1.00) DC
ALL	1ST HIGHEST VALUE IS	113.78974 AT (255878.52, 4093540.03, 91.00, 174.81, 1.00) DC
	2ND HIGHEST VALUE IS	113.17130 AT (255968.08, 4093896.69, 93.28, 174.74, 1.00) DC
	3RD HIGHEST VALUE IS	112.60356 AT (256130.43, 4094254.09, 94.79, 106.35, 1.00) DC
	4TH HIGHEST VALUE IS	111.57373 AT (256154.69, 4094254.34, 95.72, 95.72, 1.00) DC
	5TH HIGHEST VALUE IS	111.32208 AT (256045.69, 4094205.80, 95.05, 95.05, 1.00) DC
	6TH HIGHEST VALUE IS	110.95273 AT (255884.49, 4093563.81, 91.85, 174.81, 1.00) DC
	7TH HIGHEST VALUE IS	110.79816 AT (256106.16, 4094253.85, 94.32, 106.35, 1.00) DC
	8TH HIGHEST VALUE IS	110.65617 AT (256051.66, 4094229.58, 94.90, 94.90, 1.00) DC
	9TH HIGHEST VALUE IS	107.79477 AT (255974.05, 4093920.47, 93.58, 93.58, 1.00) DC
	10TH HIGHEST VALUE IS	107.15848 AT (255962.10, 4093872.92, 93.07, 174.81, 1.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: CONC ELEV FLGPOL ARM2 RURAL ADJ_U*

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 7 Warning Message(s)
A Total of 1361 Informational Message(s)

A Total of 43824 Hours Were Processed

A Total of 750 Calm Hours Identified

A Total of 611 Missing Hours Identified (1.39 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********

CO W361	28	COCARD: Multiyear PERIOD/ANNUAL values for NO2/SO2 require MULTYEAR Opt
SO W298	107	SOGRP: Results reported for source group ALL include NOBACKGROUND
SO W321	108	SRCQA: BACKGROUND concs are NOT included in any SRCGROUP!
ME W186	130	MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used 0.50
ME W187	130	MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
MX W420	7582	METQA: Wind Speed Out-of-Range. KURDAT = 18111222
MX W420	7588	METQA: Wind Speed Out-of-Range. KURDAT = 18111304

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**
** AERMOD Input Produced by:
** AERMOD View Ver. 13.0.0
** Lakes Environmental Software Inc.
** Date: 3/10/2026
** File: C:\z_AERMOD\Rockfield\NO2hr\NO2hr.ADI
**
**************************************
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**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE Rockfield NO2 Hourly Average
   MODELOPT DFAULT CONC ARM2
   AVERTIME 1
   POLLUTID NO2
   FLAGPOLE 1.50
   RUNORNOT RUN
** NO2 Conversion Options
   ARMRATIO 0.500 0.900
   ERRORFIL NO2hr.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
** Source Parameters **
   SRCPARAM SSNK               0.0     0.000   133.356     1.000
   SRCPARAM NSNK               0.0     0.000   134.565     1.000
** LINE VOLUME Source ID = NRD1
   SRCPARAM L0002395     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002396     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002397     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002398     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002399     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002400     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002401     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002402     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002403     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002404     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002405     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002406     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002407     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002408     0.0006163636      4.25      4.65      3.95
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SRCPARAM L0002409     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002410     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002411     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002412     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002413     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002414     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002415     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002416     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002417     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002418     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002419     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002420     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002421     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002422     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002423     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002424     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002425     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002426     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002427     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002428     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002429     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002430     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002431     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002432     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002433     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002434     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002435     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002436     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002437     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002438     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002439     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002440     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002441     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002442     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002443     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002444     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002445     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002446     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002447     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002448     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002449     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002450     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002451     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002452     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002453     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002454     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002455     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002456     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002457     0.0006163636      4.25      4.65      3.95
SRCPARAM L0002458     0.0006163636      4.25      4.65      3.95
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   SRCPARAM L0002459     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002460     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002461     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002462     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002463     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002464     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002465     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002466     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002467     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002468     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002469     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002470     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002471     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002472     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002473     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002474     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002475     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002476     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002477     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002478     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002479     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002480     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002481     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002482     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002483     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002484     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002485     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002486     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002487     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002488     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002489     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002490     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002491     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002492     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002493     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002494     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002495     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002496     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002497     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002498     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002499     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002500     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002501     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002502     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002503     0.0006163636      4.25      4.65      3.95
   SRCPARAM L0002504     0.0006163636      4.25      4.65      3.95
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** LINE VOLUME Source ID = NRD2
   SRCPARAM L0002505     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002506     0.0000992623      3.40      5.12      3.16
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SRCPARAM L0002507     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002508     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002509     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002510     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002511     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002512     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002513     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002514     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002515     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002516     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002517     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002518     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002519     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002520     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002521     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002522     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002523     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002524     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002525     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002526     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002527     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002528     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002529     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002530     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002531     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002532     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002533     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002534     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002535     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002536     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002537     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002538     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002539     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002540     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002541     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002542     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002543     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002544     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002545     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002546     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002547     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002548     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002549     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002550     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002551     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002552     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002553     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002554     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002555     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002556     0.0000992623      3.40      5.12      3.16
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SRCPARAM L0002557     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002558     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002559     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002560     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002561     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002562     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002563     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002564     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002565     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002566     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002567     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002568     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002569     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002570     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002571     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002572     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002573     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002574     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002575     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002576     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002577     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002578     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002579     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002580     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002581     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002582     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002583     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002584     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002585     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002586     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002587     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002588     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002589     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002590     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002591     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002592     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002593     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002594     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002595     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002596     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002597     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002598     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002599     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002600     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002601     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002602     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002603     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002604     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002605     0.0000992623      3.40      5.12      3.16
SRCPARAM L0002606     0.0000992623      3.40      5.12      3.16
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   SRCPARAM L0002607     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002608     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002609     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002610     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002611     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002612     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002613     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002614     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002615     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002616     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002617     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002618     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002619     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002620     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002621     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002622     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002623     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002624     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002625     0.0000992623      3.40      5.12      3.16
   SRCPARAM L0002626     0.0000992623      3.40      5.12      3.16
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** LINE VOLUME Source ID = NRD3
   SRCPARAM L0002627     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002628     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002629     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002630     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002631     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002632     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002633     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002634     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002635     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002636     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002637     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002638     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002639     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002640     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002641     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002642     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002643     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002644     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002645     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002646     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002647     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002648     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002649     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002650     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002651     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002652     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002653     0.0004484305      4.25      4.65      3.95
   SRCPARAM L0002654     0.0004484305      4.25      4.65      3.95
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SRCPARAM L0002655     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002656     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002657     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002658     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002659     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002660     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002661     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002662     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002663     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002664     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002665     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002666     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002667     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002668     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002669     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002670     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002671     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002672     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002673     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002674     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002675     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002676     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002677     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002678     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002679     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002680     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002681     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002682     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002683     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002684     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002685     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002686     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002687     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002688     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002689     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002690     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002691     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002692     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002693     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002694     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002695     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002696     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002697     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002698     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002699     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002700     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002701     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002702     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002703     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002704     0.0004484305      4.25      4.65      3.95
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SRCPARAM L0002705     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002706     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002707     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002708     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002709     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002710     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002711     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002712     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002713     0.0004484305      4.25      4.65      3.95
SRCPARAM L0002714     0.0004484305      4.25      4.65      3.95
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SRCPARAM L0002990     0.0013939394      4.25      4.65      3.95
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SRCPARAM L0002992     0.0013939394      4.25      4.65      3.95
SRCPARAM L0002993     0.0013939394      4.25      4.65      3.95
SRCPARAM L0002994     0.0013939394      4.25      4.65      3.95
SRCPARAM L0002995     0.0013939394      4.25      4.65      3.95
SRCPARAM L0002996     0.0013939394      4.25      4.65      3.95
SRCPARAM L0002997     0.0013939394      4.25      4.65      3.95
SRCPARAM L0002998     0.0013939394      4.25      4.65      3.95
SRCPARAM L0002999     0.0013939394      4.25      4.65      3.95
SRCPARAM L0003000     0.0013939394      4.25      4.65      3.95
SRCPARAM L0003001     0.0013939394      4.25      4.65      3.95
SRCPARAM L0003002     0.0013939394      4.25      4.65      3.95
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   SRCPARAM L0003003     0.0013939394      4.25      4.65      3.95
   SRCPARAM L0003004     0.0013939394      4.25      4.65      3.95
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   SRCPARAM L0003006     0.0013939394      4.25      4.65      3.95
   SRCPARAM L0003007     0.0013939394      4.25      4.65      3.95
   SRCPARAM L0003008     0.0013939394      4.25      4.65      3.95
   SRCPARAM L0003009     0.0013939394      4.25      4.65      3.95
   SRCPARAM L0003010     0.0013939394      4.25      4.65      3.95
   SRCPARAM L0003011     0.0013939394      4.25      4.65      3.95
   SRCPARAM L0003012     0.0013939394      4.25      4.65      3.95
   SRCPARAM L0003013     0.0013939394      4.25      4.65      3.95
   SRCPARAM L0003014     0.0013939394      4.25      4.65      3.95
** ------------------------------------------------------------------
   SRCPARAM SPILE             0.0     1.000        24
   AREAVERT SPILE        256392.826 4090627.404 256299.163 4090697.866
   AREAVERT SPILE        256191.750 4090755.439 256068.011 4090782.078
   AREAVERT SPILE        255998.408 4090717.630 256015.594 4090546.630
   AREAVERT SPILE        256101.524 4090442.655 256235.575 4090404.846
   AREAVERT SPILE        256319.786 4090522.570 256397.123 4090616.233
   AREAVERT SPILE        256471.022 4090567.253 256367.906 4090398.831
   AREAVERT SPILE        256251.901 4090352.429 256086.916 4090379.926
   AREAVERT SPILE        255994.971 4090471.871 255907.323 4090529.444
   AREAVERT SPILE        255888.418 4090690.992 255956.303 4090820.746
   AREAVERT SPILE        256047.388 4090871.445 256208.936 4090852.540
   AREAVERT SPILE        256367.047 4090767.470 256467.585 4090678.962
   AREAVERT SPILE        256508.831 4090610.218 256478.756 4090574.128
   SRCPARAM SPLNT             0.0     1.000    29.667     1.000
   SRCPARAM NASTK           0.557     9.144   400.000        20       1.3
   SRCPARAM NAPLNT         0.0427     1.000    10.900     1.000
   SRCPARAM NMPLNT            0.0     1.000     5.637     1.000
   SRCPARAM NPLNT             0.0     1.000    49.235     1.000
   SRCPARAM NPILE             0.0     1.000        11
   AREAVERT NPILE        256496.869 4093919.057 256616.926 4093910.549
   AREAVERT NPILE        256718.077 4093856.665 256764.399 4093816.016
   AREAVERT NPILE        256782.360 4093751.733 256777.633 4093684.614
   AREAVERT NPILE        256734.148 4093663.817 256621.653 4093687.450
   AREAVERT NPILE        256558.316 4093736.607 256491.197 4093808.453
   AREAVERT NPILE        256469.454 4093903.932
   SRCPARAM NMINE1            0.0     1.000    56.240     1.000
   SRCPARAM NMINE2            0.0     1.000    56.240     1.000
   SRCPARAM NMINE3            0.0     1.000    56.240     1.000
   SRCPARAM NMINE4            0.0     1.000    56.240     1.000
   SRCPARAM NMINE5            0.0     1.000    56.240     1.000
   SRCPARAM NMINE6            0.0     1.000    56.240     1.000
   SRCPARAM NMINE7            0.0     1.000    56.240     1.000
   SRCPARAM NMINE8         0.4938     1.000    56.240     1.000
   SRCPARAM NMINE9         0.4938     1.000    56.240     1.000
   SRCPARAM SRMPT             0.0     4.572    16.916     1.000
   SRCPARAM SAPLT             0.0     4.572    24.691     1.000
   SRCPARAM SASTK           0.557     9.144   399.983        20       1.3
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   SRCPARAM SMINE            0.177     1.000    56.240     1.000
 SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED NO2hr.rou
RE FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST 8TH
   RECTABLE 1 1ST 8TH
** Auto-Generated Plotfiles
   PLOTFILE 1 NAPLNT 1ST NO2HR.AD\01H1G001.PLT 31
   PLOTFILE 1 NASTK 1ST NO2HR.AD\01H1G002.PLT 32
   PLOTFILE 1 NMINE1 1ST NO2HR.AD\01H1G003.PLT 33
   PLOTFILE 1 NMINE2 1ST NO2HR.AD\01H1G004.PLT 34
   PLOTFILE 1 NMINE3 1ST NO2HR.AD\01H1G005.PLT 35
   PLOTFILE 1 NMINE4 1ST NO2HR.AD\01H1G006.PLT 36
   PLOTFILE 1 NMINE5 1ST NO2HR.AD\01H1G007.PLT 37
   PLOTFILE 1 NMINE6 1ST NO2HR.AD\01H1G008.PLT 38
   PLOTFILE 1 NMINE7 1ST NO2HR.AD\01H1G009.PLT 39
   PLOTFILE 1 NMINE8 1ST NO2HR.AD\01H1G010.PLT 40
   PLOTFILE 1 NMINE9 1ST NO2HR.AD\01H1G011.PLT 41
   PLOTFILE 1 NMPLNT 1ST NO2HR.AD\01H1G012.PLT 42
   PLOTFILE 1 NPILE 1ST NO2HR.AD\01H1G013.PLT 43
   PLOTFILE 1 NPLNT 1ST NO2HR.AD\01H1G014.PLT 44
   PLOTFILE 1 NRD1 1ST NO2HR.AD\01H1G015.PLT 45
   PLOTFILE 1 NRD2 1ST NO2HR.AD\01H1G016.PLT 46
   PLOTFILE 1 NRD3 1ST NO2HR.AD\01H1G017.PLT 47
   PLOTFILE 1 NSNK 1ST NO2HR.AD\01H1G018.PLT 48
   PLOTFILE 1 SPILE 1ST NO2HR.AD\01H1G019.PLT 49
   PLOTFILE 1 SPLNT 1ST NO2HR.AD\01H1G020.PLT 50
   PLOTFILE 1 SRD1 1ST NO2HR.AD\01H1G021.PLT 51
   PLOTFILE 1 SSNK 1ST NO2HR.AD\01H1G022.PLT 52
   PLOTFILE 1 SAPLT 1ST NO2HR.AD\01H1G023.PLT 53
   PLOTFILE 1 SASTK 1ST NO2HR.AD\01H1G024.PLT 54
   PLOTFILE 1 SMINE 1ST NO2HR.AD\01H1G025.PLT 55
   PLOTFILE 1 SRMPT 1ST NO2HR.AD\01H1G026.PLT 56
   PLOTFILE 1 ALL 1ST NO2HR.AD\01H1GALL.PLT 57
   PLOTFILE 1 NORTH 1ST NO2HR.AD\01H1G027.PLT 58
   PLOTFILE 1 SOUTH 1ST NO2HR.AD\01H1G028.PLT 59
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PLOTFILE 1 POSITIVE 1ST NO2HR.AD\01H1G029.PLT 60
PLOTFILE 1 NEGATIVE 1ST NO2HR.AD\01H1G030.PLT 61
PLOTFILE 1 NAPLNT 8TH NO2HR.AD\01H8G001.PLT 62
PLOTFILE 1 NASTK 8TH NO2HR.AD\01H8G002.PLT 63
PLOTFILE 1 NMINE1 8TH NO2HR.AD\01H8G003.PLT 64
PLOTFILE 1 NMINE2 8TH NO2HR.AD\01H8G004.PLT 65
PLOTFILE 1 NMINE3 8TH NO2HR.AD\01H8G005.PLT 66
PLOTFILE 1 NMINE4 8TH NO2HR.AD\01H8G006.PLT 67
PLOTFILE 1 NMINE5 8TH NO2HR.AD\01H8G007.PLT 68
PLOTFILE 1 NMINE6 8TH NO2HR.AD\01H8G008.PLT 69
PLOTFILE 1 NMINE7 8TH NO2HR.AD\01H8G009.PLT 70
PLOTFILE 1 NMINE8 8TH NO2HR.AD\01H8G010.PLT 71
PLOTFILE 1 NMINE9 8TH NO2HR.AD\01H8G011.PLT 72
PLOTFILE 1 NMPLNT 8TH NO2HR.AD\01H8G012.PLT 73
PLOTFILE 1 NPILE 8TH NO2HR.AD\01H8G013.PLT 74
PLOTFILE 1 NPLNT 8TH NO2HR.AD\01H8G014.PLT 75
PLOTFILE 1 NRD1 8TH NO2HR.AD\01H8G015.PLT 76
PLOTFILE 1 NRD2 8TH NO2HR.AD\01H8G016.PLT 77
PLOTFILE 1 NRD3 8TH NO2HR.AD\01H8G017.PLT 78
PLOTFILE 1 NSNK 8TH NO2HR.AD\01H8G018.PLT 79
PLOTFILE 1 SPILE 8TH NO2HR.AD\01H8G019.PLT 80
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PLOTFILE 1 SRD1 8TH NO2HR.AD\01H8G021.PLT 82
PLOTFILE 1 SSNK 8TH NO2HR.AD\01H8G022.PLT 83
PLOTFILE 1 SAPLT 8TH NO2HR.AD\01H8G023.PLT 84
PLOTFILE 1 SASTK 8TH NO2HR.AD\01H8G024.PLT 85
PLOTFILE 1 SMINE 8TH NO2HR.AD\01H8G025.PLT 86
PLOTFILE 1 SRMPT 8TH NO2HR.AD\01H8G026.PLT 87
PLOTFILE 1 ALL 8TH NO2HR.AD\01H8GALL.PLT 88
PLOTFILE 1 NORTH 8TH NO2HR.AD\01H8G027.PLT 89
PLOTFILE 1 SOUTH 8TH NO2HR.AD\01H8G028.PLT 90
PLOTFILE 1 POSITIVE 8TH NO2HR.AD\01H8G029.PLT 91
PLOTFILE 1 NEGATIVE 8TH NO2HR.AD\01H8G030.PLT 92
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MXDYBYYR NASTK NO2HR.AD\MXDYBYYR_NASTK_NO2.DAT 94
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MXDYBYYR NMINE4 NO2HR.AD\MXDYBYYR_NMINE4_NO2.DAT 98
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MXDYBYYR NMINE6 NO2HR.AD\MXDYBYYR_NMINE6_NO2.DAT 100
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MXDYBYYR NMINE8 NO2HR.AD\MXDYBYYR_NMINE8_NO2.DAT 102
MXDYBYYR NMINE9 NO2HR.AD\MXDYBYYR_NMINE9_NO2.DAT 103
MXDYBYYR NMPLNT NO2HR.AD\MXDYBYYR_NMPLNT_NO2.DAT 104
MXDYBYYR NPILE NO2HR.AD\MXDYBYYR_NPILE_NO2.DAT 105
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MXDYBYYR NRD1 NO2HR.AD\MXDYBYYR_NRD1_NO2.DAT 107
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MXDYBYYR NRD3 NO2HR.AD\MXDYBYYR_NRD3_NO2.DAT 109
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   MXDYBYYR SPLNT NO2HR.AD\MXDYBYYR_SPLNT_NO2.DAT 112
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   MXDYBYYR SMINE NO2HR.AD\MXDYBYYR_SMINE_NO2.DAT 117
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   MXDYBYYR SOUTH NO2HR.AD\MXDYBYYR_SOUTH_NO2.DAT 121
   MXDYBYYR POSITIVE NO2HR.AD\MXDYBYYR_POSITIVE_NO2.DAT 122
   MXDYBYYR NEGATIVE NO2HR.AD\MXDYBYYR_NEGATIVE_NO2.DAT 123
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   MAXDAILY NMINE8 NO2HR.AD\MAXDAILY_NMINE8_NO2.DAT 133
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   MAXDAILY NPILE NO2HR.AD\MAXDAILY_NPILE_NO2.DAT 136
   MAXDAILY NPLNT NO2HR.AD\MAXDAILY_NPLNT_NO2.DAT 137
   MAXDAILY NRD1 NO2HR.AD\MAXDAILY_NRD1_NO2.DAT 138
   MAXDAILY NRD2 NO2HR.AD\MAXDAILY_NRD2_NO2.DAT 139
   MAXDAILY NRD3 NO2HR.AD\MAXDAILY_NRD3_NO2.DAT 140
   MAXDAILY NSNK NO2HR.AD\MAXDAILY_NSNK_NO2.DAT 141
   MAXDAILY SPILE NO2HR.AD\MAXDAILY_SPILE_NO2.DAT 142
   MAXDAILY SPLNT NO2HR.AD\MAXDAILY_SPLNT_NO2.DAT 143
   MAXDAILY SRD1 NO2HR.AD\MAXDAILY_SRD1_NO2.DAT 144
   MAXDAILY SSNK NO2HR.AD\MAXDAILY_SSNK_NO2.DAT 145
   MAXDAILY SAPLT NO2HR.AD\MAXDAILY_SAPLT_NO2.DAT 146
   MAXDAILY SASTK NO2HR.AD\MAXDAILY_SASTK_NO2.DAT 147
   MAXDAILY SMINE NO2HR.AD\MAXDAILY_SMINE_NO2.DAT 148
   MAXDAILY SRMPT NO2HR.AD\MAXDAILY_SRMPT_NO2.DAT 149
   MAXDAILY ALL NO2HR.AD\MAXDAILY_ALL_NO2.DAT 150
   MAXDAILY NORTH NO2HR.AD\MAXDAILY_NORTH_NO2.DAT 151
   MAXDAILY SOUTH NO2HR.AD\MAXDAILY_SOUTH_NO2.DAT 152
   MAXDAILY POSITIVE NO2HR.AD\MAXDAILY_POSITIVE_NO2.DAT 153
   MAXDAILY NEGATIVE NO2HR.AD\MAXDAILY_NEGATIVE_NO2.DAT 154
   SUMMFILE NO2hr.sum
OU FINISHED
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** Project Parameters
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** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
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X	Y	NO2 1st High Hourly Concentration (ug/m3)
255875.95	4090823.35	79.93
255890.82	4090840.06	78.66
255905.68	4090856.77	78.63
255872.14	4090856.68	78.32
255929.96	4090857.1	78.30
255905.34	4090881.77	77.71
255861.09	4090806.64	77.14
255929.62	4090882.1	76.65
255978.51	4090857.75	76.50
255905	4090906.77	76.37
255978.18	4090882.75	74.58
255954.24	4090857.43	74.56
256002.79	4090858.08	74.54
255868.32	4090890	74.36
255929.28	4090907.09	74.02
255838.59	4090856.59	73.56
255842.41	4090823.26	73.04
256027.07	4090858.41	72.94
255846.22	4090789.94	72.87
255953.9	4090882.42	72.69
255798.33	4090578.39	72.67
256051.35	4090858.74	72.35
256075.62	4090859.06	72.27
255886.33	4090923.38	72.23
256002.45	4090883.08	71.99
255977.84	4090907.75	71.90
256051.01	4090883.73	71.12
255800.25	4090554.27	70.95
255834.78	4090889.91	70.69
255928.95	4090932.09	70.57

x	y	NO2 8th High Hourly Concentration (ug/m3)
255790.62	4090674.86	69.29
255788.7	4090698.98	68.59
255794.47	4090626.62	68.36
255792.55	4090650.74	66.53
255798.33	4090578.39	66.28
255786.77	4090723.1	66.11
255816.5	4090756.52	65.80
255831.36	4090773.23	65.79
255801.63	4090739.81	65.65
255846.22	4090789.94	64.22
255796.4	4090602.5	64.06
255800.25	4090554.27	63.72
255861.09	4090806.64	63.53
255761.85	4090721.11	63.11
255765.7	4090672.87	63.03
255782.95	4090756.43	62.79
255763.78	4090696.99	62.72
255767.63	4090648.75	61.11
255769.55	4090624.63	60.92
255802.18	4090530.15	60.24
255812.68	4090789.84	60.16
255736.93	4090719.12	59.02
255842.41	4090823.26	58.24
255771.48	4090600.51	58.18
255749.41	4090756.33	58.06
255740.78	4090670.88	57.18
255875.95	4090823.35	56.69
255775.33	4090552.28	56.68
255779.14	4090789.75	56.52
255744.63	4090622.64	56.30

APPENDIX I2 NO2-ANNUAL
MODELING FILES

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**
** AERMOD Input Produced by:
** AERMOD View Ver. 12.0.0
** Lakes Environmental Software Inc.
** Date: 9/3/2025
** File: C:\z_AERMOD\Rockfield\NO2aa\NO2aa.ADI
**
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** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE Rockfield NO2 Annual Average
   MODELOPT DFAULT CONC ARM2
   AVERTIME ANNUAL
   POLLUTID NO2
   FLAGPOLE 1.00
   RUNORNOT RUN
** NO2 Conversion Options
   ARMRATIO 0.500 0.900
   ERRORFIL NO2aa.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
** Source Parameters **
   SRCPARAM SSNK              0.0     0.000   133.356     1.000
   SRCPARAM NSNK              0.0     0.000   134.565     1.000
** LINE VOLUME Source ID = NRD1
   SRCPARAM L0001387     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001388     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001389     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001390     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001391     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001392     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001393     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001394     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001395     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001396     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001397     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001398     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001399     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001400     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001401     0.0000272727      4.25      4.65      3.95
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SRCPARAM L0001402     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001403     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001404     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001405     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001406     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001407     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001408     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001409     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001410     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001411     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001412     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001413     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001414     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001415     0.0000272727      4.25      4.65      3.95
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SRCPARAM L0001419     0.0000272727      4.25      4.65      3.95
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SRCPARAM L0001421     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001422     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001423     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001424     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001425     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001426     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001427     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001428     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001429     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001430     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001431     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001432     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001433     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001434     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001435     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001436     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001437     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001438     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001439     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001440     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001441     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001442     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001443     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001444     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001445     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001446     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001447     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001448     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001449     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001450     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001451     0.0000272727      4.25      4.65      3.95
SRCPARAM L0001452     0.0000272727      4.25      4.65      3.95
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   SRCPARAM L0001453     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001454     0.0000272727      4.25      4.65      3.95
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   SRCPARAM L0001456     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001457     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001458     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001459     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001460     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001461     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001462     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001463     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001464     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001465     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001466     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001467     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001468     0.0000272727      4.25      4.65      3.95
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   SRCPARAM L0001470     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001471     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001472     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001473     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001474     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001475     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001476     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001477     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001478     0.0000272727      4.25      4.65      3.95
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   SRCPARAM L0001480     0.0000272727      4.25      4.65      3.95
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   SRCPARAM L0001482     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001483     0.0000272727      4.25      4.65      3.95
   SRCPARAM L0001484     0.0000272727      4.25      4.65      3.95
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   SRCPARAM L0001492     0.0000272727      4.25      4.65      3.95
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   SRCPARAM L0001494     0.0000272727      4.25      4.65      3.95
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   SRCPARAM L0001496     0.0000272727      4.25      4.65      3.95
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** LINE VOLUME Source ID = NRD2
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   SRCPARAM L0001498     0.0000180328      3.40      5.12      3.16
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   SRCPARAM L0001501     0.0000180328      3.40      5.12      3.16
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SRCPARAM L0001502     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001503     0.0000180328      3.40      5.12      3.16
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SRCPARAM L0001505     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001506     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001507     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001508     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001509     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001510     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001511     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001512     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001513     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001514     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001515     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001516     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001517     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001518     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001519     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001520     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001521     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001522     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001523     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001524     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001525     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001526     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001527     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001528     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001529     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001530     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001531     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001532     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001533     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001534     0.0000180328      3.40      5.12      3.16
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SRCPARAM L0001539     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001540     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001541     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001542     0.0000180328      3.40      5.12      3.16
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SRCPARAM L0001544     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001545     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001546     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001547     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001548     0.0000180328      3.40      5.12      3.16
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SRCPARAM L0001550     0.0000180328      3.40      5.12      3.16
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SRCPARAM L0001552     0.0000180328      3.40      5.12      3.16
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SRCPARAM L0001553     0.0000180328      3.40      5.12      3.16
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SRCPARAM L0001560     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001561     0.0000180328      3.40      5.12      3.16
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SRCPARAM L0001563     0.0000180328      3.40      5.12      3.16
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SRCPARAM L0001566     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001567     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001568     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001569     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001570     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001571     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001572     0.0000180328      3.40      5.12      3.16
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SRCPARAM L0001574     0.0000180328      3.40      5.12      3.16
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SRCPARAM L0001576     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001577     0.0000180328      3.40      5.12      3.16
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SRCPARAM L0001579     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001580     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001581     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001582     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001583     0.0000180328      3.40      5.12      3.16
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SRCPARAM L0001589     0.0000180328      3.40      5.12      3.16
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SRCPARAM L0001601     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001602     0.0000180328      3.40      5.12      3.16
SRCPARAM L0001603     0.0000180328      3.40      5.12      3.16
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   SRCPARAM L0001604     0.0000180328      3.40      5.12      3.16
   SRCPARAM L0001605     0.0000180328      3.40      5.12      3.16
   SRCPARAM L0001606     0.0000180328      3.40      5.12      3.16
   SRCPARAM L0001607     0.0000180328      3.40      5.12      3.16
   SRCPARAM L0001608     0.0000180328      3.40      5.12      3.16
   SRCPARAM L0001609     0.0000180328      3.40      5.12      3.16
   SRCPARAM L0001610     0.0000180328      3.40      5.12      3.16
   SRCPARAM L0001611     0.0000180328      3.40      5.12      3.16
   SRCPARAM L0001612     0.0000180328      3.40      5.12      3.16
   SRCPARAM L0001613     0.0000180328      3.40      5.12      3.16
   SRCPARAM L0001614     0.0000180328      3.40      5.12      3.16
   SRCPARAM L0001615     0.0000180328      3.40      5.12      3.16
   SRCPARAM L0001616     0.0000180328      3.40      5.12      3.16
   SRCPARAM L0001617     0.0000180328      3.40      5.12      3.16
   SRCPARAM L0001618     0.0000180328      3.40      5.12      3.16
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** LINE VOLUME Source ID = NRD3
   SRCPARAM L0002007     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002008     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002009     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002010     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002011     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002012     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002013     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002014     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002015     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002016     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002017     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002018     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002019     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002020     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002021     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002022     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002023     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002024     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002025     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002026     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002027     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002028     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002029     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002030     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002031     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002032     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002033     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002034     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002035     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002036     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002037     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002038     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002039     0.0001659193      4.25      4.65      3.95
   SRCPARAM L0002040     0.0001659193      4.25      4.65      3.95
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SRCPARAM L0002041     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002042     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002043     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002044     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002045     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002046     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002047     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002048     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002049     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002050     0.0001659193      4.25      4.65      3.95
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SRCPARAM L0002052     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002053     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002054     0.0001659193      4.25      4.65      3.95
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SRCPARAM L0002056     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002057     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002058     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002059     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002060     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002061     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002062     0.0001659193      4.25      4.65      3.95
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SRCPARAM L0002065     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002066     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002067     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002068     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002069     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002070     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002071     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002072     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002073     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002074     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002075     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002076     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002077     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002078     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002079     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002080     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002081     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002082     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002083     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002084     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002085     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002086     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002087     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002088     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002089     0.0001659193      4.25      4.65      3.95
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SRCPARAM L0002091     0.0001659193      4.25      4.65      3.95
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SRCPARAM L0002092     0.0001659193      4.25      4.65      3.95
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SRCPARAM L0002094     0.0001659193      4.25      4.65      3.95
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SRCPARAM L0002096     0.0001659193      4.25      4.65      3.95
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SRCPARAM L0002098     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002099     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002100     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002101     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002102     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002103     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002104     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002105     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002106     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002107     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002108     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002109     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002110     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002111     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002112     0.0001659193      4.25      4.65      3.95
SRCPARAM L0002113     0.0001659193      4.25      4.65      3.95
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   AREAVERT SPILE        255998.408 4090717.630 256015.594 4090546.630
   AREAVERT SPILE        256101.524 4090442.655 256235.575 4090404.846
   AREAVERT SPILE        256319.786 4090522.570 256397.123 4090616.233
   AREAVERT SPILE        256471.022 4090567.253 256367.906 4090398.831
   AREAVERT SPILE        256251.901 4090352.429 256086.916 4090379.926
   AREAVERT SPILE        255994.971 4090471.871 255907.323 4090529.444
   AREAVERT SPILE        255888.418 4090690.992 255956.303 4090820.746
   AREAVERT SPILE        256047.388 4090871.445 256208.936 4090852.540
   AREAVERT SPILE        256367.047 4090767.470 256467.585 4090678.962
   AREAVERT SPILE        256508.831 4090610.218 256478.756 4090574.128
   SRCPARAM SPLNT             0.0     1.000    29.667     1.000
   SRCPARAM NASTK           0.069     9.144   400.000       20       1.3
   SRCPARAM NAPLNT         0.0043     1.000    10.900     1.000
   SRCPARAM NMPLNT            0.0     1.000     5.637     1.000
   SRCPARAM NPLNT             0.0     1.000    49.235     1.000
   SRCPARAM NPILE             0.0     1.000        11
   AREAVERT NPILE        256496.869 4093919.057 256616.926 4093910.549
   AREAVERT NPILE        256718.077 4093856.665 256764.399 4093816.016
   AREAVERT NPILE        256782.360 4093751.733 256777.633 4093684.614
   AREAVERT NPILE        256734.148 4093663.817 256621.653 4093687.450
   AREAVERT NPILE        256558.316 4093736.607 256491.197 4093808.453
   AREAVERT NPILE        256469.454 4093903.932
   SRCPARAM NMINE1            0.0     1.000    56.240     1.000
   SRCPARAM NMINE2            0.0     1.000    56.240     1.000
   SRCPARAM NMINE3            0.0     1.000    56.240     1.000
   SRCPARAM NMINE4            0.0     1.000    56.240     1.000
   SRCPARAM NMINE5            0.0     1.000    56.240     1.000
   SRCPARAM NMINE6            0.0     1.000    56.240     1.000
   SRCPARAM NMINE7            0.0     1.000    56.240     1.000
   SRCPARAM NMINE8        0.12151     1.000    56.240     1.000
   SRCPARAM NMINE9        0.12151     1.000    56.240     1.000
   SRCPARAM SRMPT             0.0     4.572    16.916     1.000
   SRCPARAM SAPLT           0.028     4.572    24.691     1.000
   SRCPARAM SASTK           0.069     9.144   399.983       20       1.3
   SRCPARAM SMINE           0.178     1.000    56.240     1.000

 ***************************************
** AERMOD Output Pathway
***************************************
**
**
OU STARTING
** Auto-Generated Plotfiles
   PLOTFILE ANNUAL NAPLNT NO2AA.AD\AN00G001.PLT 31
   PLOTFILE ANNUAL NASTK NO2AA.AD\AN00G002.PLT 32
   PLOTFILE ANNUAL NMINE1 NO2AA.AD\AN00G003.PLT 33
   PLOTFILE ANNUAL NMINE2 NO2AA.AD\AN00G004.PLT 34
   PLOTFILE ANNUAL NMINE3 NO2AA.AD\AN00G005.PLT 35
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   PLOTFILE ANNUAL NMINE4 NO2AA.AD\AN00G006.PLT 36
   PLOTFILE ANNUAL NMINE5 NO2AA.AD\AN00G007.PLT 37
   PLOTFILE ANNUAL NMINE6 NO2AA.AD\AN00G008.PLT 38
   PLOTFILE ANNUAL NMINE7 NO2AA.AD\AN00G009.PLT 39
   PLOTFILE ANNUAL NMINE8 NO2AA.AD\AN00G010.PLT 40
   PLOTFILE ANNUAL NMINE9 NO2AA.AD\AN00G011.PLT 41
   PLOTFILE ANNUAL NMPLNT NO2AA.AD\AN00G012.PLT 42
   PLOTFILE ANNUAL NPILE NO2AA.AD\AN00G013.PLT 43
   PLOTFILE ANNUAL NPLNT NO2AA.AD\AN00G014.PLT 44
   PLOTFILE ANNUAL NRD1 NO2AA.AD\AN00G015.PLT 45
   PLOTFILE ANNUAL NRD2 NO2AA.AD\AN00G016.PLT 46
   PLOTFILE ANNUAL NRD3 NO2AA.AD\AN00G017.PLT 47
   PLOTFILE ANNUAL NSNK NO2AA.AD\AN00G018.PLT 48
   PLOTFILE ANNUAL SPILE NO2AA.AD\AN00G019.PLT 49
   PLOTFILE ANNUAL SPLNT NO2AA.AD\AN00G020.PLT 50
   PLOTFILE ANNUAL SRD1 NO2AA.AD\AN00G021.PLT 51
   PLOTFILE ANNUAL SSNK NO2AA.AD\AN00G022.PLT 52
   PLOTFILE ANNUAL SAPLT NO2AA.AD\AN00G023.PLT 53
   PLOTFILE ANNUAL SASTK NO2AA.AD\AN00G024.PLT 54
   PLOTFILE ANNUAL SMINE NO2AA.AD\AN00G025.PLT 55
   PLOTFILE ANNUAL SRMPT NO2AA.AD\AN00G026.PLT 56
   PLOTFILE ANNUAL ALL NO2AA.AD\AN00GALL.PLT 57
   PLOTFILE ANNUAL NORTH NO2AA.AD\AN00G027.PLT 58
   PLOTFILE ANNUAL SOUTH NO2AA.AD\AN00G028.PLT 59
   PLOTFILE ANNUAL POSITIVE NO2AA.AD\AN00G029.PLT 60
   PLOTFILE ANNUAL NEGATIVE NO2AA.AD\AN00G030.PLT 61
   SUMMFILE NO2aa.sum
OU FINISHED
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** Project Parameters
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** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
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X	Y	NO2 Annual Concentration (ug/m3)
257247.38	4093291.21	5.17
257248.4	4093315.92	5.15
257246.36	4093266.49	4.91
257249.41	4093340.63	4.79
255842.05	4090728.08	4.70
255828.98	4090709.76	4.64
255855.11	4090746.4	4.49
257245.35	4093241.78	4.45
255815.92	4090691.43	4.44
257197.94	4092998.78	4.16
257250.42	4093365.35	4.14
257190.9	4092977.28	4.13
257243.32	4093219.19	3.99
257204.98	4093020.27	3.98
255868.17	4090764.72	3.97
255802.85	4090673.11	3.96
255803.25	4090649.21	3.87
257271.34	4093265.47	3.87
257272.36	4093290.18	3.86
257183.86	4092955.79	3.86
255803.65	4090625.31	3.70
257270.33	4093240.75	3.70
255821.69	4090742.59	3.69
257273.37	4093314.9	3.66
257212.03	4093041.77	3.65
255795.56	4090705.95	3.54
255834.75	4090760.92	3.54
257241.28	4093196.6	3.53
257170.89	4092935.36	3.52
257268.22	4093216.95	3.45

APPENDIX I3 SO2-1HR
MODELING FILES

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**
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**
** AERMOD Input Produced by:
** AERMOD View Ver. 13.0.0
** Lakes Environmental Software Inc.
** Date: 3/12/2026
** File: C:\z_AERMOD\Rockfield\SO2hr_v0.2\SO2hr (1).ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE Rockfield SO2 Hourly Average
   MODELOPT DFAULT CONC
   AVERTIME 1
   POLLUTID SO2
   FLAGPOLE 1.00
   RUNORNOT RUN
   ERRORFIL NO2hr.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Parameters **
   SRCPARAM SSNK               0.0     0.000   133.356     1.000
   SRCPARAM NSNK               0.0     0.000   134.565     1.000
** LINE VOLUME Source ID = NRD1
   SRCPARAM L0002395           0.0      4.25      4.65      3.95
   SRCPARAM L0002396           0.0      4.25      4.65      3.95
   SRCPARAM L0002397           0.0      4.25      4.65      3.95
   SRCPARAM L0002398           0.0      4.25      4.65      3.95
   SRCPARAM L0002399           0.0      4.25      4.65      3.95
   SRCPARAM L0002400           0.0      4.25      4.65      3.95
   SRCPARAM L0002401           0.0      4.25      4.65      3.95
   SRCPARAM L0002402           0.0      4.25      4.65      3.95
   SRCPARAM L0002403           0.0      4.25      4.65      3.95
   SRCPARAM L0002404           0.0      4.25      4.65      3.95
   SRCPARAM L0002405           0.0      4.25      4.65      3.95
   SRCPARAM L0002406           0.0      4.25      4.65      3.95
   SRCPARAM L0002407           0.0      4.25      4.65      3.95
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SRCPARAM L0002408          0.0      4.25      4.65      3.95
SRCPARAM L0002409          0.0      4.25      4.65      3.95
SRCPARAM L0002410          0.0      4.25      4.65      3.95
SRCPARAM L0002411          0.0      4.25      4.65      3.95
SRCPARAM L0002412          0.0      4.25      4.65      3.95
SRCPARAM L0002413          0.0      4.25      4.65      3.95
SRCPARAM L0002414          0.0      4.25      4.65      3.95
SRCPARAM L0002415          0.0      4.25      4.65      3.95
SRCPARAM L0002416          0.0      4.25      4.65      3.95
SRCPARAM L0002417          0.0      4.25      4.65      3.95
SRCPARAM L0002418          0.0      4.25      4.65      3.95
SRCPARAM L0002419          0.0      4.25      4.65      3.95
SRCPARAM L0002420          0.0      4.25      4.65      3.95
SRCPARAM L0002421          0.0      4.25      4.65      3.95
SRCPARAM L0002422          0.0      4.25      4.65      3.95
SRCPARAM L0002423          0.0      4.25      4.65      3.95
SRCPARAM L0002424          0.0      4.25      4.65      3.95
SRCPARAM L0002425          0.0      4.25      4.65      3.95
SRCPARAM L0002426          0.0      4.25      4.65      3.95
SRCPARAM L0002427          0.0      4.25      4.65      3.95
SRCPARAM L0002428          0.0      4.25      4.65      3.95
SRCPARAM L0002429          0.0      4.25      4.65      3.95
SRCPARAM L0002430          0.0      4.25      4.65      3.95
SRCPARAM L0002431          0.0      4.25      4.65      3.95
SRCPARAM L0002432          0.0      4.25      4.65      3.95
SRCPARAM L0002433          0.0      4.25      4.65      3.95
SRCPARAM L0002434          0.0      4.25      4.65      3.95
SRCPARAM L0002435          0.0      4.25      4.65      3.95
SRCPARAM L0002436          0.0      4.25      4.65      3.95
SRCPARAM L0002437          0.0      4.25      4.65      3.95
SRCPARAM L0002438          0.0      4.25      4.65      3.95
SRCPARAM L0002439          0.0      4.25      4.65      3.95
SRCPARAM L0002440          0.0      4.25      4.65      3.95
SRCPARAM L0002441          0.0      4.25      4.65      3.95
SRCPARAM L0002442          0.0      4.25      4.65      3.95
SRCPARAM L0002443          0.0      4.25      4.65      3.95
SRCPARAM L0002444          0.0      4.25      4.65      3.95
SRCPARAM L0002445          0.0      4.25      4.65      3.95
SRCPARAM L0002446          0.0      4.25      4.65      3.95
SRCPARAM L0002447          0.0      4.25      4.65      3.95
SRCPARAM L0002448          0.0      4.25      4.65      3.95
SRCPARAM L0002449          0.0      4.25      4.65      3.95
SRCPARAM L0002450          0.0      4.25      4.65      3.95
SRCPARAM L0002451          0.0      4.25      4.65      3.95
SRCPARAM L0002452          0.0      4.25      4.65      3.95
SRCPARAM L0002453          0.0      4.25      4.65      3.95
SRCPARAM L0002454          0.0      4.25      4.65      3.95
SRCPARAM L0002455          0.0      4.25      4.65      3.95
SRCPARAM L0002456          0.0      4.25      4.65      3.95
SRCPARAM L0002457          0.0      4.25      4.65      3.95
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   SRCPARAM L0002458          0.0      4.25      4.65      3.95
   SRCPARAM L0002459          0.0      4.25      4.65      3.95
   SRCPARAM L0002460          0.0      4.25      4.65      3.95
   SRCPARAM L0002461          0.0      4.25      4.65      3.95
   SRCPARAM L0002462          0.0      4.25      4.65      3.95
   SRCPARAM L0002463          0.0      4.25      4.65      3.95
   SRCPARAM L0002464          0.0      4.25      4.65      3.95
   SRCPARAM L0002465          0.0      4.25      4.65      3.95
   SRCPARAM L0002466          0.0      4.25      4.65      3.95
   SRCPARAM L0002467          0.0      4.25      4.65      3.95
   SRCPARAM L0002468          0.0      4.25      4.65      3.95
   SRCPARAM L0002469          0.0      4.25      4.65      3.95
   SRCPARAM L0002470          0.0      4.25      4.65      3.95
   SRCPARAM L0002471          0.0      4.25      4.65      3.95
   SRCPARAM L0002472          0.0      4.25      4.65      3.95
   SRCPARAM L0002473          0.0      4.25      4.65      3.95
   SRCPARAM L0002474          0.0      4.25      4.65      3.95
   SRCPARAM L0002475          0.0      4.25      4.65      3.95
   SRCPARAM L0002476          0.0      4.25      4.65      3.95
   SRCPARAM L0002477          0.0      4.25      4.65      3.95
   SRCPARAM L0002478          0.0      4.25      4.65      3.95
   SRCPARAM L0002479          0.0      4.25      4.65      3.95
   SRCPARAM L0002480          0.0      4.25      4.65      3.95
   SRCPARAM L0002481          0.0      4.25      4.65      3.95
   SRCPARAM L0002482          0.0      4.25      4.65      3.95
   SRCPARAM L0002483          0.0      4.25      4.65      3.95
   SRCPARAM L0002484          0.0      4.25      4.65      3.95
   SRCPARAM L0002485          0.0      4.25      4.65      3.95
   SRCPARAM L0002486          0.0      4.25      4.65      3.95
   SRCPARAM L0002487          0.0      4.25      4.65      3.95
   SRCPARAM L0002488          0.0      4.25      4.65      3.95
   SRCPARAM L0002489          0.0      4.25      4.65      3.95
   SRCPARAM L0002490          0.0      4.25      4.65      3.95
   SRCPARAM L0002491          0.0      4.25      4.65      3.95
   SRCPARAM L0002492          0.0      4.25      4.65      3.95
   SRCPARAM L0002493          0.0      4.25      4.65      3.95
   SRCPARAM L0002494          0.0      4.25      4.65      3.95
   SRCPARAM L0002495          0.0      4.25      4.65      3.95
   SRCPARAM L0002496          0.0      4.25      4.65      3.95
   SRCPARAM L0002497          0.0      4.25      4.65      3.95
   SRCPARAM L0002498          0.0      4.25      4.65      3.95
   SRCPARAM L0002499          0.0      4.25      4.65      3.95
   SRCPARAM L0002500          0.0      4.25      4.65      3.95
   SRCPARAM L0002501          0.0      4.25      4.65      3.95
   SRCPARAM L0002502          0.0      4.25      4.65      3.95
   SRCPARAM L0002503          0.0      4.25      4.65      3.95
   SRCPARAM L0002504          0.0      4.25      4.65      3.95
** ------------------------------------------------------------------
** LINE VOLUME Source ID = NRD2
   SRCPARAM L0002505     0.0000004098      3.40      5.12      3.16
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SRCPARAM L0002506     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002507     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002508     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002509     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002510     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002511     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002512     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002513     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002514     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002515     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002516     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002517     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002518     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002519     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002520     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002521     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002522     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002523     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002524     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002525     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002526     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002527     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002528     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002529     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002530     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002531     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002532     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002533     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002534     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002535     0.0000004098      3.40      5.12      3.16
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SRCPARAM L0002537     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002538     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002539     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002540     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002541     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002542     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002543     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002544     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002545     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002546     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002547     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002548     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002549     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002550     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002551     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002552     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002553     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002554     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002555     0.0000004098      3.40      5.12      3.16
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SRCPARAM L0002556     0.0000004098      3.40      5.12      3.16
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SRCPARAM L0002558     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002559     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002560     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002561     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002562     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002563     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002564     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002565     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002566     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002567     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002568     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002569     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002570     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002571     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002572     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002573     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002574     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002575     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002576     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002577     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002578     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002579     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002580     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002581     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002582     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002583     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002584     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002585     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002586     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002587     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002588     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002589     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002590     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002591     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002592     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002593     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002594     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002595     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002596     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002597     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002598     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002599     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002600     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002601     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002602     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002603     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002604     0.0000004098      3.40      5.12      3.16
SRCPARAM L0002605     0.0000004098      3.40      5.12      3.16
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   SRCPARAM L0002606     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002607     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002608     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002609     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002610     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002611     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002612     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002613     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002614     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002615     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002616     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002617     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002618     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002619     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002620     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002621     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002622     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002623     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002624     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002625     0.0000004098      3.40      5.12      3.16
   SRCPARAM L0002626     0.0000004098      3.40      5.12      3.16
** ------------------------------------------------------------------
** LINE VOLUME Source ID = NRD3
   SRCPARAM L0002627           0.0      4.25      4.65      3.95
   SRCPARAM L0002628           0.0      4.25      4.65      3.95
   SRCPARAM L0002629           0.0      4.25      4.65      3.95
   SRCPARAM L0002630           0.0      4.25      4.65      3.95
   SRCPARAM L0002631           0.0      4.25      4.65      3.95
   SRCPARAM L0002632           0.0      4.25      4.65      3.95
   SRCPARAM L0002633           0.0      4.25      4.65      3.95
   SRCPARAM L0002634           0.0      4.25      4.65      3.95
   SRCPARAM L0002635           0.0      4.25      4.65      3.95
   SRCPARAM L0002636           0.0      4.25      4.65      3.95
   SRCPARAM L0002637           0.0      4.25      4.65      3.95
   SRCPARAM L0002638           0.0      4.25      4.65      3.95
   SRCPARAM L0002639           0.0      4.25      4.65      3.95
   SRCPARAM L0002640           0.0      4.25      4.65      3.95
   SRCPARAM L0002641           0.0      4.25      4.65      3.95
   SRCPARAM L0002642           0.0      4.25      4.65      3.95
   SRCPARAM L0002643           0.0      4.25      4.65      3.95
   SRCPARAM L0002644           0.0      4.25      4.65      3.95
   SRCPARAM L0002645           0.0      4.25      4.65      3.95
   SRCPARAM L0002646           0.0      4.25      4.65      3.95
   SRCPARAM L0002647           0.0      4.25      4.65      3.95
   SRCPARAM L0002648           0.0      4.25      4.65      3.95
   SRCPARAM L0002649           0.0      4.25      4.65      3.95
   SRCPARAM L0002650           0.0      4.25      4.65      3.95
   SRCPARAM L0002651           0.0      4.25      4.65      3.95
   SRCPARAM L0002652           0.0      4.25      4.65      3.95
   SRCPARAM L0002653           0.0      4.25      4.65      3.95
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SRCPARAM L0002654          0.0      4.25      4.65      3.95
SRCPARAM L0002655          0.0      4.25      4.65      3.95
SRCPARAM L0002656          0.0      4.25      4.65      3.95
SRCPARAM L0002657          0.0      4.25      4.65      3.95
SRCPARAM L0002658          0.0      4.25      4.65      3.95
SRCPARAM L0002659          0.0      4.25      4.65      3.95
SRCPARAM L0002660          0.0      4.25      4.65      3.95
SRCPARAM L0002661          0.0      4.25      4.65      3.95
SRCPARAM L0002662          0.0      4.25      4.65      3.95
SRCPARAM L0002663          0.0      4.25      4.65      3.95
SRCPARAM L0002664          0.0      4.25      4.65      3.95
SRCPARAM L0002665          0.0      4.25      4.65      3.95
SRCPARAM L0002666          0.0      4.25      4.65      3.95
SRCPARAM L0002667          0.0      4.25      4.65      3.95
SRCPARAM L0002668          0.0      4.25      4.65      3.95
SRCPARAM L0002669          0.0      4.25      4.65      3.95
SRCPARAM L0002670          0.0      4.25      4.65      3.95
SRCPARAM L0002671          0.0      4.25      4.65      3.95
SRCPARAM L0002672          0.0      4.25      4.65      3.95
SRCPARAM L0002673          0.0      4.25      4.65      3.95
SRCPARAM L0002674          0.0      4.25      4.65      3.95
SRCPARAM L0002675          0.0      4.25      4.65      3.95
SRCPARAM L0002676          0.0      4.25      4.65      3.95
SRCPARAM L0002677          0.0      4.25      4.65      3.95
SRCPARAM L0002678          0.0      4.25      4.65      3.95
SRCPARAM L0002679          0.0      4.25      4.65      3.95
SRCPARAM L0002680          0.0      4.25      4.65      3.95
SRCPARAM L0002681          0.0      4.25      4.65      3.95
SRCPARAM L0002682          0.0      4.25      4.65      3.95
SRCPARAM L0002683          0.0      4.25      4.65      3.95
SRCPARAM L0002684          0.0      4.25      4.65      3.95
SRCPARAM L0002685          0.0      4.25      4.65      3.95
SRCPARAM L0002686          0.0      4.25      4.65      3.95
SRCPARAM L0002687          0.0      4.25      4.65      3.95
SRCPARAM L0002688          0.0      4.25      4.65      3.95
SRCPARAM L0002689          0.0      4.25      4.65      3.95
SRCPARAM L0002690          0.0      4.25      4.65      3.95
SRCPARAM L0002691          0.0      4.25      4.65      3.95
SRCPARAM L0002692          0.0      4.25      4.65      3.95
SRCPARAM L0002693          0.0      4.25      4.65      3.95
SRCPARAM L0002694          0.0      4.25      4.65      3.95
SRCPARAM L0002695          0.0      4.25      4.65      3.95
SRCPARAM L0002696          0.0      4.25      4.65      3.95
SRCPARAM L0002697          0.0      4.25      4.65      3.95
SRCPARAM L0002698          0.0      4.25      4.65      3.95
SRCPARAM L0002699          0.0      4.25      4.65      3.95
SRCPARAM L0002700          0.0      4.25      4.65      3.95
SRCPARAM L0002701          0.0      4.25      4.65      3.95
SRCPARAM L0002702          0.0      4.25      4.65      3.95
SRCPARAM L0002703          0.0      4.25      4.65      3.95
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SRCPARAM L0002704          0.0      4.25      4.65      3.95
SRCPARAM L0002705          0.0      4.25      4.65      3.95
SRCPARAM L0002706          0.0      4.25      4.65      3.95
SRCPARAM L0002707          0.0      4.25      4.65      3.95
SRCPARAM L0002708          0.0      4.25      4.65      3.95
SRCPARAM L0002709          0.0      4.25      4.65      3.95
SRCPARAM L0002710          0.0      4.25      4.65      3.95
SRCPARAM L0002711          0.0      4.25      4.65      3.95
SRCPARAM L0002712          0.0      4.25      4.65      3.95
SRCPARAM L0002713          0.0      4.25      4.65      3.95
SRCPARAM L0002714          0.0      4.25      4.65      3.95
SRCPARAM L0002715          0.0      4.25      4.65      3.95
SRCPARAM L0002716          0.0      4.25      4.65      3.95
SRCPARAM L0002717          0.0      4.25      4.65      3.95
SRCPARAM L0002718          0.0      4.25      4.65      3.95
SRCPARAM L0002719          0.0      4.25      4.65      3.95
SRCPARAM L0002720          0.0      4.25      4.65      3.95
SRCPARAM L0002721          0.0      4.25      4.65      3.95
SRCPARAM L0002722          0.0      4.25      4.65      3.95
SRCPARAM L0002723          0.0      4.25      4.65      3.95
SRCPARAM L0002724          0.0      4.25      4.65      3.95
SRCPARAM L0002725          0.0      4.25      4.65      3.95
SRCPARAM L0002726          0.0      4.25      4.65      3.95
SRCPARAM L0002727          0.0      4.25      4.65      3.95
SRCPARAM L0002728          0.0      4.25      4.65      3.95
SRCPARAM L0002729          0.0      4.25      4.65      3.95
SRCPARAM L0002730          0.0      4.25      4.65      3.95
SRCPARAM L0002731          0.0      4.25      4.65      3.95
SRCPARAM L0002732          0.0      4.25      4.65      3.95
SRCPARAM L0002733          0.0      4.25      4.65      3.95
SRCPARAM L0002734          0.0      4.25      4.65      3.95
SRCPARAM L0002735          0.0      4.25      4.65      3.95
SRCPARAM L0002736          0.0      4.25      4.65      3.95
SRCPARAM L0002737          0.0      4.25      4.65      3.95
SRCPARAM L0002738          0.0      4.25      4.65      3.95
SRCPARAM L0002739          0.0      4.25      4.65      3.95
SRCPARAM L0002740          0.0      4.25      4.65      3.95
SRCPARAM L0002741          0.0      4.25      4.65      3.95
SRCPARAM L0002742          0.0      4.25      4.65      3.95
SRCPARAM L0002743          0.0      4.25      4.65      3.95
SRCPARAM L0002744          0.0      4.25      4.65      3.95
SRCPARAM L0002745          0.0      4.25      4.65      3.95
SRCPARAM L0002746          0.0      4.25      4.65      3.95
SRCPARAM L0002747          0.0      4.25      4.65      3.95
SRCPARAM L0002748          0.0      4.25      4.65      3.95
SRCPARAM L0002749          0.0      4.25      4.65      3.95
SRCPARAM L0002750          0.0      4.25      4.65      3.95
SRCPARAM L0002751          0.0      4.25      4.65      3.95
SRCPARAM L0002752          0.0      4.25      4.65      3.95
SRCPARAM L0002753          0.0      4.25      4.65      3.95
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SRCPARAM L0002754          0.0      4.25      4.65      3.95
SRCPARAM L0002755          0.0      4.25      4.65      3.95
SRCPARAM L0002756          0.0      4.25      4.65      3.95
SRCPARAM L0002757          0.0      4.25      4.65      3.95
SRCPARAM L0002758          0.0      4.25      4.65      3.95
SRCPARAM L0002759          0.0      4.25      4.65      3.95
SRCPARAM L0002760          0.0      4.25      4.65      3.95
SRCPARAM L0002761          0.0      4.25      4.65      3.95
SRCPARAM L0002762          0.0      4.25      4.65      3.95
SRCPARAM L0002763          0.0      4.25      4.65      3.95
SRCPARAM L0002764          0.0      4.25      4.65      3.95
SRCPARAM L0002765          0.0      4.25      4.65      3.95
SRCPARAM L0002766          0.0      4.25      4.65      3.95
SRCPARAM L0002767          0.0      4.25      4.65      3.95
SRCPARAM L0002768          0.0      4.25      4.65      3.95
SRCPARAM L0002769          0.0      4.25      4.65      3.95
SRCPARAM L0002770          0.0      4.25      4.65      3.95
SRCPARAM L0002771          0.0      4.25      4.65      3.95
SRCPARAM L0002772          0.0      4.25      4.65      3.95
SRCPARAM L0002773          0.0      4.25      4.65      3.95
SRCPARAM L0002774          0.0      4.25      4.65      3.95
SRCPARAM L0002775          0.0      4.25      4.65      3.95
SRCPARAM L0002776          0.0      4.25      4.65      3.95
SRCPARAM L0002777          0.0      4.25      4.65      3.95
SRCPARAM L0002778          0.0      4.25      4.65      3.95
SRCPARAM L0002779          0.0      4.25      4.65      3.95
SRCPARAM L0002780          0.0      4.25      4.65      3.95
SRCPARAM L0002781          0.0      4.25      4.65      3.95
SRCPARAM L0002782          0.0      4.25      4.65      3.95
SRCPARAM L0002783          0.0      4.25      4.65      3.95
SRCPARAM L0002784          0.0      4.25      4.65      3.95
SRCPARAM L0002785          0.0      4.25      4.65      3.95
SRCPARAM L0002786          0.0      4.25      4.65      3.95
SRCPARAM L0002787          0.0      4.25      4.65      3.95
SRCPARAM L0002788          0.0      4.25      4.65      3.95
SRCPARAM L0002789          0.0      4.25      4.65      3.95
SRCPARAM L0002790          0.0      4.25      4.65      3.95
SRCPARAM L0002791          0.0      4.25      4.65      3.95
SRCPARAM L0002792          0.0      4.25      4.65      3.95
SRCPARAM L0002793          0.0      4.25      4.65      3.95
SRCPARAM L0002794          0.0      4.25      4.65      3.95
SRCPARAM L0002795          0.0      4.25      4.65      3.95
SRCPARAM L0002796          0.0      4.25      4.65      3.95
SRCPARAM L0002797          0.0      4.25      4.65      3.95
SRCPARAM L0002798          0.0      4.25      4.65      3.95
SRCPARAM L0002799          0.0      4.25      4.65      3.95
SRCPARAM L0002800          0.0      4.25      4.65      3.95
SRCPARAM L0002801          0.0      4.25      4.65      3.95
SRCPARAM L0002802          0.0      4.25      4.65      3.95
SRCPARAM L0002803          0.0      4.25      4.65      3.95
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   SRCPARAM L0002804          0.0      4.25      4.65      3.95
   SRCPARAM L0002805          0.0      4.25      4.65      3.95
   SRCPARAM L0002806          0.0      4.25      4.65      3.95
   SRCPARAM L0002807          0.0      4.25      4.65      3.95
   SRCPARAM L0002808          0.0      4.25      4.65      3.95
   SRCPARAM L0002809          0.0      4.25      4.65      3.95
   SRCPARAM L0002810          0.0      4.25      4.65      3.95
   SRCPARAM L0002811          0.0      4.25      4.65      3.95
   SRCPARAM L0002812          0.0      4.25      4.65      3.95
   SRCPARAM L0002813          0.0      4.25      4.65      3.95
   SRCPARAM L0002814          0.0      4.25      4.65      3.95
   SRCPARAM L0002815          0.0      4.25      4.65      3.95
   SRCPARAM L0002816          0.0      4.25      4.65      3.95
   SRCPARAM L0002817          0.0      4.25      4.65      3.95
   SRCPARAM L0002818          0.0      4.25      4.65      3.95
   SRCPARAM L0002819          0.0      4.25      4.65      3.95
   SRCPARAM L0002820          0.0      4.25      4.65      3.95
   SRCPARAM L0002821          0.0      4.25      4.65      3.95
   SRCPARAM L0002822          0.0      4.25      4.65      3.95
   SRCPARAM L0002823          0.0      4.25      4.65      3.95
   SRCPARAM L0002824          0.0      4.25      4.65      3.95
   SRCPARAM L0002825          0.0      4.25      4.65      3.95
   SRCPARAM L0002826          0.0      4.25      4.65      3.95
   SRCPARAM L0002827          0.0      4.25      4.65      3.95
   SRCPARAM L0002828          0.0      4.25      4.65      3.95
   SRCPARAM L0002829          0.0      4.25      4.65      3.95
   SRCPARAM L0002830          0.0      4.25      4.65      3.95
   SRCPARAM L0002831          0.0      4.25      4.65      3.95
   SRCPARAM L0002832          0.0      4.25      4.65      3.95
   SRCPARAM L0002833          0.0      4.25      4.65      3.95
   SRCPARAM L0002834          0.0      4.25      4.65      3.95
   SRCPARAM L0002835          0.0      4.25      4.65      3.95
   SRCPARAM L0002836          0.0      4.25      4.65      3.95
   SRCPARAM L0002837          0.0      4.25      4.65      3.95
   SRCPARAM L0002838          0.0      4.25      4.65      3.95
   SRCPARAM L0002839          0.0      4.25      4.65      3.95
   SRCPARAM L0002840          0.0      4.25      4.65      3.95
   SRCPARAM L0002841          0.0      4.25      4.65      3.95
   SRCPARAM L0002842          0.0      4.25      4.65      3.95
   SRCPARAM L0002843          0.0      4.25      4.65      3.95
   SRCPARAM L0002844          0.0      4.25      4.65      3.95
   SRCPARAM L0002845          0.0      4.25      4.65      3.95
   SRCPARAM L0002846          0.0      4.25      4.65      3.95
   SRCPARAM L0002847          0.0      4.25      4.65      3.95
   SRCPARAM L0002848          0.0      4.25      4.65      3.95
   SRCPARAM L0002849          0.0      4.25      4.65      3.95
** ------------------------------------------------------------------
** LINE VOLUME Source ID = SRD1
   SRCPARAM L0002850     0.000006061      4.25      4.65      3.95
   SRCPARAM L0002851     0.000006061      4.25      4.65      3.95
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SRCPARAM L0002852     0.000006061      4.25      4.65      3.95
SRCPARAM L0002853     0.000006061      4.25      4.65      3.95
SRCPARAM L0002854     0.000006061      4.25      4.65      3.95
SRCPARAM L0002855     0.000006061      4.25      4.65      3.95
SRCPARAM L0002856     0.000006061      4.25      4.65      3.95
SRCPARAM L0002857     0.000006061      4.25      4.65      3.95
SRCPARAM L0002858     0.000006061      4.25      4.65      3.95
SRCPARAM L0002859     0.000006061      4.25      4.65      3.95
SRCPARAM L0002860     0.000006061      4.25      4.65      3.95
SRCPARAM L0002861     0.000006061      4.25      4.65      3.95
SRCPARAM L0002862     0.000006061      4.25      4.65      3.95
SRCPARAM L0002863     0.000006061      4.25      4.65      3.95
SRCPARAM L0002864     0.000006061      4.25      4.65      3.95
SRCPARAM L0002865     0.000006061      4.25      4.65      3.95
SRCPARAM L0002866     0.000006061      4.25      4.65      3.95
SRCPARAM L0002867     0.000006061      4.25      4.65      3.95
SRCPARAM L0002868     0.000006061      4.25      4.65      3.95
SRCPARAM L0002869     0.000006061      4.25      4.65      3.95
SRCPARAM L0002870     0.000006061      4.25      4.65      3.95
SRCPARAM L0002871     0.000006061      4.25      4.65      3.95
SRCPARAM L0002872     0.000006061      4.25      4.65      3.95
SRCPARAM L0002873     0.000006061      4.25      4.65      3.95
SRCPARAM L0002874     0.000006061      4.25      4.65      3.95
SRCPARAM L0002875     0.000006061      4.25      4.65      3.95
SRCPARAM L0002876     0.000006061      4.25      4.65      3.95
SRCPARAM L0002877     0.000006061      4.25      4.65      3.95
SRCPARAM L0002878     0.000006061      4.25      4.65      3.95
SRCPARAM L0002879     0.000006061      4.25      4.65      3.95
SRCPARAM L0002880     0.000006061      4.25      4.65      3.95
SRCPARAM L0002881     0.000006061      4.25      4.65      3.95
SRCPARAM L0002882     0.000006061      4.25      4.65      3.95
SRCPARAM L0002883     0.000006061      4.25      4.65      3.95
SRCPARAM L0002884     0.000006061      4.25      4.65      3.95
SRCPARAM L0002885     0.000006061      4.25      4.65      3.95
SRCPARAM L0002886     0.000006061      4.25      4.65      3.95
SRCPARAM L0002887     0.000006061      4.25      4.65      3.95
SRCPARAM L0002888     0.000006061      4.25      4.65      3.95
SRCPARAM L0002889     0.000006061      4.25      4.65      3.95
SRCPARAM L0002890     0.000006061      4.25      4.65      3.95
SRCPARAM L0002891     0.000006061      4.25      4.65      3.95
SRCPARAM L0002892     0.000006061      4.25      4.65      3.95
SRCPARAM L0002893     0.000006061      4.25      4.65      3.95
SRCPARAM L0002894     0.000006061      4.25      4.65      3.95
SRCPARAM L0002895     0.000006061      4.25      4.65      3.95
SRCPARAM L0002896     0.000006061      4.25      4.65      3.95
SRCPARAM L0002897     0.000006061      4.25      4.65      3.95
SRCPARAM L0002898     0.000006061      4.25      4.65      3.95
SRCPARAM L0002899     0.000006061      4.25      4.65      3.95
SRCPARAM L0002900     0.000006061      4.25      4.65      3.95
SRCPARAM L0002901     0.000006061      4.25      4.65      3.95
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SRCPARAM L0002902     0.000006061      4.25      4.65      3.95
SRCPARAM L0002903     0.000006061      4.25      4.65      3.95
SRCPARAM L0002904     0.000006061      4.25      4.65      3.95
SRCPARAM L0002905     0.000006061      4.25      4.65      3.95
SRCPARAM L0002906     0.000006061      4.25      4.65      3.95
SRCPARAM L0002907     0.000006061      4.25      4.65      3.95
SRCPARAM L0002908     0.000006061      4.25      4.65      3.95
SRCPARAM L0002909     0.000006061      4.25      4.65      3.95
SRCPARAM L0002910     0.000006061      4.25      4.65      3.95
SRCPARAM L0002911     0.000006061      4.25      4.65      3.95
SRCPARAM L0002912     0.000006061      4.25      4.65      3.95
SRCPARAM L0002913     0.000006061      4.25      4.65      3.95
SRCPARAM L0002914     0.000006061      4.25      4.65      3.95
SRCPARAM L0002915     0.000006061      4.25      4.65      3.95
SRCPARAM L0002916     0.000006061      4.25      4.65      3.95
SRCPARAM L0002917     0.000006061      4.25      4.65      3.95
SRCPARAM L0002918     0.000006061      4.25      4.65      3.95
SRCPARAM L0002919     0.000006061      4.25      4.65      3.95
SRCPARAM L0002920     0.000006061      4.25      4.65      3.95
SRCPARAM L0002921     0.000006061      4.25      4.65      3.95
SRCPARAM L0002922     0.000006061      4.25      4.65      3.95
SRCPARAM L0002923     0.000006061      4.25      4.65      3.95
SRCPARAM L0002924     0.000006061      4.25      4.65      3.95
SRCPARAM L0002925     0.000006061      4.25      4.65      3.95
SRCPARAM L0002926     0.000006061      4.25      4.65      3.95
SRCPARAM L0002927     0.000006061      4.25      4.65      3.95
SRCPARAM L0002928     0.000006061      4.25      4.65      3.95
SRCPARAM L0002929     0.000006061      4.25      4.65      3.95
SRCPARAM L0002930     0.000006061      4.25      4.65      3.95
SRCPARAM L0002931     0.000006061      4.25      4.65      3.95
SRCPARAM L0002932     0.000006061      4.25      4.65      3.95
SRCPARAM L0002933     0.000006061      4.25      4.65      3.95
SRCPARAM L0002934     0.000006061      4.25      4.65      3.95
SRCPARAM L0002935     0.000006061      4.25      4.65      3.95
SRCPARAM L0002936     0.000006061      4.25      4.65      3.95
SRCPARAM L0002937     0.000006061      4.25      4.65      3.95
SRCPARAM L0002938     0.000006061      4.25      4.65      3.95
SRCPARAM L0002939     0.000006061      4.25      4.65      3.95
SRCPARAM L0002940     0.000006061      4.25      4.65      3.95
SRCPARAM L0002941     0.000006061      4.25      4.65      3.95
SRCPARAM L0002942     0.000006061      4.25      4.65      3.95
SRCPARAM L0002943     0.000006061      4.25      4.65      3.95
SRCPARAM L0002944     0.000006061      4.25      4.65      3.95
SRCPARAM L0002945     0.000006061      4.25      4.65      3.95
SRCPARAM L0002946     0.000006061      4.25      4.65      3.95
SRCPARAM L0002947     0.000006061      4.25      4.65      3.95
SRCPARAM L0002948     0.000006061      4.25      4.65      3.95
SRCPARAM L0002949     0.000006061      4.25      4.65      3.95
SRCPARAM L0002950     0.000006061      4.25      4.65      3.95
SRCPARAM L0002951     0.000006061      4.25      4.65      3.95
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SRCPARAM L0002952     0.000006061      4.25      4.65      3.95
SRCPARAM L0002953     0.000006061      4.25      4.65      3.95
SRCPARAM L0002954     0.000006061      4.25      4.65      3.95
SRCPARAM L0002955     0.000006061      4.25      4.65      3.95
SRCPARAM L0002956     0.000006061      4.25      4.65      3.95
SRCPARAM L0002957     0.000006061      4.25      4.65      3.95
SRCPARAM L0002958     0.000006061      4.25      4.65      3.95
SRCPARAM L0002959     0.000006061      4.25      4.65      3.95
SRCPARAM L0002960     0.000006061      4.25      4.65      3.95
SRCPARAM L0002961     0.000006061      4.25      4.65      3.95
SRCPARAM L0002962     0.000006061      4.25      4.65      3.95
SRCPARAM L0002963     0.000006061      4.25      4.65      3.95
SRCPARAM L0002964     0.000006061      4.25      4.65      3.95
SRCPARAM L0002965     0.000006061      4.25      4.65      3.95
SRCPARAM L0002966     0.000006061      4.25      4.65      3.95
SRCPARAM L0002967     0.000006061      4.25      4.65      3.95
SRCPARAM L0002968     0.000006061      4.25      4.65      3.95
SRCPARAM L0002969     0.000006061      4.25      4.65      3.95
SRCPARAM L0002970     0.000006061      4.25      4.65      3.95
SRCPARAM L0002971     0.000006061      4.25      4.65      3.95
SRCPARAM L0002972     0.000006061      4.25      4.65      3.95
SRCPARAM L0002973     0.000006061      4.25      4.65      3.95
SRCPARAM L0002974     0.000006061      4.25      4.65      3.95
SRCPARAM L0002975     0.000006061      4.25      4.65      3.95
SRCPARAM L0002976     0.000006061      4.25      4.65      3.95
SRCPARAM L0002977     0.000006061      4.25      4.65      3.95
SRCPARAM L0002978     0.000006061      4.25      4.65      3.95
SRCPARAM L0002979     0.000006061      4.25      4.65      3.95
SRCPARAM L0002980     0.000006061      4.25      4.65      3.95
SRCPARAM L0002981     0.000006061      4.25      4.65      3.95
SRCPARAM L0002982     0.000006061      4.25      4.65      3.95
SRCPARAM L0002983     0.000006061      4.25      4.65      3.95
SRCPARAM L0002984     0.000006061      4.25      4.65      3.95
SRCPARAM L0002985     0.000006061      4.25      4.65      3.95
SRCPARAM L0002986     0.000006061      4.25      4.65      3.95
SRCPARAM L0002987     0.000006061      4.25      4.65      3.95
SRCPARAM L0002988     0.000006061      4.25      4.65      3.95
SRCPARAM L0002989     0.000006061      4.25      4.65      3.95
SRCPARAM L0002990     0.000006061      4.25      4.65      3.95
SRCPARAM L0002991     0.000006061      4.25      4.65      3.95
SRCPARAM L0002992     0.000006061      4.25      4.65      3.95
SRCPARAM L0002993     0.000006061      4.25      4.65      3.95
SRCPARAM L0002994     0.000006061      4.25      4.65      3.95
SRCPARAM L0002995     0.000006061      4.25      4.65      3.95
SRCPARAM L0002996     0.000006061      4.25      4.65      3.95
SRCPARAM L0002997     0.000006061      4.25      4.65      3.95
SRCPARAM L0002998     0.000006061      4.25      4.65      3.95
SRCPARAM L0002999     0.000006061      4.25      4.65      3.95
SRCPARAM L0003000     0.000006061      4.25      4.65      3.95
SRCPARAM L0003001     0.000006061      4.25      4.65      3.95
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   SRCPARAM L0003003     0.000006061      4.25      4.65      3.95
   SRCPARAM L0003004     0.000006061      4.25      4.65      3.95
   SRCPARAM L0003005     0.000006061      4.25      4.65      3.95
   SRCPARAM L0003006     0.000006061      4.25      4.65      3.95
   SRCPARAM L0003007     0.000006061      4.25      4.65      3.95
   SRCPARAM L0003008     0.000006061      4.25      4.65      3.95
   SRCPARAM L0003009     0.000006061      4.25      4.65      3.95
   SRCPARAM L0003010     0.000006061      4.25      4.65      3.95
   SRCPARAM L0003011     0.000006061      4.25      4.65      3.95
   SRCPARAM L0003012     0.000006061      4.25      4.65      3.95
   SRCPARAM L0003013     0.000006061      4.25      4.65      3.95
   SRCPARAM L0003014     0.000006061      4.25      4.65      3.95
** ------------------------------------------------------------------
   SRCPARAM SPILE              0.0     1.000        24
   AREAVERT SPILE        256392.826 4090627.404 256299.163 4090697.866
   AREAVERT SPILE        256191.750 4090755.439 256068.011 4090782.078
   AREAVERT SPILE        255998.408 4090717.630 256015.594 4090546.630
   AREAVERT SPILE        256101.524 4090442.655 256235.575 4090404.846
   AREAVERT SPILE        256319.786 4090522.570 256397.123 4090616.233
   AREAVERT SPILE        256471.022 4090567.253 256367.906 4090398.831
   AREAVERT SPILE        256251.901 4090352.429 256086.916 4090379.926
   AREAVERT SPILE        255994.971 4090471.871 255907.323 4090529.444
   AREAVERT SPILE        255888.418 4090690.992 255956.303 4090820.746
   AREAVERT SPILE        256047.388 4090871.445 256208.936 4090852.540
   AREAVERT SPILE        256367.047 4090767.470 256467.585 4090678.962
   AREAVERT SPILE        256508.831 4090610.218 256478.756 4090574.128
   SRCPARAM SPLNT              0.0     1.000    29.667     1.000
   SRCPARAM NASTK            0.214     9.144   400.000        20       1.3
   SRCPARAM NAPLNT           0.001     1.000    10.900     1.000
   SRCPARAM NMPLNT             0.0     1.000     5.637     1.000
   SRCPARAM NPLNT              0.0     1.000    49.235     1.000
   SRCPARAM NPILE              0.0     1.000        11
   AREAVERT NPILE        256496.869 4093919.057 256616.926 4093910.549
   AREAVERT NPILE        256718.077 4093856.665 256764.399 4093816.016
   AREAVERT NPILE        256782.360 4093751.733 256777.633 4093684.614
   AREAVERT NPILE        256734.148 4093663.817 256621.653 4093687.450
   AREAVERT NPILE        256558.316 4093736.607 256491.197 4093808.453
   AREAVERT NPILE        256469.454 4093903.932
   SRCPARAM NMINE1             0.0     1.000    56.240     1.000
   SRCPARAM NMINE2             0.0     1.000    56.240     1.000
   SRCPARAM NMINE3             0.0     1.000    56.240     1.000
   SRCPARAM NMINE4             0.0     1.000    56.240     1.000
   SRCPARAM NMINE5             0.0     1.000    56.240     1.000
   SRCPARAM NMINE6             0.0     1.000    56.240     1.000
   SRCPARAM NMINE7             0.0     1.000    56.240     1.000
   SRCPARAM NMINE8        0.000109     1.000    56.240     1.000
   SRCPARAM NMINE9        0.000109     1.000    56.240     1.000
   SRCPARAM SRMPT              0.0     4.572    16.916     1.000
   SRCPARAM SAPLT              0.0     4.572    24.691     1.000
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   SRCPARAM SASTK            0.214     9.144   399.983        20       1.3
   SRCPARAM SMINE              0.0     1.000    56.240     1.000
SO FINISHED
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**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED "SO2hr (1).rou"
RE FINISHED
**
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST 4TH 8TH
   RECTABLE 1 1ST 4TH 8TH
** Auto-Generated Plotfiles
   PLOTFILE 1 NAPLNT 1ST NO2HR.AD\01H1G001.PLT 31
   PLOTFILE 1 NASTK 1ST NO2HR.AD\01H1G002.PLT 32
   PLOTFILE 1 NMINE1 1ST NO2HR.AD\01H1G003.PLT 33
   PLOTFILE 1 NMINE2 1ST NO2HR.AD\01H1G004.PLT 34
   PLOTFILE 1 NMINE3 1ST NO2HR.AD\01H1G005.PLT 35
   PLOTFILE 1 NMINE4 1ST NO2HR.AD\01H1G006.PLT 36
   PLOTFILE 1 NMINE5 1ST NO2HR.AD\01H1G007.PLT 37
   PLOTFILE 1 NMINE6 1ST NO2HR.AD\01H1G008.PLT 38
   PLOTFILE 1 NMINE7 1ST NO2HR.AD\01H1G009.PLT 39
   PLOTFILE 1 NMINE8 1ST NO2HR.AD\01H1G010.PLT 40
   PLOTFILE 1 NMINE9 1ST NO2HR.AD\01H1G011.PLT 41
   PLOTFILE 1 NMPLNT 1ST NO2HR.AD\01H1G012.PLT 42
   PLOTFILE 1 NPILE 1ST NO2HR.AD\01H1G013.PLT 43
   PLOTFILE 1 NPLNT 1ST NO2HR.AD\01H1G014.PLT 44
   PLOTFILE 1 NRD1 1ST NO2HR.AD\01H1G015.PLT 45
   PLOTFILE 1 NRD2 1ST NO2HR.AD\01H1G016.PLT 46
   PLOTFILE 1 NRD3 1ST NO2HR.AD\01H1G017.PLT 47
   PLOTFILE 1 NSNK 1ST NO2HR.AD\01H1G018.PLT 48
   PLOTFILE 1 SPILE 1ST NO2HR.AD\01H1G019.PLT 49
   PLOTFILE 1 SPLNT 1ST NO2HR.AD\01H1G020.PLT 50
   PLOTFILE 1 SRD1 1ST NO2HR.AD\01H1G021.PLT 51
   PLOTFILE 1 SSNK 1ST NO2HR.AD\01H1G022.PLT 52
   PLOTFILE 1 SAPLT 1ST NO2HR.AD\01H1G023.PLT 53
   PLOTFILE 1 SASTK 1ST NO2HR.AD\01H1G024.PLT 54
   PLOTFILE 1 SMINE 1ST NO2HR.AD\01H1G025.PLT 55
   PLOTFILE 1 SRMPT 1ST NO2HR.AD\01H1G026.PLT 56
   PLOTFILE 1 ALL 1ST NO2HR.AD\01H1GALL.PLT 57
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PLOTFILE 1 NORTH 1ST NO2HR.AD\01H1G027.PLT 58
PLOTFILE 1 SOUTH 1ST NO2HR.AD\01H1G028.PLT 59
PLOTFILE 1 POSITIVE 1ST NO2HR.AD\01H1G029.PLT 60
PLOTFILE 1 NEGATIVE 1ST NO2HR.AD\01H1G030.PLT 61
PLOTFILE 1 NAPLNT 4TH NO2HR.AD\01H4G001.PLT 62
PLOTFILE 1 NASTK 4TH NO2HR.AD\01H4G002.PLT 63
PLOTFILE 1 NMINE1 4TH NO2HR.AD\01H4G003.PLT 64
PLOTFILE 1 NMINE2 4TH NO2HR.AD\01H4G004.PLT 65
PLOTFILE 1 NMINE3 4TH NO2HR.AD\01H4G005.PLT 66
PLOTFILE 1 NMINE4 4TH NO2HR.AD\01H4G006.PLT 67
PLOTFILE 1 NMINE5 4TH NO2HR.AD\01H4G007.PLT 68
PLOTFILE 1 NMINE6 4TH NO2HR.AD\01H4G008.PLT 69
PLOTFILE 1 NMINE7 4TH NO2HR.AD\01H4G009.PLT 70
PLOTFILE 1 NMINE8 4TH NO2HR.AD\01H4G010.PLT 71
PLOTFILE 1 NMINE9 4TH NO2HR.AD\01H4G011.PLT 72
PLOTFILE 1 NMPLNT 4TH NO2HR.AD\01H4G012.PLT 73
PLOTFILE 1 NPILE 4TH NO2HR.AD\01H4G013.PLT 74
PLOTFILE 1 NPLNT 4TH NO2HR.AD\01H4G014.PLT 75
PLOTFILE 1 NRD1 4TH NO2HR.AD\01H4G015.PLT 76
PLOTFILE 1 NRD2 4TH NO2HR.AD\01H4G016.PLT 77
PLOTFILE 1 NRD3 4TH NO2HR.AD\01H4G017.PLT 78
PLOTFILE 1 NSNK 4TH NO2HR.AD\01H4G018.PLT 79
PLOTFILE 1 SPILE 4TH NO2HR.AD\01H4G019.PLT 80
PLOTFILE 1 SPLNT 4TH NO2HR.AD\01H4G020.PLT 81
PLOTFILE 1 SRD1 4TH NO2HR.AD\01H4G021.PLT 82
PLOTFILE 1 SSNK 4TH NO2HR.AD\01H4G022.PLT 83
PLOTFILE 1 SAPLT 4TH NO2HR.AD\01H4G023.PLT 84
PLOTFILE 1 SASTK 4TH NO2HR.AD\01H4G024.PLT 85
PLOTFILE 1 SMINE 4TH NO2HR.AD\01H4G025.PLT 86
PLOTFILE 1 SRMPT 4TH NO2HR.AD\01H4G026.PLT 87
PLOTFILE 1 ALL 4TH NO2HR.AD\01H4GALL.PLT 88
PLOTFILE 1 NORTH 4TH NO2HR.AD\01H4G027.PLT 89
PLOTFILE 1 SOUTH 4TH NO2HR.AD\01H4G028.PLT 90
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PLOTFILE 1 NAPLNT 8TH NO2HR.AD\01H8G001.PLT 93
PLOTFILE 1 NASTK 8TH NO2HR.AD\01H8G002.PLT 94
PLOTFILE 1 NMINE1 8TH NO2HR.AD\01H8G003.PLT 95
PLOTFILE 1 NMINE2 8TH NO2HR.AD\01H8G004.PLT 96
PLOTFILE 1 NMINE3 8TH NO2HR.AD\01H8G005.PLT 97
PLOTFILE 1 NMINE4 8TH NO2HR.AD\01H8G006.PLT 98
PLOTFILE 1 NMINE5 8TH NO2HR.AD\01H8G007.PLT 99
PLOTFILE 1 NMINE6 8TH NO2HR.AD\01H8G008.PLT 100
PLOTFILE 1 NMINE7 8TH NO2HR.AD\01H8G009.PLT 101
PLOTFILE 1 NMINE8 8TH NO2HR.AD\01H8G010.PLT 102
PLOTFILE 1 NMINE9 8TH NO2HR.AD\01H8G011.PLT 103
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PLOTFILE 1 NPILE 8TH NO2HR.AD\01H8G013.PLT 105
PLOTFILE 1 NPLNT 8TH NO2HR.AD\01H8G014.PLT 106
PLOTFILE 1 NRD1 8TH NO2HR.AD\01H8G015.PLT 107
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PLOTFILE 1 NRD3 8TH NO2HR.AD\01H8G017.PLT 109
PLOTFILE 1 NSNK 8TH NO2HR.AD\01H8G018.PLT 110
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PLOTFILE 1 SSNK 8TH NO2HR.AD\01H8G022.PLT 114
PLOTFILE 1 SAPLT 8TH NO2HR.AD\01H8G023.PLT 115
PLOTFILE 1 SASTK 8TH NO2HR.AD\01H8G024.PLT 116
PLOTFILE 1 SMINE 8TH NO2HR.AD\01H8G025.PLT 117
PLOTFILE 1 SRMPT 8TH NO2HR.AD\01H8G026.PLT 118
PLOTFILE 1 ALL 8TH NO2HR.AD\01H8GALL.PLT 119
PLOTFILE 1 NORTH 8TH NO2HR.AD\01H8G027.PLT 120
PLOTFILE 1 SOUTH 8TH NO2HR.AD\01H8G028.PLT 121
PLOTFILE 1 POSITIVE 8TH NO2HR.AD\01H8G029.PLT 122
PLOTFILE 1 NEGATIVE 8TH NO2HR.AD\01H8G030.PLT 123
MXDYBYYR NAPLNT NO2HR.AD\MXDYBYYR_NAPLNT_SO2.DAT 124
MXDYBYYR NASTK NO2HR.AD\MXDYBYYR_NASTK_SO2.DAT 125
MXDYBYYR NMINE1 NO2HR.AD\MXDYBYYR_NMINE1_SO2.DAT 126
MXDYBYYR NMINE2 NO2HR.AD\MXDYBYYR_NMINE2_SO2.DAT 127
MXDYBYYR NMINE3 NO2HR.AD\MXDYBYYR_NMINE3_SO2.DAT 128
MXDYBYYR NMINE4 NO2HR.AD\MXDYBYYR_NMINE4_SO2.DAT 129
MXDYBYYR NMINE5 NO2HR.AD\MXDYBYYR_NMINE5_SO2.DAT 130
MXDYBYYR NMINE6 NO2HR.AD\MXDYBYYR_NMINE6_SO2.DAT 131
MXDYBYYR NMINE7 NO2HR.AD\MXDYBYYR_NMINE7_SO2.DAT 132
MXDYBYYR NMINE8 NO2HR.AD\MXDYBYYR_NMINE8_SO2.DAT 133
MXDYBYYR NMINE9 NO2HR.AD\MXDYBYYR_NMINE9_SO2.DAT 134
MXDYBYYR NMPLNT NO2HR.AD\MXDYBYYR_NMPLNT_SO2.DAT 135
MXDYBYYR NPILE NO2HR.AD\MXDYBYYR_NPILE_SO2.DAT 136
MXDYBYYR NPLNT NO2HR.AD\MXDYBYYR_NPLNT_SO2.DAT 137
MXDYBYYR NRD1 NO2HR.AD\MXDYBYYR_NRD1_SO2.DAT 138
MXDYBYYR NRD2 NO2HR.AD\MXDYBYYR_NRD2_SO2.DAT 139
MXDYBYYR NRD3 NO2HR.AD\MXDYBYYR_NRD3_SO2.DAT 140
MXDYBYYR NSNK NO2HR.AD\MXDYBYYR_NSNK_SO2.DAT 141
MXDYBYYR SPILE NO2HR.AD\MXDYBYYR_SPILE_SO2.DAT 142
MXDYBYYR SPLNT NO2HR.AD\MXDYBYYR_SPLNT_SO2.DAT 143
MXDYBYYR SRD1 NO2HR.AD\MXDYBYYR_SRD1_SO2.DAT 144
MXDYBYYR SSNK NO2HR.AD\MXDYBYYR_SSNK_SO2.DAT 145
MXDYBYYR SAPLT NO2HR.AD\MXDYBYYR_SAPLT_SO2.DAT 146
MXDYBYYR SASTK NO2HR.AD\MXDYBYYR_SASTK_SO2.DAT 147
MXDYBYYR SMINE NO2HR.AD\MXDYBYYR_SMINE_SO2.DAT 148
MXDYBYYR SRMPT NO2HR.AD\MXDYBYYR_SRMPT_SO2.DAT 149
MXDYBYYR ALL NO2HR.AD\MXDYBYYR_ALL_SO2.DAT 150
MXDYBYYR NORTH NO2HR.AD\MXDYBYYR_NORTH_SO2.DAT 151
MXDYBYYR SOUTH NO2HR.AD\MXDYBYYR_SOUTH_SO2.DAT 152
MXDYBYYR POSITIVE NO2HR.AD\MXDYBYYR_POSITIVE_SO2.DAT 153
MXDYBYYR NEGATIVE NO2HR.AD\MXDYBYYR_NEGATIVE_SO2.DAT 154
MAXDAILY NAPLNT NO2HR.AD\MAXDAILY_NAPLNT_SO2.DAT 155
MAXDAILY NASTK NO2HR.AD\MAXDAILY_NASTK_SO2.DAT 156
MAXDAILY NMINE1 NO2HR.AD\MAXDAILY_NMINE1_SO2.DAT 157
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   MAXDAILY NMINE2 NO2HR.AD\MAXDAILY_NMINE2_SO2.DAT 158
   MAXDAILY NMINE3 NO2HR.AD\MAXDAILY_NMINE3_SO2.DAT 159
   MAXDAILY NMINE4 NO2HR.AD\MAXDAILY_NMINE4_SO2.DAT 160
   MAXDAILY NMINE5 NO2HR.AD\MAXDAILY_NMINE5_SO2.DAT 161
   MAXDAILY NMINE6 NO2HR.AD\MAXDAILY_NMINE6_SO2.DAT 162
   MAXDAILY NMINE7 NO2HR.AD\MAXDAILY_NMINE7_SO2.DAT 163
   MAXDAILY NMINE8 NO2HR.AD\MAXDAILY_NMINE8_SO2.DAT 164
   MAXDAILY NMINE9 NO2HR.AD\MAXDAILY_NMINE9_SO2.DAT 165
   MAXDAILY NMPLNT NO2HR.AD\MAXDAILY_NMPLNT_SO2.DAT 166
   MAXDAILY NPILE NO2HR.AD\MAXDAILY_NPILE_SO2.DAT 167
   MAXDAILY NPLNT NO2HR.AD\MAXDAILY_NPLNT_SO2.DAT 168
   MAXDAILY NRD1 NO2HR.AD\MAXDAILY_NRD1_SO2.DAT 169
   MAXDAILY NRD2 NO2HR.AD\MAXDAILY_NRD2_SO2.DAT 170
   MAXDAILY NRD3 NO2HR.AD\MAXDAILY_NRD3_SO2.DAT 171
   MAXDAILY NSNK NO2HR.AD\MAXDAILY_NSNK_SO2.DAT 172
   MAXDAILY SPILE NO2HR.AD\MAXDAILY_SPILE_SO2.DAT 173
   MAXDAILY SPLNT NO2HR.AD\MAXDAILY_SPLNT_SO2.DAT 174
   MAXDAILY SRD1 NO2HR.AD\MAXDAILY_SRD1_SO2.DAT 175
   MAXDAILY SSNK NO2HR.AD\MAXDAILY_SSNK_SO2.DAT 176
   MAXDAILY SAPLT NO2HR.AD\MAXDAILY_SAPLT_SO2.DAT 177
   MAXDAILY SASTK NO2HR.AD\MAXDAILY_SASTK_SO2.DAT 178
   MAXDAILY SMINE NO2HR.AD\MAXDAILY_SMINE_SO2.DAT 179
   MAXDAILY SRMPT NO2HR.AD\MAXDAILY_SRMPT_SO2.DAT 180
   MAXDAILY ALL NO2HR.AD\MAXDAILY_ALL_SO2.DAT 181
   MAXDAILY NORTH NO2HR.AD\MAXDAILY_NORTH_SO2.DAT 182
   MAXDAILY SOUTH NO2HR.AD\MAXDAILY_SOUTH_SO2.DAT 183
   MAXDAILY POSITIVE NO2HR.AD\MAXDAILY_POSITIVE_SO2.DAT 184
   MAXDAILY NEGATIVE NO2HR.AD\MAXDAILY_NEGATIVE_SO2.DAT 185
   SUMMFILE NO2hr.sum
OU FINISHED
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************************************
** Project Parameters
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** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
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255221.52	4093641.19	9.96
255228.46	4093681.98	9.72
255198.45	4093422.82	9.42
255280.81	4093106.85	9.24
254878.59	4093586.17	9.18
255076.25	4093766.75	9.04
255267.4	4093139.96	9.03
254882.63	4093630.57	9.00
254932.51	4093878.67	8.85
254874.56	4093541.78	8.75
254890.06	4093674.28	8.74
255060.53	4093239.32	8.69
255044.57	4093571.09	8.58
254926.54	4093854.89	8.55
255217.33	4093080.85	8.51
255237.89	4093726.16	8.51
255066.66	4093721.72	8.50
255154.34	4093007.5	8.48
255032.47	4093437.91	8.46
255167.75	4092974.38	8.46
255033.73	4093305.55	8.45
255047.13	4093272.43	8.43
255307.61	4093040.61	8.38
255294.21	4093073.73	8.36
255029.59	4093396.85	8.35
257680.18	4093861.87	8.34
255048.61	4093615.48	8.26
255073.93	4093206.2	8.25
254897.48	4093717.99	8.25
255140.94	4093040.61	8.19

APPENDIX I4 SO2-ANNUAL
MODELING FILES

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**
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**
** AERMOD Input Produced by:
** AERMOD View Ver. 13.0.0
** Lakes Environmental Software Inc.
** Date: 1/13/2026
** File: C:\z_AERMOD\Rockfield\SO2_AA\SO2_AA (1).ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE Rockfield SO2 Annual Average
   MODELOPT DFAULT CONC
   AVERTIME ANNUAL
   POLLUTID SO2
   FLAGPOLE 1.00
   RUNORNOT RUN
   ERRORFIL NO2hr.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Parameters **
   SRCPARAM SSNK              0.0     0.000   133.356     1.000
   SRCPARAM NSNK              0.0     0.000   134.565     1.000
** LINE VOLUME Source ID = NRD1
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   SRCPARAM L0003016     0.0000001273      4.25      4.65      3.95
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   SRCPARAM L0003018     0.0000001273      4.25      4.65      3.95
   SRCPARAM L0003019     0.0000001273      4.25      4.65      3.95
   SRCPARAM L0003020     0.0000001273      4.25      4.65      3.95
   SRCPARAM L0003021     0.0000001273      4.25      4.65      3.95
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   SRCPARAM L0003023     0.0000001273      4.25      4.65      3.95
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   SRCPARAM L0003027     0.0000001273      4.25      4.65      3.95
   SRCPARAM L0003028     0.0000001273      4.25      4.65      3.95
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SRCPARAM L0003047     0.0000001273      4.25      4.65      3.95
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SRCPARAM L0003074     0.0000001273      4.25      4.65      3.95
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SRCPARAM L0003078     0.0000001273      4.25      4.65      3.95
SRCPARAM L0003079     0.0000001273      4.25      4.65      3.95
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** ------------------------------------------------------------------
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SRCPARAM L0003179     0.00000007377      3.40      5.12      3.16
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SRCPARAM L0003218     0.00000007377      3.40      5.12      3.16
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SRCPARAM L0003229     0.00000007377      3.40      5.12      3.16
SRCPARAM L0003230     0.00000007377      3.40      5.12      3.16
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   SRCPARAM L0003245     0.00000007377      3.40      5.12      3.16
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** ------------------------------------------------------------------
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SRCPARAM L0003562     0.0000007879      4.25      4.65      3.95
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SRCPARAM L0003567     0.0000007879      4.25      4.65      3.95
SRCPARAM L0003568     0.0000007879      4.25      4.65      3.95
SRCPARAM L0003569     0.0000007879      4.25      4.65      3.95
SRCPARAM L0003570     0.0000007879      4.25      4.65      3.95
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SRCPARAM L0003578     0.0000007879      4.25      4.65      3.95
SRCPARAM L0003579     0.0000007879      4.25      4.65      3.95
SRCPARAM L0003580     0.0000007879      4.25      4.65      3.95
SRCPARAM L0003581     0.0000007879      4.25      4.65      3.95
SRCPARAM L0003582     0.0000007879      4.25      4.65      3.95
SRCPARAM L0003583     0.0000007879      4.25      4.65      3.95
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SRCPARAM L0003587     0.0000007879      4.25      4.65      3.95
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SRCPARAM L0003619     0.0000007879      4.25      4.65      3.95
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   AREAVERT SPILE        256191.750 4090755.439 256068.011 4090782.078
   AREAVERT SPILE        255998.408 4090717.630 256015.594 4090546.630
   AREAVERT SPILE        256101.524 4090442.655 256235.575 4090404.846
   AREAVERT SPILE        256319.786 4090522.570 256397.123 4090616.233
   AREAVERT SPILE        256471.022 4090567.253 256367.906 4090398.831
   AREAVERT SPILE        256251.901 4090352.429 256086.916 4090379.926
   AREAVERT SPILE        255994.971 4090471.871 255907.323 4090529.444
   AREAVERT SPILE        255888.418 4090690.992 255956.303 4090820.746
   AREAVERT SPILE        256047.388 4090871.445 256208.936 4090852.540
   AREAVERT SPILE        256367.047 4090767.470 256467.585 4090678.962
   AREAVERT SPILE        256508.831 4090610.218 256478.756 4090574.128
   SRCPARAM SPLNT              0.0     1.000    29.667     1.000
   SRCPARAM NASTK           0.0246     9.144   400.000        20       1.3
   SRCPARAM NAPLNT         0.00008     1.000    10.900     1.000
   SRCPARAM NMPLNT             0.0     1.000     5.637     1.000
   SRCPARAM NPLNT              0.0     1.000    49.235     1.000
   SRCPARAM NPILE              0.0     1.000        11
   AREAVERT NPILE        256496.869 4093919.057 256616.926 4093910.549
   AREAVERT NPILE        256718.077 4093856.665 256764.399 4093816.016
   AREAVERT NPILE        256782.360 4093751.733 256777.633 4093684.614
   AREAVERT NPILE        256734.148 4093663.817 256621.653 4093687.450
   AREAVERT NPILE        256558.316 4093736.607 256491.197 4093808.453
   AREAVERT NPILE        256469.454 4093903.932
   SRCPARAM NMINE1             0.0     1.000    56.240     1.000
   SRCPARAM NMINE2             0.0     1.000    56.240     1.000
   SRCPARAM NMINE3             0.0     1.000    56.240     1.000
   SRCPARAM NMINE4             0.0     1.000    56.240     1.000
   SRCPARAM NMINE5             0.0     1.000    56.240     1.000
   SRCPARAM NMINE6             0.0     1.000    56.240     1.000
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   SRCPARAM NMINE8       0.022127325     1.000    56.240     1.000
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   SRCPARAM SRMPT              0.0     4.572    16.916     1.000
   SRCPARAM SAPLT        0.0000684     4.572    24.691     1.000
   SRCPARAM SASTK           0.0246     9.144   399.983        20       1.3
   SRCPARAM SMINE          0.00028     1.000    56.240     1.000
SO FINISHED
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** AERMOD Receptor Pathway
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**
RE STARTING
   INCLUDED "SO2_AA (1).rou"
RE FINISHED
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** AERMOD Output Pathway
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   PLOTFILE ANNUAL NASTK "SO2_AA (1).AD\AN00G002.PLT" 32
   PLOTFILE ANNUAL NMINE1 "SO2_AA (1).AD\AN00G003.PLT" 33
   PLOTFILE ANNUAL NMINE2 "SO2_AA (1).AD\AN00G004.PLT" 34
   PLOTFILE ANNUAL NMINE3 "SO2_AA (1).AD\AN00G005.PLT" 35
   PLOTFILE ANNUAL NMINE4 "SO2_AA (1).AD\AN00G006.PLT" 36
   PLOTFILE ANNUAL NMINE5 "SO2_AA (1).AD\AN00G007.PLT" 37
   PLOTFILE ANNUAL NMINE6 "SO2_AA (1).AD\AN00G008.PLT" 38
   PLOTFILE ANNUAL NMINE7 "SO2_AA (1).AD\AN00G009.PLT" 39
   PLOTFILE ANNUAL NMINE8 "SO2_AA (1).AD\AN00G010.PLT" 40
   PLOTFILE ANNUAL NMINE9 "SO2_AA (1).AD\AN00G011.PLT" 41
   PLOTFILE ANNUAL NMPLNT "SO2_AA (1).AD\AN00G012.PLT" 42
   PLOTFILE ANNUAL NPILE "SO2_AA (1).AD\AN00G013.PLT" 43
   PLOTFILE ANNUAL NPLNT "SO2_AA (1).AD\AN00G014.PLT" 44
   PLOTFILE ANNUAL NRD1 "SO2_AA (1).AD\AN00G015.PLT" 45
   PLOTFILE ANNUAL NRD2 "SO2_AA (1).AD\AN00G016.PLT" 46
   PLOTFILE ANNUAL NRD3 "SO2_AA (1).AD\AN00G017.PLT" 47
   PLOTFILE ANNUAL NSNK "SO2_AA (1).AD\AN00G018.PLT" 48
   PLOTFILE ANNUAL SPILE "SO2_AA (1).AD\AN00G019.PLT" 49
   PLOTFILE ANNUAL SPLNT "SO2_AA (1).AD\AN00G020.PLT" 50
   PLOTFILE ANNUAL SRD1 "SO2_AA (1).AD\AN00G021.PLT" 51
   PLOTFILE ANNUAL SSNK "SO2_AA (1).AD\AN00G022.PLT" 52
   PLOTFILE ANNUAL SAPLT "SO2_AA (1).AD\AN00G023.PLT" 53
   PLOTFILE ANNUAL SASTK "SO2_AA (1).AD\AN00G024.PLT" 54
   PLOTFILE ANNUAL SMINE "SO2_AA (1).AD\AN00G025.PLT" 55
   PLOTFILE ANNUAL SRMPT "SO2_AA (1).AD\AN00G026.PLT" 56
   PLOTFILE ANNUAL ALL "SO2_AA (1).AD\AN00GALL.PLT" 57
   PLOTFILE ANNUAL NORTH "SO2_AA (1).AD\AN00G027.PLT" 58
   PLOTFILE ANNUAL SOUTH "SO2_AA (1).AD\AN00G028.PLT" 59
   PLOTFILE ANNUAL POSITIVE "SO2_AA (1).AD\AN00G029.PLT" 60
   PLOTFILE ANNUAL NEGATIVE "SO2_AA (1).AD\AN00G030.PLT" 61
   SUMMFILE NO2hr.sum
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** Project Parameters
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** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
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x	y	SO2 Annual Concentration (ug/m3)
257248.4	4093315.92	1.09
257247.38	4093291.21	1.09
257246.36	4093266.49	1.03
257249.41	4093340.63	1.03
257245.35	4093241.78	0.93
257250.42	4093365.35	0.90
257197.94	4092998.78	0.85
257190.9	4092977.28	0.85
257243.32	4093219.19	0.83
257204.98	4093020.27	0.82
257272.36	4093290.18	0.82
257271.34	4093265.47	0.81
257183.86	4092955.79	0.79
257273.37	4093314.9	0.78
257270.33	4093240.75	0.77
257212.03	4093041.77	0.75
257251.44	4093390.06	0.74
257241.28	4093196.6	0.73
257170.89	4092935.36	0.72
257268.22	4093216.95	0.72
257274.39	4093339.61	0.71
257214.66	4092969.5	0.68
257221.7	4092991	0.68
257219.07	4093063.26	0.67
257266.18	4093194.36	0.66
257239.25	4093174.01	0.65
257207.62	4092948.01	0.65
257228.74	4093012.49	0.65
257296.32	4093264.44	0.62
257297.34	4093289.16	0.62

APPENDIX I5 CO-1HR
MODELING FILES

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** AERMOD Input Produced by:
** AERMOD View Ver. 13.0.0
** Lakes Environmental Software Inc.
** Date: 3/13/2026
** File: C:\z_AERMOD\Rockfield\COhr_v0.2\COhr (1).ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE Rockfield CO Hourly Max
   MODELOPT DFAULT CONC
   AVERTIME 1
   POLLUTID CO
   FLAGPOLE 1.50
   RUNORNOT RUN
   ERRORFIL NO2hr.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Parameters **
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   SRCPARAM NSNK              0.0     0.000   134.565     1.000
** LINE VOLUME Source ID = NRD1
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   SRCPARAM L0001776     0.0014181818      4.25      4.65      3.95
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   SRCPARAM L0001780     0.0014181818      4.25      4.65      3.95
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SRCPARAM L0001793     0.0014181818      4.25      4.65      3.95
SRCPARAM L0001794     0.0014181818      4.25      4.65      3.95
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SRCPARAM L0001796     0.0014181818      4.25      4.65      3.95
SRCPARAM L0001797     0.0014181818      4.25      4.65      3.95
SRCPARAM L0001798     0.0014181818      4.25      4.65      3.95
SRCPARAM L0001799     0.0014181818      4.25      4.65      3.95
SRCPARAM L0001800     0.0014181818      4.25      4.65      3.95
SRCPARAM L0001801     0.0014181818      4.25      4.65      3.95
SRCPARAM L0001802     0.0014181818      4.25      4.65      3.95
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   SRCPARAM L0001854     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001855     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001856     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001857     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001858     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001859     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001860     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001861     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001862     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001863     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001864     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001865     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001866     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001867     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001868     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001869     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001870     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001871     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001872     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001873     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001874     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001875     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001876     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001877     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001878     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001879     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001880     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001881     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001882     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001883     0.0014181818      4.25      4.65      3.95
   SRCPARAM L0001884     0.0014181818      4.25      4.65      3.95
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** LINE VOLUME Source ID = NRD2
   SRCPARAM L0001885     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0001886     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0001887     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0001888     0.0000178689      3.40      5.12      3.16
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SRCPARAM L0001889     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001890     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001891     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001892     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001893     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001894     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001895     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001896     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001897     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001898     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001899     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001900     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001901     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001902     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001903     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001904     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001905     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001906     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001907     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001908     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001909     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001910     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001911     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001912     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001913     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001914     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001915     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001916     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001917     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001918     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001919     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001920     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001921     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001922     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001923     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001924     0.0000178689      3.40      5.12      3.16
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SRCPARAM L0001926     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001927     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001928     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001929     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001930     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001931     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001932     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001933     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001934     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001935     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001936     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001937     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001938     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001939     0.0000178689      3.40      5.12      3.16
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SRCPARAM L0001940     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001941     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001942     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001943     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001944     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001945     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001946     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001947     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001948     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001949     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001950     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001951     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001952     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001953     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001954     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001955     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001956     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001957     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001958     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001959     0.0000178689      3.40      5.12      3.16
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SRCPARAM L0001961     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001962     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001963     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001964     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001965     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001966     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001967     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001968     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001969     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001970     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001971     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001972     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001973     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001974     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001975     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001976     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001977     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001978     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001979     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001980     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001981     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001982     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001983     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001984     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001985     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001986     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001987     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001988     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001989     0.0000178689      3.40      5.12      3.16
SRCPARAM L0001990     0.0000178689      3.40      5.12      3.16
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   SRCPARAM L0001991     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0001992     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0001993     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0001994     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0001995     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0001996     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0001997     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0001998     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0001999     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0002000     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0002001     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0002002     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0002003     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0002004     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0002005     0.0000178689      3.40      5.12      3.16
   SRCPARAM L0002006     0.0000178689      3.40      5.12      3.16
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** LINE VOLUME Source ID = NRD3
   SRCPARAM L0002007     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002008     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002009     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002010     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002011     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002012     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002013     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002014     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002015     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002016     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002017     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002018     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002019     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002020     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002021     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002022     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002023     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002024     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002025     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002026     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002027     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002028     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002029     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002030     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002031     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002032     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002033     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002034     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002035     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002036     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002037     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002038     0.0001210762      4.25      4.65      3.95
   SRCPARAM L0002039     0.0001210762      4.25      4.65      3.95
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SRCPARAM L0002040     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002041     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002042     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002043     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002044     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002045     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002046     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002047     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002048     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002049     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002050     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002051     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002052     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002053     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002054     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002055     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002056     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002057     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002058     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002059     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002060     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002061     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002062     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002063     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002064     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002065     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002066     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002067     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002068     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002069     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002070     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002071     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002072     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002073     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002074     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002075     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002076     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002077     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002078     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002079     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002080     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002081     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002082     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002083     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002084     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002085     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002086     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002087     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002088     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002089     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002090     0.0001210762      4.25      4.65      3.95
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SRCPARAM L0002092     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002093     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002094     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002095     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002096     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002097     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002098     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002099     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002100     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002101     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002102     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002103     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002104     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002105     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002106     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002107     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002108     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002109     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002110     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002111     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002112     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002113     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002114     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002115     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002116     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002117     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002118     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002119     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002120     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002121     0.0001210762      4.25      4.65      3.95
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SRCPARAM L0002125     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002126     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002127     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002128     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002129     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002130     0.0001210762      4.25      4.65      3.95
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SRCPARAM L0002132     0.0001210762      4.25      4.65      3.95
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SRCPARAM L0002135     0.0001210762      4.25      4.65      3.95
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SRCPARAM L0002137     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002138     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002139     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002140     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002141     0.0001210762      4.25      4.65      3.95
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SRCPARAM L0002142     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002143     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002144     0.0001210762      4.25      4.65      3.95
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SRCPARAM L0002146     0.0001210762      4.25      4.65      3.95
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SRCPARAM L0002148     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002149     0.0001210762      4.25      4.65      3.95
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SRCPARAM L0002151     0.0001210762      4.25      4.65      3.95
SRCPARAM L0002152     0.0001210762      4.25      4.65      3.95
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SRCPARAM L0002156     0.0001210762      4.25      4.65      3.95
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SRCPARAM L0002159     0.0001210762      4.25      4.65      3.95
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SRCPARAM L0002187     0.0001210762      4.25      4.65      3.95
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SRCPARAM L0002189     0.0001210762      4.25      4.65      3.95
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SRCPARAM L0002192     0.0001210762      4.25      4.65      3.95
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   SRCPARAM L0002195     0.0001210762      4.25      4.65      3.95
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   SRCPARAM L0002197     0.0001210762      4.25      4.65      3.95
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** LINE VOLUME Source ID = SRD1
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SRCPARAM L0002292     0.0003515152      4.25      4.65      3.95
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SRCPARAM L0002394     0.0003515152      4.25      4.65      3.95
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   AREAVERT SPILE         256191.750 4090755.439 256068.011 4090782.078
   AREAVERT SPILE         255998.408 4090717.630 256015.594 4090546.630
   AREAVERT SPILE         256101.524 4090442.655 256235.575 4090404.846
   AREAVERT SPILE         256319.786 4090522.570 256397.123 4090616.233
   AREAVERT SPILE         256471.022 4090567.253 256367.906 4090398.831
   AREAVERT SPILE         256251.901 4090352.429 256086.916 4090379.926
   AREAVERT SPILE         255994.971 4090471.871 255907.323 4090529.444
   AREAVERT SPILE         255888.418 4090690.992 255956.303 4090820.746
   AREAVERT SPILE         256047.388 4090871.445 256208.936 4090852.540
   AREAVERT SPILE         256367.047 4090767.470 256467.585 4090678.962
   AREAVERT SPILE         256508.831 4090610.218 256478.756 4090574.128
   SRCPARAM SPLNT              0.0     1.000     29.667     1.000
   SRCPARAM NASTK              8.369     9.144   400.000        20       1.3
   SRCPARAM NAPLNT             0.151     1.000     10.900     1.000
   SRCPARAM NMPLNT             0.0     1.000      5.637     1.000
   SRCPARAM NPLNT              0.0     1.000     49.235     1.000
   SRCPARAM NPILE              0.0     1.000        11
   AREAVERT NPILE         256496.869 4093919.057 256616.926 4093910.549
   AREAVERT NPILE         256718.077 4093856.665 256764.399 4093816.016
   AREAVERT NPILE         256782.360 4093751.733 256777.633 4093684.614
   AREAVERT NPILE         256734.148 4093663.817 256621.653 4093687.450
   AREAVERT NPILE         256558.316 4093736.607 256491.197 4093808.453
   AREAVERT NPILE         256469.454 4093903.932
   SRCPARAM NMINE1             0.0     1.000     56.240     1.000
   SRCPARAM NMINE2             0.0     1.000     56.240     1.000
   SRCPARAM NMINE3             0.0     1.000     56.240     1.000
   SRCPARAM NMINE4             0.0     1.000     56.240     1.000
   SRCPARAM NMINE5             0.0     1.000     56.240     1.000
   SRCPARAM NMINE6             0.0     1.000     56.240     1.000
   SRCPARAM NMINE7             0.0     1.000     56.240     1.000
   SRCPARAM NMINE8         0.116919     1.000     56.240     1.000
   SRCPARAM NMINE9         0.116919     1.000     56.240     1.000
   SRCPARAM SRMPT              0.0     4.572     16.916     1.000
   SRCPARAM SAPLT              0.002     4.572     24.691     1.000
   SRCPARAM SASTK              8.369     9.144   399.983        20       1.3
   SRCPARAM SMINE              0.094     1.000     56.240     1.000
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED "COhr (1).rou"
RE FINISHED
**
**************************************
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** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST 8TH
   RECTABLE 1 1ST 8TH
** Auto-Generated Plotfiles
   PLOTFILE 1 NAPLNT 1ST NO2HR.AD\01H1G001.PLT 31
   PLOTFILE 1 NASTK 1ST NO2HR.AD\01H1G002.PLT 32
   PLOTFILE 1 NMINE1 1ST NO2HR.AD\01H1G003.PLT 33
   PLOTFILE 1 NMINE2 1ST NO2HR.AD\01H1G004.PLT 34
   PLOTFILE 1 NMINE3 1ST NO2HR.AD\01H1G005.PLT 35
   PLOTFILE 1 NMINE4 1ST NO2HR.AD\01H1G006.PLT 36
   PLOTFILE 1 NMINE5 1ST NO2HR.AD\01H1G007.PLT 37
   PLOTFILE 1 NMINE6 1ST NO2HR.AD\01H1G008.PLT 38
   PLOTFILE 1 NMINE7 1ST NO2HR.AD\01H1G009.PLT 39
   PLOTFILE 1 NMINE8 1ST NO2HR.AD\01H1G010.PLT 40
   PLOTFILE 1 NMINE9 1ST NO2HR.AD\01H1G011.PLT 41
   PLOTFILE 1 NMPLNT 1ST NO2HR.AD\01H1G012.PLT 42
   PLOTFILE 1 NPILE 1ST NO2HR.AD\01H1G013.PLT 43
   PLOTFILE 1 NPLNT 1ST NO2HR.AD\01H1G014.PLT 44
   PLOTFILE 1 NRD1 1ST NO2HR.AD\01H1G015.PLT 45
   PLOTFILE 1 NRD2 1ST NO2HR.AD\01H1G016.PLT 46
   PLOTFILE 1 NRD3 1ST NO2HR.AD\01H1G017.PLT 47
   PLOTFILE 1 NSNK 1ST NO2HR.AD\01H1G018.PLT 48
   PLOTFILE 1 SPILE 1ST NO2HR.AD\01H1G019.PLT 49
   PLOTFILE 1 SPLNT 1ST NO2HR.AD\01H1G020.PLT 50
   PLOTFILE 1 SRD1 1ST NO2HR.AD\01H1G021.PLT 51
   PLOTFILE 1 SSNK 1ST NO2HR.AD\01H1G022.PLT 52
   PLOTFILE 1 SAPLT 1ST NO2HR.AD\01H1G023.PLT 53
   PLOTFILE 1 SASTK 1ST NO2HR.AD\01H1G024.PLT 54
   PLOTFILE 1 SMINE 1ST NO2HR.AD\01H1G025.PLT 55
   PLOTFILE 1 SRMPT 1ST NO2HR.AD\01H1G026.PLT 56
   PLOTFILE 1 ALL 1ST NO2HR.AD\01H1GALL.PLT 57
   PLOTFILE 1 NORTH 1ST NO2HR.AD\01H1G027.PLT 58
   PLOTFILE 1 SOUTH 1ST NO2HR.AD\01H1G028.PLT 59
   PLOTFILE 1 POSITIVE 1ST NO2HR.AD\01H1G029.PLT 60
   PLOTFILE 1 NEGATIVE 1ST NO2HR.AD\01H1G030.PLT 61
   PLOTFILE 1 NAPLNT 8TH NO2HR.AD\01H8G001.PLT 62
   PLOTFILE 1 NASTK 8TH NO2HR.AD\01H8G002.PLT 63
   PLOTFILE 1 NMINE1 8TH NO2HR.AD\01H8G003.PLT 64
   PLOTFILE 1 NMINE2 8TH NO2HR.AD\01H8G004.PLT 65
   PLOTFILE 1 NMINE3 8TH NO2HR.AD\01H8G005.PLT 66
   PLOTFILE 1 NMINE4 8TH NO2HR.AD\01H8G006.PLT 67
   PLOTFILE 1 NMINE5 8TH NO2HR.AD\01H8G007.PLT 68
   PLOTFILE 1 NMINE6 8TH NO2HR.AD\01H8G008.PLT 69
   PLOTFILE 1 NMINE7 8TH NO2HR.AD\01H8G009.PLT 70
   PLOTFILE 1 NMINE8 8TH NO2HR.AD\01H8G010.PLT 71
   PLOTFILE 1 NMINE9 8TH NO2HR.AD\01H8G011.PLT 72
   PLOTFILE 1 NMPLNT 8TH NO2HR.AD\01H8G012.PLT 73
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   PLOTFILE 1 NPILE 8TH NO2HR.AD\01H8G013.PLT 74
   PLOTFILE 1 NPLNT 8TH NO2HR.AD\01H8G014.PLT 75
   PLOTFILE 1 NRD1 8TH NO2HR.AD\01H8G015.PLT 76
   PLOTFILE 1 NRD2 8TH NO2HR.AD\01H8G016.PLT 77
   PLOTFILE 1 NRD3 8TH NO2HR.AD\01H8G017.PLT 78
   PLOTFILE 1 NSNK 8TH NO2HR.AD\01H8G018.PLT 79
   PLOTFILE 1 SPILE 8TH NO2HR.AD\01H8G019.PLT 80
   PLOTFILE 1 SPLNT 8TH NO2HR.AD\01H8G020.PLT 81
   PLOTFILE 1 SRD1 8TH NO2HR.AD\01H8G021.PLT 82
   PLOTFILE 1 SSNK 8TH NO2HR.AD\01H8G022.PLT 83
   PLOTFILE 1 SAPLT 8TH NO2HR.AD\01H8G023.PLT 84
   PLOTFILE 1 SASTK 8TH NO2HR.AD\01H8G024.PLT 85
   PLOTFILE 1 SMINE 8TH NO2HR.AD\01H8G025.PLT 86
   PLOTFILE 1 SRMPT 8TH NO2HR.AD\01H8G026.PLT 87
   PLOTFILE 1 ALL 8TH NO2HR.AD\01H8GALL.PLT 88
   PLOTFILE 1 NORTH 8TH NO2HR.AD\01H8G027.PLT 89
   PLOTFILE 1 SOUTH 8TH NO2HR.AD\01H8G028.PLT 90
   PLOTFILE 1 POSITIVE 8TH NO2HR.AD\01H8G029.PLT 91
   PLOTFILE 1 NEGATIVE 8TH NO2HR.AD\01H8G030.PLT 92
   SUMMFILE "COhr (2).sum"
OU FINISHED
**
**************************************
** Project Parameters
**************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
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x	y	CO Hourly Concentration (ug/m3)
256792.55	4094014.79	231
255228.46	4093681.98	227
256889.38	4094013.76	222
256865.17	4094014.02	221
256816.76	4094014.53	214
256768.35	4094015.05	213
255066.66	4093721.72	213
256913.58	4094013.5	211
256797.48	4094033.14	211
254897.48	4093717.99	209
255221.52	4093641.19	207
256937.79	4094013.25	204
254926.54	4093854.89	202
256719.94	4094015.56	200
255048.61	4093615.48	200
256962	4094012.99	199
255198.45	4093422.82	199
255076.25	4093766.75	198
256695.73	4094015.82	198
256840.97	4094014.28	198
256744.14	4094015.3	197
254890.06	4093674.28	196
256880.77	4094035.94	195
256986.2	4094012.73	194
255267.4	4093139.96	192
255044.57	4093571.09	192
255280.81	4093106.85	192
255237.89	4093726.16	190
256768.61	4094040.05	189
255195.52	4093380.51	187

APPENDIX I6 CO-8HR
MODELING FILES

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**
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**
** AERMOD Input Produced by:
** AERMOD View Ver. 13.0.0
** Lakes Environmental Software Inc.
** Date: 3/12/2026
** File: C:\z_AERMOD\Rockfield\CO_8hr_v0.2\CO_8hr (1).ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE Rockfield CO 8-Hourl Average
   MODELOPT DFAULT CONC
   AVERTIME 8
   POLLUTID CO
   FLAGPOLE 1.50
   RUNORNOT RUN
   ERRORFIL NO2hr.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
** Source Parameters **
   SRCPARAM SSNK               0.0     0.000   133.356     1.000
   SRCPARAM NSNK               0.0     0.000   134.565     1.000
** LINE VOLUME Source ID = NRD1
   SRCPARAM L0002395     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002396     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002397     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002398     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002399     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002400     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002401     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002402     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002403     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002404     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002405     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002406     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002407     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002408     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002409     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002410     0.0003909091      4.25      4.65      3.95
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SRCPARAM L0002411     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002412     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002413     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002414     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002415     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002416     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002417     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002418     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002419     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002420     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002421     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002422     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002423     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002424     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002425     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002426     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002427     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002428     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002429     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002430     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002431     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002432     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002433     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002434     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002435     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002436     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002437     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002438     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002439     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002440     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002441     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002442     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002443     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002444     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002445     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002446     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002447     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002448     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002449     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002450     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002451     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002452     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002453     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002454     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002455     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002456     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002457     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002458     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002459     0.0003909091      4.25      4.65      3.95
SRCPARAM L0002460     0.0003909091      4.25      4.65      3.95
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   SRCPARAM L0002461     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002462     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002463     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002464     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002465     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002466     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002467     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002468     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002469     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002470     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002471     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002472     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002473     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002474     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002475     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002476     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002477     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002478     0.0003909091      4.25      4.65      3.95
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   SRCPARAM L0002480     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002481     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002482     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002483     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002484     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002485     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002486     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002487     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002488     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002489     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002490     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002491     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002492     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002493     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002494     0.0003909091      4.25      4.65      3.95
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   SRCPARAM L0002496     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002497     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002498     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002499     0.0003909091      4.25      4.65      3.95
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   SRCPARAM L0002501     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002502     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002503     0.0003909091      4.25      4.65      3.95
   SRCPARAM L0002504     0.0003909091      4.25      4.65      3.95
** ------------------------------------------------------------------------
** LINE VOLUME Source ID = NRD2
   SRCPARAM L0002505     0.000004918      3.40      5.12      3.16
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   SRCPARAM L0002507     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002508     0.000004918      3.40      5.12      3.16
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SRCPARAM L0002510     0.000004918      3.40      5.12      3.16
SRCPARAM L0002511     0.000004918      3.40      5.12      3.16
SRCPARAM L0002512     0.000004918      3.40      5.12      3.16
SRCPARAM L0002513     0.000004918      3.40      5.12      3.16
SRCPARAM L0002514     0.000004918      3.40      5.12      3.16
SRCPARAM L0002515     0.000004918      3.40      5.12      3.16
SRCPARAM L0002516     0.000004918      3.40      5.12      3.16
SRCPARAM L0002517     0.000004918      3.40      5.12      3.16
SRCPARAM L0002518     0.000004918      3.40      5.12      3.16
SRCPARAM L0002519     0.000004918      3.40      5.12      3.16
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SRCPARAM L0002521     0.000004918      3.40      5.12      3.16
SRCPARAM L0002522     0.000004918      3.40      5.12      3.16
SRCPARAM L0002523     0.000004918      3.40      5.12      3.16
SRCPARAM L0002524     0.000004918      3.40      5.12      3.16
SRCPARAM L0002525     0.000004918      3.40      5.12      3.16
SRCPARAM L0002526     0.000004918      3.40      5.12      3.16
SRCPARAM L0002527     0.000004918      3.40      5.12      3.16
SRCPARAM L0002528     0.000004918      3.40      5.12      3.16
SRCPARAM L0002529     0.000004918      3.40      5.12      3.16
SRCPARAM L0002530     0.000004918      3.40      5.12      3.16
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SRCPARAM L0002532     0.000004918      3.40      5.12      3.16
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SRCPARAM L0002534     0.000004918      3.40      5.12      3.16
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SRCPARAM L0002536     0.000004918      3.40      5.12      3.16
SRCPARAM L0002537     0.000004918      3.40      5.12      3.16
SRCPARAM L0002538     0.000004918      3.40      5.12      3.16
SRCPARAM L0002539     0.000004918      3.40      5.12      3.16
SRCPARAM L0002540     0.000004918      3.40      5.12      3.16
SRCPARAM L0002541     0.000004918      3.40      5.12      3.16
SRCPARAM L0002542     0.000004918      3.40      5.12      3.16
SRCPARAM L0002543     0.000004918      3.40      5.12      3.16
SRCPARAM L0002544     0.000004918      3.40      5.12      3.16
SRCPARAM L0002545     0.000004918      3.40      5.12      3.16
SRCPARAM L0002546     0.000004918      3.40      5.12      3.16
SRCPARAM L0002547     0.000004918      3.40      5.12      3.16
SRCPARAM L0002548     0.000004918      3.40      5.12      3.16
SRCPARAM L0002549     0.000004918      3.40      5.12      3.16
SRCPARAM L0002550     0.000004918      3.40      5.12      3.16
SRCPARAM L0002551     0.000004918      3.40      5.12      3.16
SRCPARAM L0002552     0.000004918      3.40      5.12      3.16
SRCPARAM L0002553     0.000004918      3.40      5.12      3.16
SRCPARAM L0002554     0.000004918      3.40      5.12      3.16
SRCPARAM L0002555     0.000004918      3.40      5.12      3.16
SRCPARAM L0002556     0.000004918      3.40      5.12      3.16
SRCPARAM L0002557     0.000004918      3.40      5.12      3.16
SRCPARAM L0002558     0.000004918      3.40      5.12      3.16
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SRCPARAM L0002560     0.000004918      3.40      5.12      3.16
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SRCPARAM L0002562     0.000004918      3.40      5.12      3.16
SRCPARAM L0002563     0.000004918      3.40      5.12      3.16
SRCPARAM L0002564     0.000004918      3.40      5.12      3.16
SRCPARAM L0002565     0.000004918      3.40      5.12      3.16
SRCPARAM L0002566     0.000004918      3.40      5.12      3.16
SRCPARAM L0002567     0.000004918      3.40      5.12      3.16
SRCPARAM L0002568     0.000004918      3.40      5.12      3.16
SRCPARAM L0002569     0.000004918      3.40      5.12      3.16
SRCPARAM L0002570     0.000004918      3.40      5.12      3.16
SRCPARAM L0002571     0.000004918      3.40      5.12      3.16
SRCPARAM L0002572     0.000004918      3.40      5.12      3.16
SRCPARAM L0002573     0.000004918      3.40      5.12      3.16
SRCPARAM L0002574     0.000004918      3.40      5.12      3.16
SRCPARAM L0002575     0.000004918      3.40      5.12      3.16
SRCPARAM L0002576     0.000004918      3.40      5.12      3.16
SRCPARAM L0002577     0.000004918      3.40      5.12      3.16
SRCPARAM L0002578     0.000004918      3.40      5.12      3.16
SRCPARAM L0002579     0.000004918      3.40      5.12      3.16
SRCPARAM L0002580     0.000004918      3.40      5.12      3.16
SRCPARAM L0002581     0.000004918      3.40      5.12      3.16
SRCPARAM L0002582     0.000004918      3.40      5.12      3.16
SRCPARAM L0002583     0.000004918      3.40      5.12      3.16
SRCPARAM L0002584     0.000004918      3.40      5.12      3.16
SRCPARAM L0002585     0.000004918      3.40      5.12      3.16
SRCPARAM L0002586     0.000004918      3.40      5.12      3.16
SRCPARAM L0002587     0.000004918      3.40      5.12      3.16
SRCPARAM L0002588     0.000004918      3.40      5.12      3.16
SRCPARAM L0002589     0.000004918      3.40      5.12      3.16
SRCPARAM L0002590     0.000004918      3.40      5.12      3.16
SRCPARAM L0002591     0.000004918      3.40      5.12      3.16
SRCPARAM L0002592     0.000004918      3.40      5.12      3.16
SRCPARAM L0002593     0.000004918      3.40      5.12      3.16
SRCPARAM L0002594     0.000004918      3.40      5.12      3.16
SRCPARAM L0002595     0.000004918      3.40      5.12      3.16
SRCPARAM L0002596     0.000004918      3.40      5.12      3.16
SRCPARAM L0002597     0.000004918      3.40      5.12      3.16
SRCPARAM L0002598     0.000004918      3.40      5.12      3.16
SRCPARAM L0002599     0.000004918      3.40      5.12      3.16
SRCPARAM L0002600     0.000004918      3.40      5.12      3.16
SRCPARAM L0002601     0.000004918      3.40      5.12      3.16
SRCPARAM L0002602     0.000004918      3.40      5.12      3.16
SRCPARAM L0002603     0.000004918      3.40      5.12      3.16
SRCPARAM L0002604     0.000004918      3.40      5.12      3.16
SRCPARAM L0002605     0.000004918      3.40      5.12      3.16
SRCPARAM L0002606     0.000004918      3.40      5.12      3.16
SRCPARAM L0002607     0.000004918      3.40      5.12      3.16
SRCPARAM L0002608     0.000004918      3.40      5.12      3.16
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   SRCPARAM L0002609     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002610     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002611     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002612     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002613     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002614     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002615     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002616     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002617     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002618     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002619     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002620     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002621     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002622     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002623     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002624     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002625     0.000004918      3.40      5.12      3.16
   SRCPARAM L0002626     0.000004918      3.40      5.12      3.16
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** LINE VOLUME Source ID = NRD3
   SRCPARAM L0002627     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002628     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002629     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002630     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002631     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002632     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002633     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002634     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002635     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002636     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002637     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002638     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002639     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002640     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002641     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002642     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002643     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002644     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002645     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002646     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002647     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002648     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002649     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002650     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002651     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002652     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002653     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002654     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002655     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002656     0.0000627803      4.25      4.65      3.95
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SRCPARAM L0002657     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002658     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002659     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002660     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002661     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002662     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002663     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002664     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002665     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002666     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002667     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002668     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002669     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002670     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002671     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002672     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002673     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002674     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002675     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002676     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002677     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002678     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002679     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002680     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002681     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002682     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002683     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002684     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002685     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002686     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002687     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002688     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002689     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002690     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002691     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002692     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002693     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002694     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002695     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002696     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002697     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002698     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002699     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002700     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002701     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002702     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002703     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002704     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002705     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002706     0.0000627803      4.25      4.65      3.95
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SRCPARAM L0002707     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002708     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002709     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002710     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002711     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002712     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002713     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002714     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002715     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002716     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002717     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002718     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002719     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002720     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002721     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002722     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002723     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002724     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002725     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002726     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002727     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002728     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002729     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002730     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002731     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002732     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002733     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002734     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002735     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002736     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002737     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002738     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002739     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002740     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002741     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002742     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002743     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002744     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002745     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002746     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002747     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002748     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002749     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002750     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002751     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002752     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002753     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002754     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002755     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002756     0.0000627803      4.25      4.65      3.95
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SRCPARAM L0002757     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002758     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002759     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002760     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002761     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002762     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002763     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002764     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002765     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002766     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002767     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002768     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002769     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002770     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002771     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002772     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002773     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002774     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002775     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002776     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002777     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002778     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002779     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002780     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002781     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002782     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002783     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002784     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002785     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002786     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002787     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002788     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002789     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002790     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002791     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002792     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002793     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002794     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002795     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002796     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002797     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002798     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002799     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002800     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002801     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002802     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002803     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002804     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002805     0.0000627803      4.25      4.65      3.95
SRCPARAM L0002806     0.0000627803      4.25      4.65      3.95
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   SRCPARAM L0002807     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002808     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002809     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002810     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002811     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002812     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002813     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002814     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002815     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002816     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002817     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002818     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002819     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002820     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002821     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002822     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002823     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002824     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002825     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002826     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002827     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002828     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002829     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002830     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002831     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002832     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002833     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002834     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002835     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002836     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002837     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002838     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002839     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002840     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002841     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002842     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002843     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002844     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002845     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002846     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002847     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002848     0.0000627803      4.25      4.65      3.95
   SRCPARAM L0002849     0.0000627803      4.25      4.65      3.95
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** LINE VOLUME Source ID = SRD1
   SRCPARAM L0002850     0.0001272727      4.25      4.65      3.95
   SRCPARAM L0002851     0.0001272727      4.25      4.65      3.95
   SRCPARAM L0002852     0.0001272727      4.25      4.65      3.95
   SRCPARAM L0002853     0.0001272727      4.25      4.65      3.95
   SRCPARAM L0002854     0.0001272727      4.25      4.65      3.95
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SRCPARAM L0002855     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002856     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002857     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002858     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002859     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002860     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002861     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002862     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002863     0.0001272727      4.25      4.65      3.95
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SRCPARAM L0002868     0.0001272727      4.25      4.65      3.95
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SRCPARAM L0002870     0.0001272727      4.25      4.65      3.95
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SRCPARAM L0002904     0.0001272727      4.25      4.65      3.95
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SRCPARAM L0002943     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002944     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002945     0.0001272727      4.25      4.65      3.95
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SRCPARAM L0002952     0.0001272727      4.25      4.65      3.95
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SRCPARAM L0002964     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002965     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002966     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002967     0.0001272727      4.25      4.65      3.95
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SRCPARAM L0002976     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002977     0.0001272727      4.25      4.65      3.95
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SRCPARAM L0002979     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002980     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002981     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002982     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002983     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002984     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002985     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002986     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002987     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002988     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002989     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002990     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002991     0.0001272727      4.25      4.65      3.95
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SRCPARAM L0002993     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002994     0.0001272727      4.25      4.65      3.95
SRCPARAM L0002995     0.0001272727      4.25      4.65      3.95
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SRCPARAM L0002997     0.0001272727      4.25      4.65      3.95
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SRCPARAM L0003002     0.0001272727      4.25      4.65      3.95
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   SRCPARAM L0003014     0.0001272727      4.25      4.65      3.95
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   SRCPARAM SPILE              0.0     1.000        24
   AREAVERT SPILE         256392.826 4090627.404 256299.163 4090697.866
   AREAVERT SPILE         256191.750 4090755.439 256068.011 4090782.078
   AREAVERT SPILE         255998.408 4090717.630 256015.594 4090546.630
   AREAVERT SPILE         256101.524 4090442.655 256235.575 4090404.846
   AREAVERT SPILE         256319.786 4090522.570 256397.123 4090616.233
   AREAVERT SPILE         256471.022 4090567.253 256367.906 4090398.831
   AREAVERT SPILE         256251.901 4090352.429 256086.916 4090379.926
   AREAVERT SPILE         255994.971 4090471.871 255907.323 4090529.444
   AREAVERT SPILE         255888.418 4090690.992 255956.303 4090820.746
   AREAVERT SPILE         256047.388 4090871.445 256208.936 4090852.540
   AREAVERT SPILE         256367.047 4090767.470 256467.585 4090678.962
   AREAVERT SPILE         256508.831 4090610.218 256478.756 4090574.128
   SRCPARAM SPLNT              0.0     1.000    29.667     1.000
   SRCPARAM NASTK            2.325     9.144   400.000        20       1.3
   SRCPARAM NAPLNT           0.042     1.000    10.900     1.000
   SRCPARAM NMPLNT             0.0     1.000     5.637     1.000
   SRCPARAM NPLNT              0.0     1.000    49.235     1.000
   SRCPARAM NPILE              0.0     1.000        11
   AREAVERT NPILE         256496.869 4093919.057 256616.926 4093910.549
   AREAVERT NPILE         256718.077 4093856.665 256764.399 4093816.016
   AREAVERT NPILE         256782.360 4093751.733 256777.633 4093684.614
   AREAVERT NPILE         256734.148 4093663.817 256621.653 4093687.450
   AREAVERT NPILE         256558.316 4093736.607 256491.197 4093808.453
   AREAVERT NPILE         256469.454 4093903.932
   SRCPARAM NMINE1             0.0     1.000    56.240     1.000
   SRCPARAM NMINE2             0.0     1.000    56.240     1.000
   SRCPARAM NMINE3             0.0     1.000    56.240     1.000
   SRCPARAM NMINE4             0.0     1.000    56.240     1.000
   SRCPARAM NMINE5             0.0     1.000    56.240     1.000
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   SRCPARAM NMINE7             0.0     1.000    56.240     1.000
   SRCPARAM NMINE8         0.51576     1.000    56.240     1.000
   SRCPARAM NMINE9         0.51576     1.000    56.240     1.000
   SRCPARAM SRMPT              0.0     4.572    16.916     1.000
   SRCPARAM SAPLT            0.001     4.572    24.691     1.000
   SRCPARAM SASTK            2.325     9.144   399.983        20       1.3
   SRCPARAM SMINE            0.026     1.000    56.240     1.000
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SO FINISHED
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** AERMOD Receptor Pathway
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**
RE STARTING
   INCLUDED "CO_8hr (1).rou"
RE FINISHED
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**************************************
** AERMOD Output Pathway
**************************************
**
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OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 8 1ST
** Auto-Generated Plotfiles
   PLOTFILE 8 NAPLNT 1ST NO2HR.AD\08H1G001.PLT 31
   PLOTFILE 8 NASTK 1ST NO2HR.AD\08H1G002.PLT 32
   PLOTFILE 8 NMINE1 1ST NO2HR.AD\08H1G003.PLT 33
   PLOTFILE 8 NMINE2 1ST NO2HR.AD\08H1G004.PLT 34
   PLOTFILE 8 NMINE3 1ST NO2HR.AD\08H1G005.PLT 35
   PLOTFILE 8 NMINE4 1ST NO2HR.AD\08H1G006.PLT 36
   PLOTFILE 8 NMINE5 1ST NO2HR.AD\08H1G007.PLT 37
   PLOTFILE 8 NMINE6 1ST NO2HR.AD\08H1G008.PLT 38
   PLOTFILE 8 NMINE7 1ST NO2HR.AD\08H1G009.PLT 39
   PLOTFILE 8 NMINE8 1ST NO2HR.AD\08H1G010.PLT 40
   PLOTFILE 8 NMINE9 1ST NO2HR.AD\08H1G011.PLT 41
   PLOTFILE 8 NMPLNT 1ST NO2HR.AD\08H1G012.PLT 42
   PLOTFILE 8 NPILE 1ST NO2HR.AD\08H1G013.PLT 43
   PLOTFILE 8 NPLNT 1ST NO2HR.AD\08H1G014.PLT 44
   PLOTFILE 8 NRD1 1ST NO2HR.AD\08H1G015.PLT 45
   PLOTFILE 8 NRD2 1ST NO2HR.AD\08H1G016.PLT 46
   PLOTFILE 8 NRD3 1ST NO2HR.AD\08H1G017.PLT 47
   PLOTFILE 8 NSNK 1ST NO2HR.AD\08H1G018.PLT 48
   PLOTFILE 8 SPILE 1ST NO2HR.AD\08H1G019.PLT 49
   PLOTFILE 8 SPLNT 1ST NO2HR.AD\08H1G020.PLT 50
   PLOTFILE 8 SRD1 1ST NO2HR.AD\08H1G021.PLT 51
   PLOTFILE 8 SSNK 1ST NO2HR.AD\08H1G022.PLT 52
   PLOTFILE 8 SAPLT 1ST NO2HR.AD\08H1G023.PLT 53
   PLOTFILE 8 SASTK 1ST NO2HR.AD\08H1G024.PLT 54
   PLOTFILE 8 SMINE 1ST NO2HR.AD\08H1G025.PLT 55
   PLOTFILE 8 SRMPT 1ST NO2HR.AD\08H1G026.PLT 56
   PLOTFILE 8 ALL 1ST NO2HR.AD\08H1GALL.PLT 57
   PLOTFILE 8 NORTH 1ST NO2HR.AD\08H1G027.PLT 58
   PLOTFILE 8 SOUTH 1ST NO2HR.AD\08H1G028.PLT 59
   PLOTFILE 8 POSITIVE 1ST NO2HR.AD\08H1G029.PLT 60
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   PLOTFILE 8 NEGATIVE 1ST NO2HR.AD\08H1G030.PLT 61
   SUMMFILE "CO_8hr (1).sum"
OU FINISHED
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** Project Parameters
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** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
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x	y	CO 8-Hour Concentration (ug/m3)
257248.4	4093315.92	255
257249.41	4093340.63	248
257247.38	4093291.21	246
257231.31	4093557.67	230
257235.74	4093534.04	228
257250.42	4093365.35	225
257240.17	4093510.4	223
257272.36	4093290.18	222
257273.37	4093314.9	221
257251.44	4093390.06	219
257204.98	4093020.27	219
257226.88	4093581.31	217
257252.46	4093414.78	215
257274.39	4093339.61	212
257244.61	4093486.76	210
257212.03	4093041.77	210
257246.36	4093266.49	207
257197.94	4092998.78	207
257251.45	4093585.92	205
257255.88	4093562.28	202
257249.04	4093463.13	199
257247.02	4093609.55	198
257298.35	4093313.87	197
257228.74	4093012.49	197
257275.4	4093364.32	197
257271.34	4093265.47	195
257222.45	4093604.94	195
257297.34	4093289.16	195
257219.07	4093063.26	192
257253.47	4093439.49	191

APPENDIX I7 PM10-24HR
MODELING FILES

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**
** AERMOD Input Produced by:
** AERMOD View Ver. 13.0.0
** Lakes Environmental Software Inc.
** Date: 4/25/2026
** File: C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_24hr_v0.7\PM10_24hr.inp
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE Rockfield PM10 24-Hr Average
   MODELOPT DFAULT CONC
   AVERTIME 24
   POLLUTID PM_10
   FLAGPOLE 1.00
   RUNORNOT RUN
   ERRORFIL PM10aa.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Parameters **
   SRCPARAM SSNK              0.0     0.000   133.356     1.000
   SRCPARAM NSNK              0.0     0.000   134.565     1.000
** LINE VOLUME Source ID = NRD1
   SRCPARAM L0004701         0.003      4.25      4.65      3.95
   SRCPARAM L0004702         0.003      4.25      4.65      3.95
   SRCPARAM L0004703         0.003      4.25      4.65      3.95
   SRCPARAM L0004704         0.003      4.25      4.65      3.95
   SRCPARAM L0004705         0.003      4.25      4.65      3.95
   SRCPARAM L0004706         0.003      4.25      4.65      3.95
   SRCPARAM L0004707         0.003      4.25      4.65      3.95
   SRCPARAM L0004708         0.003      4.25      4.65      3.95
   SRCPARAM L0004709         0.003      4.25      4.65      3.95
   SRCPARAM L0004710         0.003      4.25      4.65      3.95
   SRCPARAM L0004711         0.003      4.25      4.65      3.95
   SRCPARAM L0004712         0.003      4.25      4.65      3.95
   SRCPARAM L0004713         0.003      4.25      4.65      3.95
   SRCPARAM L0004714         0.003      4.25      4.65      3.95
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SRCPARAM L0004716        0.003      4.25      4.65      3.95
SRCPARAM L0004717        0.003      4.25      4.65      3.95
SRCPARAM L0004718        0.003      4.25      4.65      3.95
SRCPARAM L0004719        0.003      4.25      4.65      3.95
SRCPARAM L0004720        0.003      4.25      4.65      3.95
SRCPARAM L0004721        0.003      4.25      4.65      3.95
SRCPARAM L0004722        0.003      4.25      4.65      3.95
SRCPARAM L0004723        0.003      4.25      4.65      3.95
SRCPARAM L0004724        0.003      4.25      4.65      3.95
SRCPARAM L0004725        0.003      4.25      4.65      3.95
SRCPARAM L0004726        0.003      4.25      4.65      3.95
SRCPARAM L0004727        0.003      4.25      4.65      3.95
SRCPARAM L0004728        0.003      4.25      4.65      3.95
SRCPARAM L0004729        0.003      4.25      4.65      3.95
SRCPARAM L0004730        0.003      4.25      4.65      3.95
SRCPARAM L0004731        0.003      4.25      4.65      3.95
SRCPARAM L0004732        0.003      4.25      4.65      3.95
SRCPARAM L0004733        0.003      4.25      4.65      3.95
SRCPARAM L0004734        0.003      4.25      4.65      3.95
SRCPARAM L0004735        0.003      4.25      4.65      3.95
SRCPARAM L0004736        0.003      4.25      4.65      3.95
SRCPARAM L0004737        0.003      4.25      4.65      3.95
SRCPARAM L0004738        0.003      4.25      4.65      3.95
SRCPARAM L0004739        0.003      4.25      4.65      3.95
SRCPARAM L0004740        0.003      4.25      4.65      3.95
SRCPARAM L0004741        0.003      4.25      4.65      3.95
SRCPARAM L0004742        0.003      4.25      4.65      3.95
SRCPARAM L0004743        0.003      4.25      4.65      3.95
SRCPARAM L0004744        0.003      4.25      4.65      3.95
SRCPARAM L0004745        0.003      4.25      4.65      3.95
SRCPARAM L0004746        0.003      4.25      4.65      3.95
SRCPARAM L0004747        0.003      4.25      4.65      3.95
SRCPARAM L0004748        0.003      4.25      4.65      3.95
SRCPARAM L0004749        0.003      4.25      4.65      3.95
SRCPARAM L0004750        0.003      4.25      4.65      3.95
SRCPARAM L0004751        0.003      4.25      4.65      3.95
SRCPARAM L0004752        0.003      4.25      4.65      3.95
SRCPARAM L0004753        0.003      4.25      4.65      3.95
SRCPARAM L0004754        0.003      4.25      4.65      3.95
SRCPARAM L0004755        0.003      4.25      4.65      3.95
SRCPARAM L0004756        0.003      4.25      4.65      3.95
SRCPARAM L0004757        0.003      4.25      4.65      3.95
SRCPARAM L0004758        0.003      4.25      4.65      3.95
SRCPARAM L0004759        0.003      4.25      4.65      3.95
SRCPARAM L0004760        0.003      4.25      4.65      3.95
SRCPARAM L0004761        0.003      4.25      4.65      3.95
SRCPARAM L0004762        0.003      4.25      4.65      3.95
SRCPARAM L0004763        0.003      4.25      4.65      3.95
SRCPARAM L0004764        0.003      4.25      4.65      3.95
SRCPARAM L0004765        0.003      4.25      4.65      3.95
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   SRCPARAM L0004766         0.003      4.25      4.65      3.95
   SRCPARAM L0004767         0.003      4.25      4.65      3.95
   SRCPARAM L0004768         0.003      4.25      4.65      3.95
   SRCPARAM L0004769         0.003      4.25      4.65      3.95
   SRCPARAM L0004770         0.003      4.25      4.65      3.95
   SRCPARAM L0004771         0.003      4.25      4.65      3.95
   SRCPARAM L0004772         0.003      4.25      4.65      3.95
   SRCPARAM L0004773         0.003      4.25      4.65      3.95
   SRCPARAM L0004774         0.003      4.25      4.65      3.95
   SRCPARAM L0004775         0.003      4.25      4.65      3.95
   SRCPARAM L0004776         0.003      4.25      4.65      3.95
   SRCPARAM L0004777         0.003      4.25      4.65      3.95
   SRCPARAM L0004778         0.003      4.25      4.65      3.95
   SRCPARAM L0004779         0.003      4.25      4.65      3.95
   SRCPARAM L0004780         0.003      4.25      4.65      3.95
   SRCPARAM L0004781         0.003      4.25      4.65      3.95
   SRCPARAM L0004782         0.003      4.25      4.65      3.95
   SRCPARAM L0004783         0.003      4.25      4.65      3.95
   SRCPARAM L0004784         0.003      4.25      4.65      3.95
   SRCPARAM L0004785         0.003      4.25      4.65      3.95
   SRCPARAM L0004786         0.003      4.25      4.65      3.95
   SRCPARAM L0004787         0.003      4.25      4.65      3.95
   SRCPARAM L0004788         0.003      4.25      4.65      3.95
   SRCPARAM L0004789         0.003      4.25      4.65      3.95
   SRCPARAM L0004790         0.003      4.25      4.65      3.95
   SRCPARAM L0004791         0.003      4.25      4.65      3.95
   SRCPARAM L0004792         0.003      4.25      4.65      3.95
   SRCPARAM L0004793         0.003      4.25      4.65      3.95
   SRCPARAM L0004794         0.003      4.25      4.65      3.95
   SRCPARAM L0004795         0.003      4.25      4.65      3.95
   SRCPARAM L0004796         0.003      4.25      4.65      3.95
   SRCPARAM L0004797         0.003      4.25      4.65      3.95
   SRCPARAM L0004798         0.003      4.25      4.65      3.95
   SRCPARAM L0004799         0.003      4.25      4.65      3.95
   SRCPARAM L0004800         0.003      4.25      4.65      3.95
   SRCPARAM L0004801         0.003      4.25      4.65      3.95
   SRCPARAM L0004802         0.003      4.25      4.65      3.95
   SRCPARAM L0004803         0.003      4.25      4.65      3.95
   SRCPARAM L0004804         0.003      4.25      4.65      3.95
   SRCPARAM L0004805         0.003      4.25      4.65      3.95
   SRCPARAM L0004806         0.003      4.25      4.65      3.95
   SRCPARAM L0004807         0.003      4.25      4.65      3.95
   SRCPARAM L0004808         0.003      4.25      4.65      3.95
   SRCPARAM L0004809         0.003      4.25      4.65      3.95
   SRCPARAM L0004810         0.003      4.25      4.65      3.95
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** LINE VOLUME Source ID = NRD2
   SRCPARAM L0004811     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004812     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004813     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004814     0.000008852      3.40      5.12      3.16
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SRCPARAM L0004815     0.000008852      3.40      5.12      3.16
SRCPARAM L0004816     0.000008852      3.40      5.12      3.16
SRCPARAM L0004817     0.000008852      3.40      5.12      3.16
SRCPARAM L0004818     0.000008852      3.40      5.12      3.16
SRCPARAM L0004819     0.000008852      3.40      5.12      3.16
SRCPARAM L0004820     0.000008852      3.40      5.12      3.16
SRCPARAM L0004821     0.000008852      3.40      5.12      3.16
SRCPARAM L0004822     0.000008852      3.40      5.12      3.16
SRCPARAM L0004823     0.000008852      3.40      5.12      3.16
SRCPARAM L0004824     0.000008852      3.40      5.12      3.16
SRCPARAM L0004825     0.000008852      3.40      5.12      3.16
SRCPARAM L0004826     0.000008852      3.40      5.12      3.16
SRCPARAM L0004827     0.000008852      3.40      5.12      3.16
SRCPARAM L0004828     0.000008852      3.40      5.12      3.16
SRCPARAM L0004829     0.000008852      3.40      5.12      3.16
SRCPARAM L0004830     0.000008852      3.40      5.12      3.16
SRCPARAM L0004831     0.000008852      3.40      5.12      3.16
SRCPARAM L0004832     0.000008852      3.40      5.12      3.16
SRCPARAM L0004833     0.000008852      3.40      5.12      3.16
SRCPARAM L0004834     0.000008852      3.40      5.12      3.16
SRCPARAM L0004835     0.000008852      3.40      5.12      3.16
SRCPARAM L0004836     0.000008852      3.40      5.12      3.16
SRCPARAM L0004837     0.000008852      3.40      5.12      3.16
SRCPARAM L0004838     0.000008852      3.40      5.12      3.16
SRCPARAM L0004839     0.000008852      3.40      5.12      3.16
SRCPARAM L0004840     0.000008852      3.40      5.12      3.16
SRCPARAM L0004841     0.000008852      3.40      5.12      3.16
SRCPARAM L0004842     0.000008852      3.40      5.12      3.16
SRCPARAM L0004843     0.000008852      3.40      5.12      3.16
SRCPARAM L0004844     0.000008852      3.40      5.12      3.16
SRCPARAM L0004845     0.000008852      3.40      5.12      3.16
SRCPARAM L0004846     0.000008852      3.40      5.12      3.16
SRCPARAM L0004847     0.000008852      3.40      5.12      3.16
SRCPARAM L0004848     0.000008852      3.40      5.12      3.16
SRCPARAM L0004849     0.000008852      3.40      5.12      3.16
SRCPARAM L0004850     0.000008852      3.40      5.12      3.16
SRCPARAM L0004851     0.000008852      3.40      5.12      3.16
SRCPARAM L0004852     0.000008852      3.40      5.12      3.16
SRCPARAM L0004853     0.000008852      3.40      5.12      3.16
SRCPARAM L0004854     0.000008852      3.40      5.12      3.16
SRCPARAM L0004855     0.000008852      3.40      5.12      3.16
SRCPARAM L0004856     0.000008852      3.40      5.12      3.16
SRCPARAM L0004857     0.000008852      3.40      5.12      3.16
SRCPARAM L0004858     0.000008852      3.40      5.12      3.16
SRCPARAM L0004859     0.000008852      3.40      5.12      3.16
SRCPARAM L0004860     0.000008852      3.40      5.12      3.16
SRCPARAM L0004861     0.000008852      3.40      5.12      3.16
SRCPARAM L0004862     0.000008852      3.40      5.12      3.16
SRCPARAM L0004863     0.000008852      3.40      5.12      3.16
SRCPARAM L0004864     0.000008852      3.40      5.12      3.16
SRCPARAM L0004865     0.000008852      3.40      5.12      3.16
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SRCPARAM L0004866     0.000008852      3.40      5.12      3.16
SRCPARAM L0004867     0.000008852      3.40      5.12      3.16
SRCPARAM L0004868     0.000008852      3.40      5.12      3.16
SRCPARAM L0004869     0.000008852      3.40      5.12      3.16
SRCPARAM L0004870     0.000008852      3.40      5.12      3.16
SRCPARAM L0004871     0.000008852      3.40      5.12      3.16
SRCPARAM L0004872     0.000008852      3.40      5.12      3.16
SRCPARAM L0004873     0.000008852      3.40      5.12      3.16
SRCPARAM L0004874     0.000008852      3.40      5.12      3.16
SRCPARAM L0004875     0.000008852      3.40      5.12      3.16
SRCPARAM L0004876     0.000008852      3.40      5.12      3.16
SRCPARAM L0004877     0.000008852      3.40      5.12      3.16
SRCPARAM L0004878     0.000008852      3.40      5.12      3.16
SRCPARAM L0004879     0.000008852      3.40      5.12      3.16
SRCPARAM L0004880     0.000008852      3.40      5.12      3.16
SRCPARAM L0004881     0.000008852      3.40      5.12      3.16
SRCPARAM L0004882     0.000008852      3.40      5.12      3.16
SRCPARAM L0004883     0.000008852      3.40      5.12      3.16
SRCPARAM L0004884     0.000008852      3.40      5.12      3.16
SRCPARAM L0004885     0.000008852      3.40      5.12      3.16
SRCPARAM L0004886     0.000008852      3.40      5.12      3.16
SRCPARAM L0004887     0.000008852      3.40      5.12      3.16
SRCPARAM L0004888     0.000008852      3.40      5.12      3.16
SRCPARAM L0004889     0.000008852      3.40      5.12      3.16
SRCPARAM L0004890     0.000008852      3.40      5.12      3.16
SRCPARAM L0004891     0.000008852      3.40      5.12      3.16
SRCPARAM L0004892     0.000008852      3.40      5.12      3.16
SRCPARAM L0004893     0.000008852      3.40      5.12      3.16
SRCPARAM L0004894     0.000008852      3.40      5.12      3.16
SRCPARAM L0004895     0.000008852      3.40      5.12      3.16
SRCPARAM L0004896     0.000008852      3.40      5.12      3.16
SRCPARAM L0004897     0.000008852      3.40      5.12      3.16
SRCPARAM L0004898     0.000008852      3.40      5.12      3.16
SRCPARAM L0004899     0.000008852      3.40      5.12      3.16
SRCPARAM L0004900     0.000008852      3.40      5.12      3.16
SRCPARAM L0004901     0.000008852      3.40      5.12      3.16
SRCPARAM L0004902     0.000008852      3.40      5.12      3.16
SRCPARAM L0004903     0.000008852      3.40      5.12      3.16
SRCPARAM L0004904     0.000008852      3.40      5.12      3.16
SRCPARAM L0004905     0.000008852      3.40      5.12      3.16
SRCPARAM L0004906     0.000008852      3.40      5.12      3.16
SRCPARAM L0004907     0.000008852      3.40      5.12      3.16
SRCPARAM L0004908     0.000008852      3.40      5.12      3.16
SRCPARAM L0004909     0.000008852      3.40      5.12      3.16
SRCPARAM L0004910     0.000008852      3.40      5.12      3.16
SRCPARAM L0004911     0.000008852      3.40      5.12      3.16
SRCPARAM L0004912     0.000008852      3.40      5.12      3.16
SRCPARAM L0004913     0.000008852      3.40      5.12      3.16
SRCPARAM L0004914     0.000008852      3.40      5.12      3.16
SRCPARAM L0004915     0.000008852      3.40      5.12      3.16
SRCPARAM L0004916     0.000008852      3.40      5.12      3.16
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   SRCPARAM L0004917     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004918     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004919     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004920     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004921     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004922     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004923     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004924     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004925     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004926     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004927     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004928     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004929     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004930     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004931     0.000008852      3.40      5.12      3.16
   SRCPARAM L0004932     0.000008852      3.40      5.12      3.16
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** LINE VOLUME Source ID = NRD3
   SRCPARAM L0004933     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004934     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004935     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004936     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004937     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004938     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004939     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004940     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004941     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004942     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004943     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004944     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004945     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004946     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004947     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004948     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004949     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004950     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004951     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004952     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004953     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004954     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004955     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004956     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004957     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004958     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004959     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004960     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004961     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004962     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004963     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004964     0.0075784753      4.25      4.65      3.95
   SRCPARAM L0004965     0.0075784753      4.25      4.65      3.95
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SRCPARAM L0004966     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004967     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004968     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004969     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004970     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004971     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004972     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004973     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004974     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004975     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004976     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004977     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004978     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004979     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004980     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004981     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004982     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004983     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004984     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004985     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004986     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004987     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004988     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004989     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004990     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004991     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004992     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004993     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004994     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004995     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004996     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004997     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004998     0.0075784753      4.25      4.65      3.95
SRCPARAM L0004999     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005000     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005001     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005002     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005003     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005004     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005005     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005006     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005007     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005008     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005009     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005010     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005011     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005012     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005013     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005014     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005015     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005016     0.0075784753      4.25      4.65      3.95
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SRCPARAM L0005017     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005018     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005019     0.0075784753      4.25      4.65      3.95
SRCPARAM L0005020     0.0075784753      4.25      4.65      3.95
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   SRCPARAM L0005162     0.0043939394      4.25      4.65      3.95
   SRCPARAM L0005163     0.0043939394      4.25      4.65      3.95
   SRCPARAM L0005164     0.0043939394      4.25      4.65      3.95
   SRCPARAM L0005165     0.0043939394      4.25      4.65      3.95
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SRCPARAM L0005303     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005304     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005305     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005306     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005307     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005308     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005309     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005310     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005311     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005312     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005313     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005314     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005315     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005316     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005317     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005318     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005319     0.0043939394      4.25      4.65      3.95
SRCPARAM L0005320     0.0043939394      4.25      4.65      3.95
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** ------------------------------------------------------------------
   SRCPARAM SPILE        1.1993E-06     1.000        24
   AREAVERT SPILE        256392.826 4090627.404 256299.163 4090697.866
   AREAVERT SPILE        256191.750 4090755.439 256068.011 4090782.078
   AREAVERT SPILE        255998.408 4090717.630 256015.594 4090546.630
   AREAVERT SPILE        256101.524 4090442.655 256235.575 4090404.846
   AREAVERT SPILE        256319.786 4090522.570 256397.123 4090616.233
   AREAVERT SPILE        256471.022 4090567.253 256367.906 4090398.831
   AREAVERT SPILE        256251.901 4090352.429 256086.916 4090379.926
   AREAVERT SPILE        255994.971 4090471.871 255907.323 4090529.444
   AREAVERT SPILE        255888.418 4090690.992 255956.303 4090820.746
   AREAVERT SPILE        256047.388 4090871.445 256208.936 4090852.540
   AREAVERT SPILE        256367.047 4090767.470 256467.585 4090678.962
   AREAVERT SPILE        256508.831 4090610.218 256478.756 4090574.128
   SRCPARAM SPLNT            0.028     1.000    29.667     1.000
   SRCPARAM NASTK            0.046     9.144   400.000       20       1.3
   SRCPARAM NAPLNT           0.039     1.000    10.900     1.000
   SRCPARAM NMPLNT           0.013     1.000     5.637     1.000
   SRCPARAM NPLNT             0.29     1.000    49.235     1.000
   SRCPARAM NPILE        2.9963E-06     1.000        11
   AREAVERT NPILE        256496.869 4093919.057 256616.926 4093910.549
   AREAVERT NPILE        256718.077 4093856.665 256764.399 4093816.016
   AREAVERT NPILE        256782.360 4093751.733 256777.633 4093684.614
   AREAVERT NPILE        256734.148 4093663.817 256621.653 4093687.450
   AREAVERT NPILE        256558.316 4093736.607 256491.197 4093808.453
   AREAVERT NPILE        256469.454 4093903.932
   SRCPARAM NMINE1             0.0     1.000    56.240     1.000
   SRCPARAM NMINE2             0.0     1.000    56.240     1.000
   SRCPARAM NMINE3             0.0     1.000    56.240     1.000
   SRCPARAM NMINE4             0.0     1.000    56.240     1.000
   SRCPARAM NMINE5             0.0     1.000    56.240     1.000
   SRCPARAM NMINE6             0.0     1.000    56.240     1.000
   SRCPARAM NMINE7             0.0     1.000    56.240     1.000
   SRCPARAM NMINE8          0.2455     1.000    56.240     1.000
   SRCPARAM NMINE9          0.2455     1.000    56.240     1.000
   SRCPARAM SRMPT              0.0     4.572    16.916     1.000
   SRCPARAM SAPLT            0.016     4.572    24.691     1.000
   SRCPARAM SASTK            0.046     9.144   399.983       20       1.3
   SRCPARAM SMINE             0.05     1.000    56.240     1.000

SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED "PM10_24hr (1).rou"
RE FINISHED
**
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**
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** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** Auto-Generated Plotfiles
   PLOTFILE 24 NAPLNT 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G001.PLT" 31
   PLOTFILE 24 NASTK 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G002.PLT" 32
   PLOTFILE 24 NMINE1 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G003.PLT" 33
   PLOTFILE 24 NMINE2 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G004.PLT" 34
   PLOTFILE 24 NMINE3 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G005.PLT" 35
   PLOTFILE 24 NMINE4 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G006.PLT" 36
   PLOTFILE 24 NMINE5 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G007.PLT" 37
   PLOTFILE 24 NMINE6 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G008.PLT" 38
   PLOTFILE 24 NMINE7 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G009.PLT" 39
   PLOTFILE 24 NMINE8 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G010.PLT" 40
   PLOTFILE 24 NMINE9 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G011.PLT" 41
   PLOTFILE 24 NMPLNT 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G012.PLT" 42
   PLOTFILE 24 NPILE 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G013.PLT" 43
   PLOTFILE 24 NPLNT 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G014.PLT" 44
   PLOTFILE 24 NRD1 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G015.PLT" 45
   PLOTFILE 24 NRD2 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G016.PLT" 46
   PLOTFILE 24 NRD3 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G017.PLT" 47
   PLOTFILE 24 NSNK 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G018.PLT" 48
   PLOTFILE 24 SPILE 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G019.PLT" 49
   PLOTFILE 24 SPLNT 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G020.PLT" 50
   PLOTFILE 24 SRD1 1ST "C:\z_AERMOD\Rockfield\0424 PM
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Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G021.PLT" 51
   PLOTFILE 24 SSNK 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G022.PLT" 52
   PLOTFILE 24 SAPLT 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G023.PLT" 53
   PLOTFILE 24 SASTK 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G024.PLT" 54
   PLOTFILE 24 SMINE 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G025.PLT" 55
   PLOTFILE 24 SRMPT 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G026.PLT" 56
   PLOTFILE 24 ALL 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1GALL.PLT" 57
   PLOTFILE 24 SOUTH 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G027.PLT" 58
   PLOTFILE 24 NORTH 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G028.PLT" 59
   PLOTFILE 24 POSITIVE 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G029.PLT" 60
   PLOTFILE 24 NEGATIVE 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_24hr_v0.7\PM10AA.AD\24H1G030.PLT" 61
   SUMMFILE "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_24hr_v0.7\PM10_24hr (1).sum"
OU FINISHED
**
**************************************
** Project Parameters
**************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
```

x	y	PM10 24-Hour Concentration (ug/m3)
255375.88	4092691.89	0.24
255343.21	4092706.37	0.16
257630.09	4094669.59	0.14
257769.44	4094771.3	-0.03
255044.57	4093571.09	-0.14
257525.41	4094539.68	-0.18
257664.98	4094641.66	-0.20
255048.61	4093615.48	-0.28
257502.65	4094547.81	-0.32
255408.54	4092677.41	-0.36
255190.79	4092604.93	-0.49
257782.34	4094750.87	-0.50
258014.58	4094383.08	-0.50
254878.59	4093586.17	-0.51
257226.01	4094312	-0.53
255223.45	4092590.45	-0.55
255496	4092777.28	-0.57
254874.56	4093541.78	-0.58
258027.49	4094362.65	-0.58
255040.54	4093526.69	-0.63
255447.47	4093106.85	-0.68
255217.33	4093080.85	-0.74
255140.94	4093040.61	-0.75
255267.75	4093845.05	-0.79
255310.55	4092720.84	-0.80
257607.83	4094677.54	-0.80
258001.68	4094403.51	-0.80
255256.12	4092575.98	-0.81
257715.9	4094265.93	-0.84
255441.2	4092662.94	-0.87

APPENDIX I8 PM10-ANNUAL
MODELING FILES

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**
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**
** AERMOD Input Produced by:
** AERMOD View Ver. 13.0.0
** Lakes Environmental Software Inc.
** Date: 4/24/2026
** File: C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA.inp
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE Rockfield PM10 Annual
   MODELOPT DFAULT CONC
   AVERTIME ANNUAL
   POLLUTID PM_10
   FLAGPOLE 1.00
   RUNORNOT RUN
   ERRORFIL PM10_24hr.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Parameters **
   SRCPARAM SSNK               0.0     0.000   133.356     1.000
   SRCPARAM NSNK               0.0     0.000   134.565     1.000
** LINE VOLUME Source ID = NRD1
   SRCPARAM L0004478     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004479     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004480     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004481     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004482     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004483     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004484     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004485     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004486     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004487     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004488     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004489     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004490     0.0009136364      4.25      4.65      3.95
```

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SRCPARAM L0004491     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004492     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004493     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004494     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004495     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004496     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004497     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004498     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004499     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004500     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004501     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004502     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004503     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004504     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004505     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004506     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004507     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004508     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004509     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004510     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004511     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004512     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004513     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004514     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004515     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004516     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004517     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004518     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004519     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004520     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004521     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004522     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004523     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004524     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004525     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004526     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004527     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004528     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004529     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004530     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004531     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004532     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004533     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004534     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004535     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004536     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004537     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004538     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004539     0.0009136364      4.25      4.65      3.95
SRCPARAM L0004540     0.0009136364      4.25      4.65      3.95
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   SRCPARAM L0004541     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004542     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004543     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004544     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004545     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004546     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004547     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004548     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004549     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004550     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004551     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004552     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004553     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004554     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004555     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004556     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004557     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004558     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004559     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004560     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004561     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004562     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004563     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004564     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004565     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004566     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004567     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004568     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004569     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004570     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004571     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004572     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004573     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004574     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004575     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004576     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004577     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004578     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004579     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004580     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004581     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004582     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004583     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004584     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004585     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004586     0.0009136364      4.25      4.65      3.95
   SRCPARAM L0004587     0.0009136364      4.25      4.65      3.95
** ------------------------------------------------------------------
** LINE VOLUME Source ID = NRD2
   SRCPARAM L0004588     0.000005721      3.40      5.12      3.16
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SRCPARAM L0004589     0.000005721      3.40      5.12      3.16
SRCPARAM L0004590     0.000005721      3.40      5.12      3.16
SRCPARAM L0004591     0.000005721      3.40      5.12      3.16
SRCPARAM L0004592     0.000005721      3.40      5.12      3.16
SRCPARAM L0004593     0.000005721      3.40      5.12      3.16
SRCPARAM L0004594     0.000005721      3.40      5.12      3.16
SRCPARAM L0004595     0.000005721      3.40      5.12      3.16
SRCPARAM L0004596     0.000005721      3.40      5.12      3.16
SRCPARAM L0004597     0.000005721      3.40      5.12      3.16
SRCPARAM L0004598     0.000005721      3.40      5.12      3.16
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SRCPARAM L0004638     0.000005721      3.40      5.12      3.16
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   SRCPARAM L0004714     0.0051973094      4.25      4.65      3.95
   SRCPARAM L0004715     0.0051973094      4.25      4.65      3.95
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SRCPARAM L0004883     0.0051973094      4.25      4.65      3.95
SRCPARAM L0004884     0.0051973094      4.25      4.65      3.95
SRCPARAM L0004885     0.0051973094      4.25      4.65      3.95
SRCPARAM L0004886     0.0051973094      4.25      4.65      3.95
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   SRCPARAM L0004901     0.0051973094      4.25      4.65      3.95
   SRCPARAM L0004902     0.0051973094      4.25      4.65      3.95
   SRCPARAM L0004903     0.0051973094      4.25      4.65      3.95
   SRCPARAM L0004904     0.0051973094      4.25      4.65      3.95
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   SRCPARAM L0004928     0.0051973094      4.25      4.65      3.95
   SRCPARAM L0004929     0.0051973094      4.25      4.65      3.95
   SRCPARAM L0004930     0.0051973094      4.25      4.65      3.95
   SRCPARAM L0004931     0.0051973094      4.25      4.65      3.95
   SRCPARAM L0004932     0.0051973094      4.25      4.65      3.95
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** LINE VOLUME Source ID = SRD1
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   SRCPARAM L0004934     0.001630303      4.25      4.65      3.95
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SRCPARAM L0004937     0.001630303      4.25      4.65      3.95
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   AREAVERT SPILE        256392.826 4090627.404 256299.163 4090697.866
   AREAVERT SPILE        256191.750 4090755.439 256068.011 4090782.078
   AREAVERT SPILE        255998.408 4090717.630 256015.594 4090546.630
   AREAVERT SPILE        256101.524 4090442.655 256235.575 4090404.846
   AREAVERT SPILE        256319.786 4090522.570 256397.123 4090616.233
   AREAVERT SPILE        256471.022 4090567.253 256367.906 4090398.831
   AREAVERT SPILE        256251.901 4090352.429 256086.916 4090379.926
   AREAVERT SPILE        255994.971 4090471.871 255907.323 4090529.444
   AREAVERT SPILE        255888.418 4090690.992 255956.303 4090820.746
   AREAVERT SPILE        256047.388 4090871.445 256208.936 4090852.540
   AREAVERT SPILE        256367.047 4090767.470 256467.585 4090678.962
   AREAVERT SPILE        256508.831 4090610.218 256478.756 4090574.128
   SRCPARAM SPLNT            0.044     1.000    29.667     1.000
   SRCPARAM NASTK             0.02     9.144   400.000        20       1.3
   SRCPARAM NAPLNT       0.0112619651     1.000    10.900     1.000
   SRCPARAM NMPLNT       0.0086752059     1.000     5.637     1.000
   SRCPARAM NPLNT           0.1685     1.000    49.235     1.000
   SRCPARAM NPILE        2.9963E-06     1.000        11
   AREAVERT NPILE        256496.869 4093919.057 256616.926 4093910.549
   AREAVERT NPILE        256718.077 4093856.665 256764.399 4093816.016
   AREAVERT NPILE        256782.360 4093751.733 256777.633 4093684.614
   AREAVERT NPILE        256734.148 4093663.817 256621.653 4093687.450
   AREAVERT NPILE        256558.316 4093736.607 256491.197 4093808.453
   AREAVERT NPILE        256469.454 4093903.932
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   SRCPARAM NMINE2            0.0     1.000    56.240     1.000
   SRCPARAM NMINE3            0.0     1.000    56.240     1.000
   SRCPARAM NMINE4            0.0     1.000    56.240     1.000
   SRCPARAM NMINE5            0.0     1.000    56.240     1.000
   SRCPARAM NMINE6            0.0     1.000    56.240     1.000
   SRCPARAM NMINE7            0.0     1.000    56.240     1.000
   SRCPARAM NMINE8        0.22011     1.000    56.240     1.000
   SRCPARAM NMINE9        0.22011     1.000    56.240     1.000
   SRCPARAM SRMPT           0.003     4.572    16.916     1.000
   SRCPARAM SAPLT           0.011     4.572    24.691     1.000
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   SRCPARAM SASTK             0.02     9.144   399.983        20       1.3
   SRCPARAM SMINE           0.0011     1.000    56.240     1.000

SO FINISHED
**
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** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED "PM10_AA (1).rou"
RE FINISHED
**
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
** Auto-Generated Plotfiles
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   PLOTFILE ANNUAL NASTK "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
(1).AD\AN00G002.PLT" 32
   PLOTFILE ANNUAL NMINE1 "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
(1).AD\AN00G003.PLT" 33
   PLOTFILE ANNUAL NMINE2 "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
(1).AD\AN00G004.PLT" 34
   PLOTFILE ANNUAL NMINE3 "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
(1).AD\AN00G005.PLT" 35
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   PLOTFILE ANNUAL NMINE6 "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
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   PLOTFILE ANNUAL NMINE8 "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
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(1).AD\AN00G014.PLT" 44
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(1).AD\AN00G015.PLT" 45
   PLOTFILE ANNUAL NRD2 "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
(1).AD\AN00G016.PLT" 46
   PLOTFILE ANNUAL NRD3 "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
(1).AD\AN00G017.PLT" 47
   PLOTFILE ANNUAL NSNK "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
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   PLOTFILE ANNUAL SPILE "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
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   PLOTFILE ANNUAL SPLNT "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
(1).AD\AN00G020.PLT" 50
   PLOTFILE ANNUAL SRD1 "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
(1).AD\AN00G021.PLT" 51
   PLOTFILE ANNUAL SSNK "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
(1).AD\AN00G022.PLT" 52
   PLOTFILE ANNUAL SAPLT "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
(1).AD\AN00G023.PLT" 53
   PLOTFILE ANNUAL SASTK "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
(1).AD\AN00G024.PLT" 54
   PLOTFILE ANNUAL SMINE "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
(1).AD\AN00G025.PLT" 55
   PLOTFILE ANNUAL SRMPT "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
(1).AD\AN00G026.PLT" 56
   PLOTFILE ANNUAL ALL "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
(1).AD\AN00GALL.PLT" 57
   PLOTFILE ANNUAL SOUTH "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
(1).AD\AN00G027.PLT" 58
   PLOTFILE ANNUAL NORTH "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA
(1).AD\AN00G028.PLT" 59
   PLOTFILE ANNUAL POSITIVE "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_AA_v0.7\PM10_AA (1).AD\AN00G029.PLT" 60
   PLOTFILE ANNUAL NEGATIVE "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM10_AA_v0.7\PM10_AA (1).AD\AN00G030.PLT" 61
   SUMMFILE "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM10_AA_v0.7\PM10_AA (1).sum"
OU FINISHED
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** Project Parameters
**************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
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x	y	PM10 Annual Concentration (ug/m3)
257950.07	4094485.24	-0.11
257937.17	4094505.68	-0.11
257962.97	4094464.81	-0.11
257898.46	4094566.97	-0.11
257924.27	4094526.11	-0.11
257911.37	4094546.54	-0.11
257975.88	4094444.38	-0.11
257885.56	4094587.41	-0.11
257872.66	4094607.84	-0.12
257711.02	4094807.99	-0.12
257988.78	4094423.94	-0.12
257733.78	4094799.86	-0.12
257688.26	4094816.11	-0.12
257769.44	4094771.3	-0.12
257665.5	4094824.24	-0.12
257859.76	4094628.27	-0.12
257782.34	4094750.87	-0.12
258001.68	4094403.51	-0.12
258014.58	4094383.08	-0.13
257642.75	4094832.37	-0.13
258027.49	4094362.65	-0.13
255213.8	4093272.43	-0.13
255227.2	4093239.32	-0.13
255200.39	4093305.55	-0.13
257795.24	4094730.44	-0.13
258040.39	4094342.21	-0.13
254914.6	4093807.34	-0.13
254904.91	4093761.7	-0.13
255251.35	4092534.02	-0.13
255193.69	4093340.27	-0.13

APPENDIX I9 PM2.5-24HR
MODELING FILES

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**
** AERMOD Input Produced by:
** AERMOD View Ver. 13.0.0
** Lakes Environmental Software Inc.
** Date: 4/25/2026
** File: C:\z_AERMOD\Rockfield\0424 PM Rerun\PM25_24hr_v0.7\PM25_24hr.inp
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE Rockfield PM2.5 24hr
   MODELOPT DFAULT CONC
   AVERTIME 24
   POLLUTID PM_2.5
   FLAGPOLE 1.00
   RUNORNOT RUN
   ERRORFIL PM25_24hr.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Parameters **
   SRCPARAM SSNK              0.0     0.000   133.356     1.000
   SRCPARAM NSNK              0.0     0.000   134.565     1.000
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   SRCPARAM L0004919     0.0007889091      4.25      4.65      3.95
   SRCPARAM L0004920     0.0007889091      4.25      4.65      3.95
   SRCPARAM L0004921     0.0007889091      4.25      4.65      3.95
   SRCPARAM L0004922     0.0007889091      4.25      4.65      3.95
   SRCPARAM L0004923     0.0007889091      4.25      4.65      3.95
   SRCPARAM L0004924     0.0007889091      4.25      4.65      3.95
   SRCPARAM L0004925     0.0007889091      4.25      4.65      3.95
   SRCPARAM L0004926     0.0007889091      4.25      4.65      3.95
   SRCPARAM L0004927     0.0007889091      4.25      4.65      3.95
   SRCPARAM L0004928     0.0007889091      4.25      4.65      3.95
   SRCPARAM L0004929     0.0007889091      4.25      4.65      3.95
   SRCPARAM L0004930     0.0007889091      4.25      4.65      3.95
   SRCPARAM L0004931     0.0007889091      4.25      4.65      3.95
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SRCPARAM L0004932     0.0007889091      4.25      4.65      3.95
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SRCPARAM L0004934     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004935     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004936     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004937     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004938     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004939     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004940     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004941     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004942     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004943     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004944     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004945     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004946     0.0007889091      4.25      4.65      3.95
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SRCPARAM L0004948     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004949     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004950     0.0007889091      4.25      4.65      3.95
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SRCPARAM L0004968     0.0007889091      4.25      4.65      3.95
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SRCPARAM L0004974     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004975     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004976     0.0007889091      4.25      4.65      3.95
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SRCPARAM L0004978     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004979     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004980     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004981     0.0007889091      4.25      4.65      3.95
SRCPARAM L0004982     0.0007889091      4.25      4.65      3.95
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   SRCPARAM L0004996     0.0007889091      4.25      4.65      3.95
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   SRCPARAM L0005027     0.0007889091      4.25      4.65      3.95
** ------------------------------------------------------------------
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   SRCPARAM L0005031     0.00000187      3.40      5.12      3.16
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SRCPARAM L0005081     0.00000187      3.40      5.12      3.16
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SRCPARAM L0005096     0.00000187      3.40      5.12      3.16
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SRCPARAM L0005107     0.00000187      3.40      5.12      3.16
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SRCPARAM L0005117     0.00000187      3.40      5.12      3.16
SRCPARAM L0005118     0.00000187      3.40      5.12      3.16
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SRCPARAM L0005127     0.00000187      3.40      5.12      3.16
SRCPARAM L0005128     0.00000187      3.40      5.12      3.16
SRCPARAM L0005129     0.00000187      3.40      5.12      3.16
SRCPARAM L0005130     0.00000187      3.40      5.12      3.16
SRCPARAM L0005131     0.00000187      3.40      5.12      3.16
SRCPARAM L0005132     0.00000187      3.40      5.12      3.16
SRCPARAM L0005133     0.00000187      3.40      5.12      3.16
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   SRCPARAM L0005134     0.00000187      3.40      5.12      3.16
   SRCPARAM L0005135     0.00000187      3.40      5.12      3.16
   SRCPARAM L0005136     0.00000187      3.40      5.12      3.16
   SRCPARAM L0005137     0.00000187      3.40      5.12      3.16
   SRCPARAM L0005138     0.00000187      3.40      5.12      3.16
   SRCPARAM L0005139     0.00000187      3.40      5.12      3.16
   SRCPARAM L0005140     0.00000187      3.40      5.12      3.16
   SRCPARAM L0005141     0.00000187      3.40      5.12      3.16
   SRCPARAM L0005142     0.00000187      3.40      5.12      3.16
   SRCPARAM L0005143     0.00000187      3.40      5.12      3.16
   SRCPARAM L0005144     0.00000187      3.40      5.12      3.16
   SRCPARAM L0005145     0.00000187      3.40      5.12      3.16
   SRCPARAM L0005146     0.00000187      3.40      5.12      3.16
   SRCPARAM L0005147     0.00000187      3.40      5.12      3.16
   SRCPARAM L0005148     0.00000187      3.40      5.12      3.16
   SRCPARAM L0005149     0.00000187      3.40      5.12      3.16
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** LINE VOLUME Source ID = NRD3
   SRCPARAM L0005150     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005151     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005152     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005153     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005154     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005155     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005156     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005157     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005158     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005159     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005160     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005161     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005162     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005163     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005164     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005165     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005166     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005167     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005168     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005169     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005170     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005171     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005172     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005173     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005174     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005175     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005176     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005177     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005178     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005179     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005180     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005181     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005182     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005183     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005184     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005185     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005186     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005187     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005188     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005189     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005190     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005191     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005192     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005193     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005194     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005195     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005196     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005197     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005198     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005199     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005200     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005201     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005202     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005203     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005207     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005208     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005209     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005210     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005211     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005212     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005213     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005214     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005215     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005216     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005217     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005218     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005219     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005220     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005221     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005222     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005223     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005224     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005225     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005226     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005227     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005228     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005229     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005230     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005231     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005232     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005233     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005234     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005236     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005237     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005238     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005239     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005240     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005241     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005242     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005243     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005244     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005245     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005247     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005248     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005249     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005253     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005254     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005257     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005260     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005261     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005262     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005263     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005266     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005267     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005270     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005271     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005272     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005273     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005274     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005275     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005276     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005277     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005278     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005279     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005280     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005281     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005282     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005284     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005285     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005288     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005291     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005292     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005293     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005294     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005295     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005296     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005297     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005298     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005299     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005300     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005301     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005302     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005303     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005304     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005305     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005306     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005311     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005312     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005313     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005314     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005315     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005316     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005317     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005318     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005319     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005320     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005321     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005322     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005323     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005324     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005325     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005326     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005327     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005329     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005330     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005331     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005332     0.0016107623      4.25      4.65      3.95
SRCPARAM L0005333     0.0016107623      4.25      4.65      3.95
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SRCPARAM L0005335     0.0016107623      4.25      4.65      3.95
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   SRCPARAM L0005339     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005340     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005341     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005342     0.0016107623      4.25      4.65      3.95
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   SRCPARAM L0005344     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005345     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005346     0.0016107623      4.25      4.65      3.95
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   SRCPARAM L0005351     0.0016107623      4.25      4.65      3.95
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   SRCPARAM L0005359     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005360     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005361     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005362     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005363     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005364     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005365     0.0016107623      4.25      4.65      3.95
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   SRCPARAM L0005368     0.0016107623      4.25      4.65      3.95
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   SRCPARAM L0005371     0.0016107623      4.25      4.65      3.95
   SRCPARAM L0005372     0.0016107623      4.25      4.65      3.95
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** LINE VOLUME Source ID = SRD1
   SRCPARAM L0005373     0.0010739394      4.25      4.65      3.95
   SRCPARAM L0005374     0.0010739394      4.25      4.65      3.95
   SRCPARAM L0005375     0.0010739394      4.25      4.65      3.95
   SRCPARAM L0005376     0.0010739394      4.25      4.65      3.95
   SRCPARAM L0005377     0.0010739394      4.25      4.65      3.95
   SRCPARAM L0005378     0.0010739394      4.25      4.65      3.95
   SRCPARAM L0005379     0.0010739394      4.25      4.65      3.95
   SRCPARAM L0005380     0.0010739394      4.25      4.65      3.95
   SRCPARAM L0005381     0.0010739394      4.25      4.65      3.95
   SRCPARAM L0005382     0.0010739394      4.25      4.65      3.95
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   SRCPARAM L0005384     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005388     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005389     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005390     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005391     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005392     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005393     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005394     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005395     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005396     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005397     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005398     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005399     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005400     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005401     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005402     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005403     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005404     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005406     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005408     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005409     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005410     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005411     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005412     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005413     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005414     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005415     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005416     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005417     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005418     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005419     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005420     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005421     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005427     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005429     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005431     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005432     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005433     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005434     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005435     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005438     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005439     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005440     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005441     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005442     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005443     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005444     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005445     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005446     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005447     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005448     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005449     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005451     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005452     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005453     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005454     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005455     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005457     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005459     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005460     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005461     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005465     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005469     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005470     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005471     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005472     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005474     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005475     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005476     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005478     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005479     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005480     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005482     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005483     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005484     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005485     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005486     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005487     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005488     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005489     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005490     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005491     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005492     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005496     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005497     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005498     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005499     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005502     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005510     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005512     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005514     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005515     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005516     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005517     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005518     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005519     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005520     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005521     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005522     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005523     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005524     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005526     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005527     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005528     0.0010739394      4.25      4.65      3.95
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SRCPARAM L0005533     0.0010739394      4.25      4.65      3.95
SRCPARAM L0005534     0.0010739394      4.25      4.65      3.95
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   AREAVERT SPILE        256191.750 4090755.439 256068.011 4090782.078
   AREAVERT SPILE        255998.408 4090717.630 256015.594 4090546.630
   AREAVERT SPILE        256101.524 4090442.655 256235.575 4090404.846
   AREAVERT SPILE        256319.786 4090522.570 256397.123 4090616.233
   AREAVERT SPILE        256471.022 4090567.253 256367.906 4090398.831
   AREAVERT SPILE        256251.901 4090352.429 256086.916 4090379.926
   AREAVERT SPILE        255994.971 4090471.871 255907.323 4090529.444
   AREAVERT SPILE        255888.418 4090690.992 255956.303 4090820.746
   AREAVERT SPILE        256047.388 4090871.445 256208.936 4090852.540
   AREAVERT SPILE        256367.047 4090767.470 256467.585 4090678.962
   AREAVERT SPILE        256508.831 4090610.218 256478.756 4090574.128
   SRCPARAM SPLNT         0.008053     1.000    29.667     1.000
   SRCPARAM NASTK          0.01551     9.144   400.000        20       1.3
   SRCPARAM NAPLNT        0.008328     1.000    10.900     1.000
   SRCPARAM NMPLNT             0.0     1.000     5.637     1.000
   SRCPARAM NPLNT           0.0847     1.000    49.235     1.000
   SRCPARAM NPILE        8.7424E-07     1.000        11
   AREAVERT NPILE        256496.869 4093919.057 256616.926 4093910.549
   AREAVERT NPILE        256718.077 4093856.665 256764.399 4093816.016
   AREAVERT NPILE        256782.360 4093751.733 256777.633 4093684.614
   AREAVERT NPILE        256734.148 4093663.817 256621.653 4093687.450
   AREAVERT NPILE        256558.316 4093736.607 256491.197 4093808.453
   AREAVERT NPILE        256469.454 4093903.932
   SRCPARAM NMINE1             0.0     1.000    56.240     1.000
   SRCPARAM NMINE2             0.0     1.000    56.240     1.000
   SRCPARAM NMINE3             0.0     1.000    56.240     1.000
   SRCPARAM NMINE4             0.0     1.000    56.240     1.000
   SRCPARAM NMINE5             0.0     1.000    56.240     1.000
   SRCPARAM NMINE6             0.0     1.000    56.240     1.000
   SRCPARAM NMINE7             0.0     1.000    56.240     1.000
   SRCPARAM NMINE8         0.06209     1.000    56.240     1.000
   SRCPARAM NMINE9         0.06209     1.000    56.240     1.000
   SRCPARAM SRMPT              0.0     4.572    16.916     1.000
   SRCPARAM SAPLT         0.004721     4.572    24.691     1.000
   SRCPARAM SASTK            0.013     9.144   399.983        20       1.3
   SRCPARAM SMINE          0.01777     1.000    56.240     1.000

SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED PM25_24hr.rou
RE FINISHED
**
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**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
** Surface File Path: C:\z_AERMOD\Rockfield\0424 PM Rerun\PM25_24hr_v0.7\..\..\
   SURFFILE ..\..\Fresno_18-22.SFC
** Profile File Path: C:\z_AERMOD\Rockfield\0424 PM Rerun\PM25_24hr_v0.7\..\..\
   PROFFILE ..\..\Fresno_18-22.PFL
   SURFDATA 93193 2018 FRESNO/AIR_TERMINAL
   UAIRDATA 23230 2018 OAKLAND/WSO_AP
   PROFBASE 101.0 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST 8TH
   RECTABLE 24 1ST 8TH
** Auto-Generated Plotfiles
   PLOTFILE 24 NAPLNT 1ST "C:\z_AERMOD\Rockfield\0424 PM
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   PLOTFILE 24 NASTK 1ST "C:\z_AERMOD\Rockfield\0424 PM
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   PLOTFILE 24 NMINE2 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H1G004.PLT" 34
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   PLOTFILE 24 NMINE4 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H1G006.PLT" 36
   PLOTFILE 24 NMINE5 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H1G007.PLT" 37
   PLOTFILE 24 NMINE6 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H1G008.PLT" 38
   PLOTFILE 24 NMINE7 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H1G009.PLT" 39
   PLOTFILE 24 NMINE8 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H1G010.PLT" 40
   PLOTFILE 24 NMINE9 1ST "C:\z_AERMOD\Rockfield\0424 PM
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   PLOTFILE 24 NMPLNT 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H1G012.PLT" 42
   PLOTFILE 24 NPILE 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H1G013.PLT" 43
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   PLOTFILE 24 NRD2 1ST "C:\z_AERMOD\Rockfield\0424 PM
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   PLOTFILE 24 NRD3 1ST "C:\z_AERMOD\Rockfield\0424 PM
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   PLOTFILE 24 NSNK 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H1G018.PLT" 48
   PLOTFILE 24 SPILE 1ST "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H1G019.PLT" 49
   PLOTFILE 24 SPLNT 1ST "C:\z_AERMOD\Rockfield\0424 PM
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   PLOTFILE 24 SRD1 1ST "C:\z_AERMOD\Rockfield\0424 PM
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   PLOTFILE 24 NASTK 8TH "C:\z_AERMOD\Rockfield\0424 PM
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   PLOTFILE 24 NMINE3 8TH "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H8G005.PLT" 66
   PLOTFILE 24 NMINE4 8TH "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H8G006.PLT" 67
   PLOTFILE 24 NMINE5 8TH "C:\z_AERMOD\Rockfield\0424 PM
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   PLOTFILE 24 NMINE6 8TH "C:\z_AERMOD\Rockfield\0424 PM
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   PLOTFILE 24 NMINE9 8TH "C:\z_AERMOD\Rockfield\0424 PM
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   PLOTFILE 24 NRD3 8TH "C:\z_AERMOD\Rockfield\0424 PM
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Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H8G020.PLT" 81
   PLOTFILE 24 SRD1 8TH "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H8G021.PLT" 82
   PLOTFILE 24 SSNK 8TH "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H8G022.PLT" 83
   PLOTFILE 24 SAPLT 8TH "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H8G023.PLT" 84
   PLOTFILE 24 SASTK 8TH "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H8G024.PLT" 85
   PLOTFILE 24 SMINE 8TH "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H8G025.PLT" 86
   PLOTFILE 24 SRMPT 8TH "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H8G026.PLT" 87
   PLOTFILE 24 ALL 8TH "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H8GALL.PLT" 88
   PLOTFILE 24 NORTH 8TH "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H8G027.PLT" 89
   PLOTFILE 24 SOUTH 8TH "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H8G028.PLT" 90
   PLOTFILE 24 POSITIVE 8TH "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H8G029.PLT" 91
   PLOTFILE 24 NEGATIVE 8TH "C:\z_AERMOD\Rockfield\0424 PM
Rerun\PM25_24hr_v0.7\PM25_24HR.AD\24H8G030.PLT" 92
   SUMMFILE "C:\z_AERMOD\Rockfield\0424 PM Rerun\PM25_24hr_v0.7\PM25_24hr.sum"
OU FINISHED
**
**************************************
** Project Parameters
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**************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
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x	y	PM2.5 24-Hour Concentration (ug/m3)
258182.89	4093906.06	-0.015
258196.46	4093836.51	-0.062
254920.57	4093831.12	-0.076
258178.18	4093928.35	-0.077
258015.94	4093890.21	-0.078
258172.54	4093952.33	-0.080
258192.02	4093860.14	-0.081
255081.49	4092775.67	-0.087
255659.93	4093696.02	-0.087
255321.01	4093007.5	-0.095
258187.59	4093883.78	-0.096
255207.95	4092875.03	-0.096
258050.37	4093711.25	-0.099
255094.89	4092742.56	-0.103
254914.6	4093807.34	-0.104
258200.89	4093812.87	-0.104
257882.13	4093704.17	-0.106
255048.61	4093615.48	-0.110
258127.45	4094144.14	-0.113
255206.52	4093511.6	-0.113
254945.37	4093801.13	-0.113
255036.5	4093482.3	-0.114
255187.92	4093694.69	-0.115
254926.54	4093854.89	-0.116
254932.51	4093878.67	-0.119
254725.51	4093870.93	-0.121
255195.52	4093380.51	-0.121
255193.69	4093340.27	-0.122
254904.91	4093761.7	-0.124
255228.46	4093681.98	-0.124

APPENDIX I10 PM2.5-ANNUAL
MODELING FILES

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**
** AERMOD Input Produced by:
** AERMOD View Ver. 13.0.0
** Lakes Environmental Software Inc.
** Date: 4/24/2026
** File: C:\z_AERMOD\Rockfield\0424 PM Rerun\PM25aa_v0.7\PM25aa.inp
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE Rockfield PM2.5 Annual Average
   MODELOPT DFAULT CONC
   AVERTIME ANNUAL
   POLLUTID PM_2.5
   FLAGPOLE 1.00
   RUNORNOT RUN
   ERRORFIL PM25aa.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Parameters **
   SRCPARAM SSNK               0.0     0.000   133.356     1.000
   SRCPARAM NSNK               0.0     0.000   134.565     1.000
** LINE VOLUME Source ID = NRD1
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   SRCPARAM L0003749     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003750     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003751     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003752     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003753     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003754     0.0001909091      4.25      4.65      3.95
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   SRCPARAM L0003756     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003757     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003758     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003759     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003760     0.0001909091      4.25      4.65      3.95
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SRCPARAM L0003762     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003763     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003764     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003765     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003766     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003767     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003768     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003769     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003770     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003771     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003772     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003773     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003774     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003775     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003776     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003777     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003778     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003779     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003780     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003781     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003782     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003783     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003784     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003785     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003786     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003787     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003788     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003789     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003790     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003791     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003792     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003793     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003794     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003795     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003796     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003797     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003798     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003799     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003800     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003801     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003802     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003803     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003804     0.0001909091      4.25      4.65      3.95
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SRCPARAM L0003808     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003809     0.0001909091      4.25      4.65      3.95
SRCPARAM L0003810     0.0001909091      4.25      4.65      3.95
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   SRCPARAM L0003814     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003815     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003816     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003817     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003818     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003819     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003820     0.0001909091      4.25      4.65      3.95
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   SRCPARAM L0003822     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003823     0.0001909091      4.25      4.65      3.95
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   SRCPARAM L0003829     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003830     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003831     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003832     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003833     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003834     0.0001909091      4.25      4.65      3.95
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   SRCPARAM L0003840     0.0001909091      4.25      4.65      3.95
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   SRCPARAM L0003849     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003850     0.0001909091      4.25      4.65      3.95
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   SRCPARAM L0003852     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003853     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003854     0.0001909091      4.25      4.65      3.95
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   SRCPARAM L0003856     0.0001909091      4.25      4.65      3.95
   SRCPARAM L0003857     0.0001909091      4.25      4.65      3.95
** ------------------------------------------------------------------
** LINE VOLUME Source ID = NRD2
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SRCPARAM L0003861     0.000001213      3.40      5.12      3.16
SRCPARAM L0003862     0.000001213      3.40      5.12      3.16
SRCPARAM L0003863     0.000001213      3.40      5.12      3.16
SRCPARAM L0003864     0.000001213      3.40      5.12      3.16
SRCPARAM L0003865     0.000001213      3.40      5.12      3.16
SRCPARAM L0003866     0.000001213      3.40      5.12      3.16
SRCPARAM L0003867     0.000001213      3.40      5.12      3.16
SRCPARAM L0003868     0.000001213      3.40      5.12      3.16
SRCPARAM L0003869     0.000001213      3.40      5.12      3.16
SRCPARAM L0003870     0.000001213      3.40      5.12      3.16
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SRCPARAM L0003872     0.000001213      3.40      5.12      3.16
SRCPARAM L0003873     0.000001213      3.40      5.12      3.16
SRCPARAM L0003874     0.000001213      3.40      5.12      3.16
SRCPARAM L0003875     0.000001213      3.40      5.12      3.16
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SRCPARAM L0003877     0.000001213      3.40      5.12      3.16
SRCPARAM L0003878     0.000001213      3.40      5.12      3.16
SRCPARAM L0003879     0.000001213      3.40      5.12      3.16
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SRCPARAM L0003881     0.000001213      3.40      5.12      3.16
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SRCPARAM L0003894     0.000001213      3.40      5.12      3.16
SRCPARAM L0003895     0.000001213      3.40      5.12      3.16
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SRCPARAM L0003902     0.000001213      3.40      5.12      3.16
SRCPARAM L0003903     0.000001213      3.40      5.12      3.16
SRCPARAM L0003904     0.000001213      3.40      5.12      3.16
SRCPARAM L0003905     0.000001213      3.40      5.12      3.16
SRCPARAM L0003906     0.000001213      3.40      5.12      3.16
SRCPARAM L0003907     0.000001213      3.40      5.12      3.16
SRCPARAM L0003908     0.000001213      3.40      5.12      3.16
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SRCPARAM L0003912     0.000001213      3.40      5.12      3.16
SRCPARAM L0003913     0.000001213      3.40      5.12      3.16
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SRCPARAM L0003915     0.000001213      3.40      5.12      3.16
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SRCPARAM L0003919     0.000001213      3.40      5.12      3.16
SRCPARAM L0003920     0.000001213      3.40      5.12      3.16
SRCPARAM L0003921     0.000001213      3.40      5.12      3.16
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SRCPARAM L0003931     0.000001213      3.40      5.12      3.16
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SRCPARAM L0003935     0.000001213      3.40      5.12      3.16
SRCPARAM L0003936     0.000001213      3.40      5.12      3.16
SRCPARAM L0003937     0.000001213      3.40      5.12      3.16
SRCPARAM L0003938     0.000001213      3.40      5.12      3.16
SRCPARAM L0003939     0.000001213      3.40      5.12      3.16
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SRCPARAM L0003943     0.000001213      3.40      5.12      3.16
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SRCPARAM L0003946     0.000001213      3.40      5.12      3.16
SRCPARAM L0003947     0.000001213      3.40      5.12      3.16
SRCPARAM L0003948     0.000001213      3.40      5.12      3.16
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SRCPARAM L0003952     0.000001213      3.40      5.12      3.16
SRCPARAM L0003953     0.000001213      3.40      5.12      3.16
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SRCPARAM L0003955     0.000001213      3.40      5.12      3.16
SRCPARAM L0003956     0.000001213      3.40      5.12      3.16
SRCPARAM L0003957     0.000001213      3.40      5.12      3.16
SRCPARAM L0003958     0.000001213      3.40      5.12      3.16
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   SRCPARAM L0003961     0.000001213      3.40      5.12      3.16
   SRCPARAM L0003962     0.000001213      3.40      5.12      3.16
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   SRCPARAM L0003968     0.000001213      3.40      5.12      3.16
   SRCPARAM L0003969     0.000001213      3.40      5.12      3.16
   SRCPARAM L0003970     0.000001213      3.40      5.12      3.16
   SRCPARAM L0003971     0.000001213      3.40      5.12      3.16
   SRCPARAM L0003972     0.000001213      3.40      5.12      3.16
   SRCPARAM L0003973     0.000001213      3.40      5.12      3.16
   SRCPARAM L0003974     0.000001213      3.40      5.12      3.16
   SRCPARAM L0003975     0.000001213      3.40      5.12      3.16
   SRCPARAM L0003976     0.000001213      3.40      5.12      3.16
   SRCPARAM L0003977     0.000001213      3.40      5.12      3.16
   SRCPARAM L0003978     0.000001213      3.40      5.12      3.16
   SRCPARAM L0003979     0.000001213      3.40      5.12      3.16
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** LINE VOLUME Source ID = NRD3
   SRCPARAM L0003980     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003981     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003982     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003983     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003984     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003985     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003986     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003987     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003988     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003989     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003990     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003991     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003992     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003993     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003994     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003995     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003996     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003997     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003998     0.001103139      4.25      4.65      3.95
   SRCPARAM L0003999     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004000     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004001     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004002     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004003     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004004     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004005     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004006     0.001103139      4.25      4.65      3.95
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SRCPARAM L0004007     0.001103139      4.25      4.65      3.95
SRCPARAM L0004008     0.001103139      4.25      4.65      3.95
SRCPARAM L0004009     0.001103139      4.25      4.65      3.95
SRCPARAM L0004010     0.001103139      4.25      4.65      3.95
SRCPARAM L0004011     0.001103139      4.25      4.65      3.95
SRCPARAM L0004012     0.001103139      4.25      4.65      3.95
SRCPARAM L0004013     0.001103139      4.25      4.65      3.95
SRCPARAM L0004014     0.001103139      4.25      4.65      3.95
SRCPARAM L0004015     0.001103139      4.25      4.65      3.95
SRCPARAM L0004016     0.001103139      4.25      4.65      3.95
SRCPARAM L0004017     0.001103139      4.25      4.65      3.95
SRCPARAM L0004018     0.001103139      4.25      4.65      3.95
SRCPARAM L0004019     0.001103139      4.25      4.65      3.95
SRCPARAM L0004020     0.001103139      4.25      4.65      3.95
SRCPARAM L0004021     0.001103139      4.25      4.65      3.95
SRCPARAM L0004022     0.001103139      4.25      4.65      3.95
SRCPARAM L0004023     0.001103139      4.25      4.65      3.95
SRCPARAM L0004024     0.001103139      4.25      4.65      3.95
SRCPARAM L0004025     0.001103139      4.25      4.65      3.95
SRCPARAM L0004026     0.001103139      4.25      4.65      3.95
SRCPARAM L0004027     0.001103139      4.25      4.65      3.95
SRCPARAM L0004028     0.001103139      4.25      4.65      3.95
SRCPARAM L0004029     0.001103139      4.25      4.65      3.95
SRCPARAM L0004030     0.001103139      4.25      4.65      3.95
SRCPARAM L0004031     0.001103139      4.25      4.65      3.95
SRCPARAM L0004032     0.001103139      4.25      4.65      3.95
SRCPARAM L0004033     0.001103139      4.25      4.65      3.95
SRCPARAM L0004034     0.001103139      4.25      4.65      3.95
SRCPARAM L0004035     0.001103139      4.25      4.65      3.95
SRCPARAM L0004036     0.001103139      4.25      4.65      3.95
SRCPARAM L0004037     0.001103139      4.25      4.65      3.95
SRCPARAM L0004038     0.001103139      4.25      4.65      3.95
SRCPARAM L0004039     0.001103139      4.25      4.65      3.95
SRCPARAM L0004040     0.001103139      4.25      4.65      3.95
SRCPARAM L0004041     0.001103139      4.25      4.65      3.95
SRCPARAM L0004042     0.001103139      4.25      4.65      3.95
SRCPARAM L0004043     0.001103139      4.25      4.65      3.95
SRCPARAM L0004044     0.001103139      4.25      4.65      3.95
SRCPARAM L0004045     0.001103139      4.25      4.65      3.95
SRCPARAM L0004046     0.001103139      4.25      4.65      3.95
SRCPARAM L0004047     0.001103139      4.25      4.65      3.95
SRCPARAM L0004048     0.001103139      4.25      4.65      3.95
SRCPARAM L0004049     0.001103139      4.25      4.65      3.95
SRCPARAM L0004050     0.001103139      4.25      4.65      3.95
SRCPARAM L0004051     0.001103139      4.25      4.65      3.95
SRCPARAM L0004052     0.001103139      4.25      4.65      3.95
SRCPARAM L0004053     0.001103139      4.25      4.65      3.95
SRCPARAM L0004054     0.001103139      4.25      4.65      3.95
SRCPARAM L0004055     0.001103139      4.25      4.65      3.95
SRCPARAM L0004056     0.001103139      4.25      4.65      3.95
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SRCPARAM L0004057     0.001103139      4.25      4.65      3.95
SRCPARAM L0004058     0.001103139      4.25      4.65      3.95
SRCPARAM L0004059     0.001103139      4.25      4.65      3.95
SRCPARAM L0004060     0.001103139      4.25      4.65      3.95
SRCPARAM L0004061     0.001103139      4.25      4.65      3.95
SRCPARAM L0004062     0.001103139      4.25      4.65      3.95
SRCPARAM L0004063     0.001103139      4.25      4.65      3.95
SRCPARAM L0004064     0.001103139      4.25      4.65      3.95
SRCPARAM L0004065     0.001103139      4.25      4.65      3.95
SRCPARAM L0004066     0.001103139      4.25      4.65      3.95
SRCPARAM L0004067     0.001103139      4.25      4.65      3.95
SRCPARAM L0004068     0.001103139      4.25      4.65      3.95
SRCPARAM L0004069     0.001103139      4.25      4.65      3.95
SRCPARAM L0004070     0.001103139      4.25      4.65      3.95
SRCPARAM L0004071     0.001103139      4.25      4.65      3.95
SRCPARAM L0004072     0.001103139      4.25      4.65      3.95
SRCPARAM L0004073     0.001103139      4.25      4.65      3.95
SRCPARAM L0004074     0.001103139      4.25      4.65      3.95
SRCPARAM L0004075     0.001103139      4.25      4.65      3.95
SRCPARAM L0004076     0.001103139      4.25      4.65      3.95
SRCPARAM L0004077     0.001103139      4.25      4.65      3.95
SRCPARAM L0004078     0.001103139      4.25      4.65      3.95
SRCPARAM L0004079     0.001103139      4.25      4.65      3.95
SRCPARAM L0004080     0.001103139      4.25      4.65      3.95
SRCPARAM L0004081     0.001103139      4.25      4.65      3.95
SRCPARAM L0004082     0.001103139      4.25      4.65      3.95
SRCPARAM L0004083     0.001103139      4.25      4.65      3.95
SRCPARAM L0004084     0.001103139      4.25      4.65      3.95
SRCPARAM L0004085     0.001103139      4.25      4.65      3.95
SRCPARAM L0004086     0.001103139      4.25      4.65      3.95
SRCPARAM L0004087     0.001103139      4.25      4.65      3.95
SRCPARAM L0004088     0.001103139      4.25      4.65      3.95
SRCPARAM L0004089     0.001103139      4.25      4.65      3.95
SRCPARAM L0004090     0.001103139      4.25      4.65      3.95
SRCPARAM L0004091     0.001103139      4.25      4.65      3.95
SRCPARAM L0004092     0.001103139      4.25      4.65      3.95
SRCPARAM L0004093     0.001103139      4.25      4.65      3.95
SRCPARAM L0004094     0.001103139      4.25      4.65      3.95
SRCPARAM L0004095     0.001103139      4.25      4.65      3.95
SRCPARAM L0004096     0.001103139      4.25      4.65      3.95
SRCPARAM L0004097     0.001103139      4.25      4.65      3.95
SRCPARAM L0004098     0.001103139      4.25      4.65      3.95
SRCPARAM L0004099     0.001103139      4.25      4.65      3.95
SRCPARAM L0004100     0.001103139      4.25      4.65      3.95
SRCPARAM L0004101     0.001103139      4.25      4.65      3.95
SRCPARAM L0004102     0.001103139      4.25      4.65      3.95
SRCPARAM L0004103     0.001103139      4.25      4.65      3.95
SRCPARAM L0004104     0.001103139      4.25      4.65      3.95
SRCPARAM L0004105     0.001103139      4.25      4.65      3.95
SRCPARAM L0004106     0.001103139      4.25      4.65      3.95
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SRCPARAM L0004107     0.001103139      4.25      4.65      3.95
SRCPARAM L0004108     0.001103139      4.25      4.65      3.95
SRCPARAM L0004109     0.001103139      4.25      4.65      3.95
SRCPARAM L0004110     0.001103139      4.25      4.65      3.95
SRCPARAM L0004111     0.001103139      4.25      4.65      3.95
SRCPARAM L0004112     0.001103139      4.25      4.65      3.95
SRCPARAM L0004113     0.001103139      4.25      4.65      3.95
SRCPARAM L0004114     0.001103139      4.25      4.65      3.95
SRCPARAM L0004115     0.001103139      4.25      4.65      3.95
SRCPARAM L0004116     0.001103139      4.25      4.65      3.95
SRCPARAM L0004117     0.001103139      4.25      4.65      3.95
SRCPARAM L0004118     0.001103139      4.25      4.65      3.95
SRCPARAM L0004119     0.001103139      4.25      4.65      3.95
SRCPARAM L0004120     0.001103139      4.25      4.65      3.95
SRCPARAM L0004121     0.001103139      4.25      4.65      3.95
SRCPARAM L0004122     0.001103139      4.25      4.65      3.95
SRCPARAM L0004123     0.001103139      4.25      4.65      3.95
SRCPARAM L0004124     0.001103139      4.25      4.65      3.95
SRCPARAM L0004125     0.001103139      4.25      4.65      3.95
SRCPARAM L0004126     0.001103139      4.25      4.65      3.95
SRCPARAM L0004127     0.001103139      4.25      4.65      3.95
SRCPARAM L0004128     0.001103139      4.25      4.65      3.95
SRCPARAM L0004129     0.001103139      4.25      4.65      3.95
SRCPARAM L0004130     0.001103139      4.25      4.65      3.95
SRCPARAM L0004131     0.001103139      4.25      4.65      3.95
SRCPARAM L0004132     0.001103139      4.25      4.65      3.95
SRCPARAM L0004133     0.001103139      4.25      4.65      3.95
SRCPARAM L0004134     0.001103139      4.25      4.65      3.95
SRCPARAM L0004135     0.001103139      4.25      4.65      3.95
SRCPARAM L0004136     0.001103139      4.25      4.65      3.95
SRCPARAM L0004137     0.001103139      4.25      4.65      3.95
SRCPARAM L0004138     0.001103139      4.25      4.65      3.95
SRCPARAM L0004139     0.001103139      4.25      4.65      3.95
SRCPARAM L0004140     0.001103139      4.25      4.65      3.95
SRCPARAM L0004141     0.001103139      4.25      4.65      3.95
SRCPARAM L0004142     0.001103139      4.25      4.65      3.95
SRCPARAM L0004143     0.001103139      4.25      4.65      3.95
SRCPARAM L0004144     0.001103139      4.25      4.65      3.95
SRCPARAM L0004145     0.001103139      4.25      4.65      3.95
SRCPARAM L0004146     0.001103139      4.25      4.65      3.95
SRCPARAM L0004147     0.001103139      4.25      4.65      3.95
SRCPARAM L0004148     0.001103139      4.25      4.65      3.95
SRCPARAM L0004149     0.001103139      4.25      4.65      3.95
SRCPARAM L0004150     0.001103139      4.25      4.65      3.95
SRCPARAM L0004151     0.001103139      4.25      4.65      3.95
SRCPARAM L0004152     0.001103139      4.25      4.65      3.95
SRCPARAM L0004153     0.001103139      4.25      4.65      3.95
SRCPARAM L0004154     0.001103139      4.25      4.65      3.95
SRCPARAM L0004155     0.001103139      4.25      4.65      3.95
SRCPARAM L0004156     0.001103139      4.25      4.65      3.95
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   SRCPARAM L0004157     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004158     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004159     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004160     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004161     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004162     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004163     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004164     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004165     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004166     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004167     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004168     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004169     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004170     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004171     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004172     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004173     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004174     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004175     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004176     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004177     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004178     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004179     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004180     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004181     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004182     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004183     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004184     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004185     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004186     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004187     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004188     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004189     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004190     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004191     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004192     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004193     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004194     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004195     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004196     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004197     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004198     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004199     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004200     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004201     0.001103139      4.25      4.65      3.95
   SRCPARAM L0004202     0.001103139      4.25      4.65      3.95
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** LINE VOLUME Source ID = SRD1
   SRCPARAM L0003583     0.0003454545      4.25      4.65      3.95
   SRCPARAM L0003584     0.0003454545      4.25      4.65      3.95
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SRCPARAM L0003585     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003586     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003587     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003588     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003589     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003590     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003591     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003592     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003593     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003594     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003595     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003596     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003597     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003598     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003599     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003600     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003601     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003602     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003603     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003604     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003605     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003606     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003607     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003608     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003609     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003610     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003611     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003612     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003613     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003614     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003615     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003616     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003617     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003618     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003619     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003620     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003621     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003622     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003623     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003624     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003625     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003626     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003627     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003628     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003629     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003630     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003631     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003632     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003633     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003634     0.0003454545      4.25      4.65      3.95
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SRCPARAM L0003676     0.0003454545      4.25      4.65      3.95
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SRCPARAM L0003680     0.0003454545      4.25      4.65      3.95
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SRCPARAM L0003682     0.0003454545      4.25      4.65      3.95
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SRCPARAM L0003684     0.0003454545      4.25      4.65      3.95
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SRCPARAM L0003697     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003698     0.0003454545      4.25      4.65      3.95
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SRCPARAM L0003700     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003701     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003702     0.0003454545      4.25      4.65      3.95
SRCPARAM L0003703     0.0003454545      4.25      4.65      3.95
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SRCPARAM L0003705     0.0003454545      4.25      4.65      3.95
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SRCPARAM L0003707     0.0003454545      4.25      4.65      3.95
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   AREAVERT SPILE        256392.826 4090627.404 256299.163 4090697.866
   AREAVERT SPILE        256191.750 4090755.439 256068.011 4090782.078
   AREAVERT SPILE        255998.408 4090717.630 256015.594 4090546.630
   AREAVERT SPILE        256101.524 4090442.655 256235.575 4090404.846
   AREAVERT SPILE        256319.786 4090522.570 256397.123 4090616.233
   AREAVERT SPILE        256471.022 4090567.253 256367.906 4090398.831
   AREAVERT SPILE        256251.901 4090352.429 256086.916 4090379.926
   AREAVERT SPILE        255994.971 4090471.871 255907.323 4090529.444
   AREAVERT SPILE        255888.418 4090690.992 255956.303 4090820.746
   AREAVERT SPILE        256047.388 4090871.445 256208.936 4090852.540
   AREAVERT SPILE        256367.047 4090767.470 256467.585 4090678.962
   AREAVERT SPILE        256508.831 4090610.218 256478.756 4090574.128
   SRCPARAM SPLNT            0.013     1.000    29.667     1.000
   SRCPARAM NASTK            0.006     9.144   400.000        20       1.3
   SRCPARAM NAPLNT          0.0027     1.000    10.900     1.000
   SRCPARAM NMPLNT             0.0     1.000     5.637     1.000
   SRCPARAM NPLNT           0.0492     1.000    49.235     1.000
   SRCPARAM NPILE        2.7688E-06     1.000        11
   AREAVERT NPILE        256496.869 4093919.057 256616.926 4093910.549
   AREAVERT NPILE        256718.077 4093856.665 256764.399 4093816.016
   AREAVERT NPILE        256782.360 4093751.733 256777.633 4093684.614
   AREAVERT NPILE        256734.148 4093663.817 256621.653 4093687.450
   AREAVERT NPILE        256558.316 4093736.607 256491.197 4093808.453
   AREAVERT NPILE        256469.454 4093903.932
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   SRCPARAM NMINE2             0.0     1.000    56.240     1.000
   SRCPARAM NMINE3             0.0     1.000    56.240     1.000
   SRCPARAM NMINE4             0.0     1.000    56.240     1.000
   SRCPARAM NMINE5             0.0     1.000    56.240     1.000
   SRCPARAM NMINE6             0.0     1.000    56.240     1.000
   SRCPARAM NMINE7             0.0     1.000    56.240     1.000
   SRCPARAM NMINE8          0.0607     1.000    56.240     1.000
   SRCPARAM NMINE9          0.0607     1.000    56.240     1.000
   SRCPARAM SRMPT          0.00093     4.572    16.916     1.000
   SRCPARAM SAPLT          0.00094     4.572    24.691     1.000
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   SRCPARAM SMINE            0.006     1.000    56.240     1.000

SO FINISHED
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RE STARTING
   INCLUDED PM25aa.rou
RE FINISHED
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**************************************
** AERMOD Output Pathway
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** Project Parameters
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** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
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x	y	PM2.5 Annual Concentration (ug/m3)
256429.46	4094018.65	0.083
256431.02	4094020.84	0.081
256453.67	4094018.39	0.078
256456.01	4094021.68	0.065
256406.04	4094020	0.064
256405.26	4094018.9	0.062
256381.05	4094019.16	0.052
256380.25	4094042.9	0.045
256381.32	4094044.16	0.044
256405.24	4094043.74	0.043
256430.22	4094044.58	0.032
256033.75	4094158.25	0.022
256477.87	4094018.13	0.022
256027.78	4094134.47	0.020
256039.72	4094182.03	0.017
256009.5	4094164.34	0.016
256015.47	4094188.12	0.014
256003.53	4094140.56	0.012
256021.81	4094110.69	0.011
256379.46	4094066.64	0.011
255991.22	4094194.2	0.010
255985.25	4094170.43	0.010
256045.69	4094205.8	0.006
256021.44	4094211.89	0.006
255966.98	4094200.29	0.006
256381.58	4094069.16	0.005
255997.19	4094217.98	0.005
255979.28	4094146.65	0.005
255961.01	4094176.51	0.004
255972.95	4094224.07	0.003

APPENDIX I11 LEAD-3MO
MODELING FILES

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** AERMOD Input Produced by:
** AERMOD View Ver. 13.0.0
** Lakes Environmental Software Inc.
** Date: 3/13/2026
** File: C:\z_AERMOD\Rockfield\Pb_v0.2\Pb.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE Rockfield Lead
   MODELOPT DFAULT CONC
   AVERTIME MONTH
   POLLUTID LEAD
   FLAGPOLE 1.50
   RUNORNOT RUN
   ERRORFIL Pb.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Parameters **
   SRCPARAM SSNK               0.0     0.000   133.356     1.000
   SRCPARAM NSNK               0.0     0.000   134.565     1.000
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   SRCPARAM L0002852     0.000000002515      4.25      4.65      3.95
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   SRCPARAM L0002855     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002856     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002857     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002858     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002859     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002860     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002861     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002862     0.000000002515      4.25      4.65      3.95
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SRCPARAM L0002865     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002866     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002867     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002868     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002869     0.000000002515      4.25      4.65      3.95
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SRCPARAM L0002877     0.000000002515      4.25      4.65      3.95
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SRCPARAM L0002882     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002883     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002884     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002885     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002886     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002887     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002888     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002889     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002890     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002891     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002892     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002893     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002894     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002895     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002896     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002897     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002898     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002899     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002900     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002901     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002902     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002903     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002904     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002905     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002906     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002907     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002908     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002909     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002910     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002911     0.000000002515      4.25      4.65      3.95
SRCPARAM L0002912     0.000000002515      4.25      4.65      3.95
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   SRCPARAM L0002913     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002914     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002915     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002916     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002917     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002918     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002919     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002920     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002921     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002922     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002923     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002924     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002925     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002926     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002927     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002928     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002929     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002930     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002931     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002932     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002933     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002934     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002935     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002936     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002937     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002938     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002939     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002940     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002941     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002942     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002943     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002944     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002945     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002946     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002947     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002948     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002949     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002950     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002951     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002952     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002953     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002954     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002955     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002956     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002957     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002958     0.000000002515      4.25      4.65      3.95
   SRCPARAM L0002959     0.000000002515      4.25      4.65      3.95
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** LINE VOLUME Source ID = NRD2
   SRCPARAM L0002960     0.000000000132      3.40      5.12      3.16
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SRCPARAM L0002961     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002962     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002963     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002964     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002965     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002966     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002967     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002968     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002969     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002970     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002971     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002972     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002973     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002974     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002975     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002976     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002977     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002978     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002979     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002980     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002981     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002982     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002983     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002984     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002985     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002986     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002987     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002988     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002989     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002990     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002991     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002992     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002993     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002994     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002995     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002996     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002997     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002998     0.000000000132      3.40      5.12      3.16
SRCPARAM L0002999     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003000     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003001     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003002     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003003     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003004     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003005     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003006     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003007     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003008     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003009     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003010     0.000000000132      3.40      5.12      3.16
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SRCPARAM L0003011     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003012     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003013     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003014     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003015     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003016     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003017     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003018     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003019     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003020     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003021     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003022     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003023     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003024     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003025     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003026     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003027     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003028     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003029     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003030     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003031     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003032     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003033     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003034     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003035     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003036     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003037     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003038     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003039     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003040     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003041     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003042     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003043     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003044     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003045     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003046     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003047     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003048     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003049     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003050     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003051     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003052     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003053     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003054     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003055     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003056     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003057     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003058     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003059     0.000000000132      3.40      5.12      3.16
SRCPARAM L0003060     0.000000000132      3.40      5.12      3.16
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   SRCPARAM L0003061     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003062     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003063     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003064     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003065     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003066     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003067     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003068     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003069     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003070     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003071     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003072     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003073     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003074     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003075     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003076     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003077     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003078     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003079     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003080     0.000000000132      3.40      5.12      3.16
   SRCPARAM L0003081     0.000000000132      3.40      5.12      3.16
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** LINE VOLUME Source ID = NRD3
   SRCPARAM L0003082     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003083     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003084     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003085     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003086     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003087     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003088     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003089     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003090     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003091     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003092     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003093     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003094     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003095     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003096     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003097     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003098     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003099     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003100     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003101     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003102     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003103     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003104     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003105     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003106     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003107     0.000000278      4.25      4.65      3.95
   SRCPARAM L0003108     0.000000278      4.25      4.65      3.95
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SRCPARAM L0003109     0.000000278      4.25      4.65      3.95
SRCPARAM L0003110     0.000000278      4.25      4.65      3.95
SRCPARAM L0003111     0.000000278      4.25      4.65      3.95
SRCPARAM L0003112     0.000000278      4.25      4.65      3.95
SRCPARAM L0003113     0.000000278      4.25      4.65      3.95
SRCPARAM L0003114     0.000000278      4.25      4.65      3.95
SRCPARAM L0003115     0.000000278      4.25      4.65      3.95
SRCPARAM L0003116     0.000000278      4.25      4.65      3.95
SRCPARAM L0003117     0.000000278      4.25      4.65      3.95
SRCPARAM L0003118     0.000000278      4.25      4.65      3.95
SRCPARAM L0003119     0.000000278      4.25      4.65      3.95
SRCPARAM L0003120     0.000000278      4.25      4.65      3.95
SRCPARAM L0003121     0.000000278      4.25      4.65      3.95
SRCPARAM L0003122     0.000000278      4.25      4.65      3.95
SRCPARAM L0003123     0.000000278      4.25      4.65      3.95
SRCPARAM L0003124     0.000000278      4.25      4.65      3.95
SRCPARAM L0003125     0.000000278      4.25      4.65      3.95
SRCPARAM L0003126     0.000000278      4.25      4.65      3.95
SRCPARAM L0003127     0.000000278      4.25      4.65      3.95
SRCPARAM L0003128     0.000000278      4.25      4.65      3.95
SRCPARAM L0003129     0.000000278      4.25      4.65      3.95
SRCPARAM L0003130     0.000000278      4.25      4.65      3.95
SRCPARAM L0003131     0.000000278      4.25      4.65      3.95
SRCPARAM L0003132     0.000000278      4.25      4.65      3.95
SRCPARAM L0003133     0.000000278      4.25      4.65      3.95
SRCPARAM L0003134     0.000000278      4.25      4.65      3.95
SRCPARAM L0003135     0.000000278      4.25      4.65      3.95
SRCPARAM L0003136     0.000000278      4.25      4.65      3.95
SRCPARAM L0003137     0.000000278      4.25      4.65      3.95
SRCPARAM L0003138     0.000000278      4.25      4.65      3.95
SRCPARAM L0003139     0.000000278      4.25      4.65      3.95
SRCPARAM L0003140     0.000000278      4.25      4.65      3.95
SRCPARAM L0003141     0.000000278      4.25      4.65      3.95
SRCPARAM L0003142     0.000000278      4.25      4.65      3.95
SRCPARAM L0003143     0.000000278      4.25      4.65      3.95
SRCPARAM L0003144     0.000000278      4.25      4.65      3.95
SRCPARAM L0003145     0.000000278      4.25      4.65      3.95
SRCPARAM L0003146     0.000000278      4.25      4.65      3.95
SRCPARAM L0003147     0.000000278      4.25      4.65      3.95
SRCPARAM L0003148     0.000000278      4.25      4.65      3.95
SRCPARAM L0003149     0.000000278      4.25      4.65      3.95
SRCPARAM L0003150     0.000000278      4.25      4.65      3.95
SRCPARAM L0003151     0.000000278      4.25      4.65      3.95
SRCPARAM L0003152     0.000000278      4.25      4.65      3.95
SRCPARAM L0003153     0.000000278      4.25      4.65      3.95
SRCPARAM L0003154     0.000000278      4.25      4.65      3.95
SRCPARAM L0003155     0.000000278      4.25      4.65      3.95
SRCPARAM L0003156     0.000000278      4.25      4.65      3.95
SRCPARAM L0003157     0.000000278      4.25      4.65      3.95
SRCPARAM L0003158     0.000000278      4.25      4.65      3.95
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SRCPARAM L0003159     0.000000278      4.25      4.65      3.95
SRCPARAM L0003160     0.000000278      4.25      4.65      3.95
SRCPARAM L0003161     0.000000278      4.25      4.65      3.95
SRCPARAM L0003162     0.000000278      4.25      4.65      3.95
SRCPARAM L0003163     0.000000278      4.25      4.65      3.95
SRCPARAM L0003164     0.000000278      4.25      4.65      3.95
SRCPARAM L0003165     0.000000278      4.25      4.65      3.95
SRCPARAM L0003166     0.000000278      4.25      4.65      3.95
SRCPARAM L0003167     0.000000278      4.25      4.65      3.95
SRCPARAM L0003168     0.000000278      4.25      4.65      3.95
SRCPARAM L0003169     0.000000278      4.25      4.65      3.95
SRCPARAM L0003170     0.000000278      4.25      4.65      3.95
SRCPARAM L0003171     0.000000278      4.25      4.65      3.95
SRCPARAM L0003172     0.000000278      4.25      4.65      3.95
SRCPARAM L0003173     0.000000278      4.25      4.65      3.95
SRCPARAM L0003174     0.000000278      4.25      4.65      3.95
SRCPARAM L0003175     0.000000278      4.25      4.65      3.95
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SRCPARAM L0003208     0.000000278      4.25      4.65      3.95
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SRCPARAM L0003258     0.000000278      4.25      4.65      3.95
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   SRCPARAM L0003469     0.0000001622      4.25      4.65      3.95
** ------------------------------------------------------------------
   SRCPARAM SPILE        7.6171E-12     1.000        24
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   AREAVERT SPILE        256191.750 4090755.439 256068.011 4090782.078
   AREAVERT SPILE        255998.408 4090717.630 256015.594 4090546.630
   AREAVERT SPILE        256101.524 4090442.655 256235.575 4090404.846
   AREAVERT SPILE        256319.786 4090522.570 256397.123 4090616.233
   AREAVERT SPILE        256471.022 4090567.253 256367.906 4090398.831
   AREAVERT SPILE        256251.901 4090352.429 256086.916 4090379.926
   AREAVERT SPILE        255994.971 4090471.871 255907.323 4090529.444
   AREAVERT SPILE        255888.418 4090690.992 255956.303 4090820.746
   AREAVERT SPILE        256047.388 4090871.445 256208.936 4090852.540
   AREAVERT SPILE        256367.047 4090767.470 256467.585 4090678.962
   AREAVERT SPILE        256508.831 4090610.218 256478.756 4090574.128
   SRCPARAM SPLNT        2.0014E-06     1.000    29.667     1.000
   SRCPARAM NASTK        0.0000108487     9.144   400.000        20       1.3

   SRCPARAM NAPLNT       1.2934E-07     1.000    10.900     1.000
   SRCPARAM NMPLNT       1.6042E-07     1.000     5.637     1.000
   SRCPARAM NPLNT        0.0000252755     1.000    49.235     1.000
   SRCPARAM NPILE        3.9612E-11     1.000        11
   AREAVERT NPILE        256496.869 4093919.057 256616.926 4093910.549
   AREAVERT NPILE        256718.077 4093856.665 256764.399 4093816.016
   AREAVERT NPILE        256782.360 4093751.733 256777.633 4093684.614
   AREAVERT NPILE        256734.148 4093663.817 256621.653 4093687.450
   AREAVERT NPILE        256558.316 4093736.607 256491.197 4093808.453
   AREAVERT NPILE        256469.454 4093903.932
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   SRCPARAM NMINE2            0.0     1.000    56.240     1.000
   SRCPARAM NMINE3            0.0     1.000    56.240     1.000
   SRCPARAM NMINE4            0.0     1.000    56.240     1.000
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   SRCPARAM NMINE8       0.0000335252     1.000    56.240     1.000
   SRCPARAM NMINE9       0.0000335252     1.000    56.240     1.000
   SRCPARAM SRMPT             0.0     4.572    16.916     1.000
```

```
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   SRCPARAM SASTK        0.0000108487     9.144   399.983        20       1.3

   SRCPARAM SMINE              0.0     1.000    56.240     1.000

SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED Pb.rou
RE FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
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   RECTABLE MONTH 1ST
** Auto-Generated Plotfiles
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   PLOTFILE MONTH NASTK 1ST PB.AD\MOH1G002.PLT 32
   PLOTFILE MONTH NMINE1 1ST PB.AD\MOH1G003.PLT 33
   PLOTFILE MONTH NMINE2 1ST PB.AD\MOH1G004.PLT 34
   PLOTFILE MONTH NMINE3 1ST PB.AD\MOH1G005.PLT 35
   PLOTFILE MONTH NMINE4 1ST PB.AD\MOH1G006.PLT 36
   PLOTFILE MONTH NMINE5 1ST PB.AD\MOH1G007.PLT 37
   PLOTFILE MONTH NMINE6 1ST PB.AD\MOH1G008.PLT 38
   PLOTFILE MONTH NMINE7 1ST PB.AD\MOH1G009.PLT 39
   PLOTFILE MONTH NMINE8 1ST PB.AD\MOH1G010.PLT 40
   PLOTFILE MONTH NMINE9 1ST PB.AD\MOH1G011.PLT 41
   PLOTFILE MONTH NMPLNT 1ST PB.AD\MOH1G012.PLT 42
   PLOTFILE MONTH NPILE 1ST PB.AD\MOH1G013.PLT 43
   PLOTFILE MONTH NPLNT 1ST PB.AD\MOH1G014.PLT 44
   PLOTFILE MONTH NRD1 1ST PB.AD\MOH1G015.PLT 45
   PLOTFILE MONTH NRD2 1ST PB.AD\MOH1G016.PLT 46
   PLOTFILE MONTH NRD3 1ST PB.AD\MOH1G017.PLT 47
   PLOTFILE MONTH NSNK 1ST PB.AD\MOH1G018.PLT 48
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   PLOTFILE MONTH SSNK 1ST PB.AD\MOH1G022.PLT 52
   PLOTFILE MONTH SAPLT 1ST PB.AD\MOH1G023.PLT 53
   PLOTFILE MONTH SASTK 1ST PB.AD\MOH1G024.PLT 54
   PLOTFILE MONTH SMINE 1ST PB.AD\MOH1G025.PLT 55
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   PLOTFILE MONTH NORTH 1ST PB.AD\MOH1G028.PLT 59
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OU FINISHED
**
************************************
** Project Parameters
************************************
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** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
```

x	y	Pb 3-Month Concentration (ug/m3)
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257248.4	4093315.92	0.003
257246.36	4093266.49	0.003
257197.94	4092998.78	0.002
257249.41	4093340.63	0.002
257204.98	4093020.27	0.002
257190.9	4092977.28	0.002
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257245.35	4093241.78	0.002
257272.36	4093290.18	0.002
257183.86	4092955.79	0.002
257271.34	4093265.47	0.002
257221.7	4092991	0.002
257273.37	4093314.9	0.002
257228.74	4093012.49	0.002
257170.89	4092935.36	0.002
257219.07	4093063.26	0.002
257214.66	4092969.5	0.002
257243.32	4093219.19	0.002
257250.42	4093365.35	0.002
257270.33	4093240.75	0.002
257235.78	4093033.98	0.002
257241.28	4093196.6	0.002
257239.25	4093174.01	0.002
257157.92	4092914.93	0.002
257226.11	4093084.76	0.002
257207.62	4092948.01	0.002
257237.22	4093151.43	0.002
257274.39	4093339.61	0.002
257235.18	4093128.84	0.002

APPENDIX I12 PROJECT HRA
MODELING FILES

Phase 1 (30 yr)
Phase 2 (40 yr)

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HARP2 - HRACalc (dated 22118) 4/23/2026 4:20:47 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: NCAcute
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
TIER 2 SETTINGS
Tier2 not used.

****

Calculating acute risk

Acute risk breakdown by pollutant and receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK PRO 0 30 ACUTE\hra\0_30_PRO_NCAcuteRisk.csv
Acute risk total by receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK PRO 0 30 ACUTE\hra\0_30_PRO_NCAcuteRiskSumByRec.csv
HRA ran successfully

HARP2 - HRACalc (dated 22118) 4/23/2026 4:31:21 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCChronic
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: True
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

****
TIER 2 SETTINGS
Tier2 not used.

****

Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK PRO 0 30 CAN\hra\0_30_PRO_NCChronicRisk.csv
Chronic risk total by receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK PRO 0 30 CAN\hra\0_30_PRO_NCChronicRiskSumByRec.csv
HRA ran successfully

HARP2 - HRACalc (dated 22118) 4/23/2026 4:35:08 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: NCChronic
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
NOTE: The worker adjustment factors below are only used for cancer assessments. However, the GLC adjustment factor is also applied to 8-hr noncancer chronic assessments.
Worker adjustments factors enabled: YES
GLC adjustment factor: 2.33
Exposure frequency: 250

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK PRO 0 30 CAN\hra\0_30_PRO_WorkerNCChronicRisk.csv
Chronic risk total by receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK PRO 0 30 CAN\hra\0_30_PRO_WorkerNCChronicRiskSumByRec.csv
HRA ran successfully

HARP2 - HRACalc (dated 22118) 4/23/2026 3:15:38 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: NCAcute
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
TIER 2 SETTINGS
Tier2 not used.

****

Calculating acute risk

Acute risk breakdown by pollutant and receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK_MIT_0_30_Acute\hra\0_30_MIT_NCAcuteRisk.csv
Acute risk total by receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK_MIT_0_30_Acute\hra\0_30_MIT_NCAcuteRiskSumByRec.csv
HRA ran successfully

HARP2 - HRACalc (dated 22118) 4/23/2026 3:29:38 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCChronic
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: True
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

****
TIER 2 SETTINGS
Tier2 not used.

****

Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK_MIT_0_30_CAN\hra\0_30_MIT_NCChronicRisk.csv
Chronic risk total by receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK_MIT_0_30_CAN\hra\0_30_MIT_NCChronicRiskSumByRec.csv
HRA ran successfully

HARP2 - HRACalc (dated 22118) 4/23/2026 3:31:27 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: NCChronic
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
NOTE: The worker adjustment factors below are only used for cancer assessments. However, the GLC adjustment factor is also applied to 8-hr noncancer chronic assessments.
Worker adjustments factors enabled: YES
GLC adjustment factor: 2.33
Exposure frequency: 250

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK_MIT_0_30_CAN\hra\0_30_MIT_WorkerNCChronicRisk.csv
Chronic risk total by receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK_MIT_0_30_CAN\hra\0_30_MIT_WorkerNCChronicRiskSumByRec.csv
HRA ran successfully

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            <HighEnd>240,1200,640,520,240,230</HighEnd>
            <FAHOn>N</FAHOn><!--Y or N-->
            <FAH>0.85,0.85,0.72,0.72,0.73,0.73</FAH>
      </Inhalation>
      <Soil>
            <IROn>N</IROn><!--Y or N-->
            <Mean>0.7,20,5,3,0.7,0.6</Mean>
            <HighEnd>3,40,20,10,3,3</HighEnd>
            <TfOn>N</TfOn><!--Y or N-->
            <Tf>25550</Tf>
      </Soil>
      <Dermal>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>1100,2200,6600,5700,1100,1100</Mean>
            <HighEnd>2400,2900,8700,8100,2400,2400</HighEnd>
      </Dermal>
      <MothersMilk>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>101</Mean>
            <HighEnd>139</HighEnd>
      </MothersMilk>
      <Water>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>18,113,26,24,18,18</Mean>
            <HighEnd>47,196,66,61,47,45</HighEnd>
```

```
    </Water>
    <Fish>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>0.38,0.18,0.36,0.36,0.38,0.36</Mean>
        <HighEnd>1.22,0.58,1.16,1.16,1.22,1.16</HighEnd>
    </Fish>
    <CropIROn>N</CropIROn><!--Y or N-->
    <BDIROn>N</BDIROn><!--Y or N-->
    <PCEIROn>N</PCEIROn><!--Y or N-->
    <Leafy>
        <Mean>0.9,3.8,2.5,1.7,0.9,1.1</Mean>
        <HighEnd>3.2,10.8,7.9,5.8,3.2,3.4</HighEnd>
    </Leafy>
    <Exposed>
        <Mean>1.9,11.7,7.4,5.5,1.9,1.8</Mean>
        <HighEnd>5.9,30.2,21.7,16.6,5.9,5.6</HighEnd>
    </Exposed>
    <Protected>
        <Mean>1.7,5.9,4.7,3.6,1.7,1.6</Mean>
        <HighEnd>5.8,17.5,13.3,10.6,5.8,5.2</HighEnd>
    </Protected>
    <Root>
        <Mean>1.7,5.7,3.9,3.0,1.7,1.5</Mean>
        <HighEnd>4.6,15.3,10.8,8.7,4.6,4.2</HighEnd>
    </Root>
    <Beef>
        <Mean>2,3.9,3.5,3,2,1.7</Mean>
        <HighEnd>4.8,11.3,8.6,7.6,4.8,4.4</HighEnd>
    </Beef>
    <Dairy>
        <Mean>5.4,50.9,23.3,16.5,5.4,4.3</Mean>
        <HighEnd>15.9,116.1,61.4,48.4,15.9,13.2</HighEnd>
    </Dairy>
    <Pig>
        <Mean>0.9,2.9,2.2,1.8,0.9,0.9</Mean>
        <HighEnd>2.9,10.5,7.8,5.7,2.9,2.8</HighEnd>
    </Pig>
    <Chicken>
        <Mean>1.8,4.5,3.7,3.0,1.8,1.5</Mean>
        <HighEnd>4.7,11.4,9,7.5,4.7,3.8</HighEnd>
    </Chicken>
    <Egg>
        <Mean>1.6,6.1,3.9,3.1,1.6,1.3</Mean>
        <HighEnd>4.2,15,9.4,8.1,4.2,3.4</HighEnd>
    </Egg>
    <WhatWasChanged>NA</WhatWasChanged>
</Tier2>
</HRA>
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<!--HARP RISK INPUT FILE-->
<!--Created 2026/04/23 16:31:20-->
<HRA>
  <HRAVERSION>22118</HRAVERSION>
  <Title>0_30_PRO_</Title>
  <AERMODMode>Y</AERMODMode><!--Read AERMOD plot file (Y) or read CSV file (N)-->
  <GLCList>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK PRO 0 30 CAN\hra\0_30_PRO_GLCList.csv</GLCList>
  <PollutantList>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK PRO 0 30
CAN\hra\0_30_PRO_PolDB.csv</PollutantList>
  <PathwayRecConc>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK PRO 0 30
CAN\hra\0_30_PRO_PathwayRec.csv</PathwayRecConc>
  <Output>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK PRO 0 30 CAN\hra</Output>
  <PollutantNum>64</PollutantNum>
  <Append>N</Append>
  <ReceptorIndex>NA</ReceptorIndex>
  <SourceName>NA</SourceName>
  <RiskScenario>
      <ReceptorType>Resident</ReceptorType><!--Residential, Population, School, or Worker-->
      <UDEDOn>N</UDEDOn><!--Y or N-->
      <ExposureDuration>30</ExposureDuration><!--years-->
      <Scenario>NCChronic</Scenario><!--Cancer, NCChronic, NCChronic8HR, NCAcute, All-->
      <StartAge>-0.25</StartAge><!--years-->
      <WorkerExposureFrequency>250</WorkerExposureFrequency><!--days/year-->
      <WorkerNote>NA</WorkerNote>
      <Tier2On>N</Tier2On>
      <IntakeRatePercentile>Derived</IntakeRatePercentile><!--HighEnd, Mean, Derived-->
  </RiskScenario>
<Pathways>
  <Type>4</Type>
  <PathwaysEnabled><!--Y or N-->
      <Inhalation>Y</Inhalation>
      <Soil>Y</Soil>
      <Dermal>Y</Dermal>
      <MothersMilk>Y</MothersMilk>
      <Water>N</Water>
      <Fish>N</Fish>
      <HomegrownCrop>Y</HomegrownCrop>
      <Beef>N</Beef>
      <Dairy>N</Dairy>
      <Pig>N</Pig>
      <Chicken>N</Chicken>
      <Egg>N</Egg>
  </PathwaysEnabled>
  <Inhalation>
      <FAH3rdTrito16>N</FAH3rdTrito16><!--Y or N-->
      <FAH16to70>N</FAH16to70><!--Y or N-->
      <DBRType>LongTerm24HR</DBRType><!--LongTerm24HR, RMP, SedentaryPassive8HR, Light8HR, or
Moderate8HR-->
      <GLCAdjustmentFactor>2.33</GLCAdjustmentFactor>
      <UseAdj>N</UseAdj><!--Y or N-->
      <USEPOSTFILE8REL>N</USEPOSTFILE8REL><!--Y or N-->
      <USEPOSTFILECAN>N</USEPOSTFILECAN><!--Y or N-->

```
  </Inhalation>
  <Deposition>0.02</Deposition>
  <SoilMixingRate>0.01</SoilMixingRate>
  <DermalClimate>Mixed</DermalClimate><!--Cold, Mixed, or Warm-->
  <HumanWater>
      <SurfaceArea>0</SurfaceArea><!--m^2-->
      <WaterVolume>0</WaterVolume><!--kg-->
      <VolumeChangesPerYear>0</VolumeChangesPerYear>
      <FractionFromContamSource>0</FractionFromContamSource>
      <RecPhysicallyActiveLivesWorkHotClimates>N</RecPhysicallyActiveLivesWorkHotClimates><!--Y or N-->
  </HumanWater>
  <Homegrown>
      <HouseholdType>HouseholdsthatGarden</HouseholdType><!--HouseholdsthatGarden, HouseholdsthatFarm, or
UserDefined-->
      <Leafy>0.137</Leafy>
      <Exposed>0.137</Exposed>
      <Protected>0.137</Protected>
      <Root>0.137</Root>
  </Homegrown>
  <Fish>
      <SurfaceArea>0</SurfaceArea><!--m^2-->
      <WaterVolume>0</WaterVolume><!--kg-->
      <VolumeChangesPerYear>0</VolumeChangesPerYear>
      <FractionFromContamSource>0</FractionFromContamSource>
  </Fish>
  <AnimalFractions>
      <HouseholdTypeBD>RaiseHunt</HouseholdTypeBD><!--RaiseHunt, Farm, or UserDefined-->
      <HouseholdTypePCE>RaiseHunt</HouseholdTypePCE><!--RaiseHunt, Farm, or UserDefined-->
      <Beef>0.485</Beef>
      <Pork>0.242</Pork>
      <Poultry>0.156</Poultry>
      <Eggs>0.146</Eggs>
      <Dairy>0.207</Dairy>
  </AnimalFractions>
  <BeefDairyWater>
      <SurfaceArea>0</SurfaceArea><!--m^2-->
      <WaterVolume>0</WaterVolume><!--kg-->
      <VolumeChangesPerYear>0</VolumeChangesPerYear>
      <FractionFromContamSourceBeef>0</FractionFromContamSourceBeef>
      <FractionFromContamSourceDairy>0</FractionFromContamSourceDairy>
  </BeefDairyWater>
  <BeefFractionFromGrazing>0.5</BeefFractionFromGrazing>
  <DairyFractionFromGrazing>0.5</DairyFractionFromGrazing>
  <PigChickenEggsWater>
      <SurfaceArea>0</SurfaceArea><!--m^2-->
      <WaterVolume>0</WaterVolume><!--kg-->
      <VolumeChangesPerYear>0</VolumeChangesPerYear>
      <FractionFromContamSourcePig>0</FractionFromContamSourcePig>
      <FractionFromContamSourceChicken>0</FractionFromContamSourceChicken>
      <FractionFromContamSourceEggs>0</FractionFromContamSourceEggs>
  </PigChickenEggsWater>
  <Pig>
      <FractionEatenOffGround>0</FractionEatenOffGround>
      <FractionFeedOnsiteContaminated>0.1</FractionFeedOnsiteContaminated>
```

```
      <Leafy>0.25</Leafy>
      <Exposed>0.25</Exposed>
      <Protected>0.25</Protected>
      <Root>0.25</Root>
   </Pig>
   <Chicken>
      <FractionEatenOffGround>0</FractionEatenOffGround>
      <FractionFeedOnsiteContaminated>0.05</FractionFeedOnsiteContaminated>
      <Leafy>0.25</Leafy>
      <Exposed>0.25</Exposed>
      <Protected>0.25</Protected>
      <Root>0.25</Root>
   </Chicken>
   <Egg>
      <FractionEatenOffGround>0.05</FractionEatenOffGround>
      <FractionFeedOnsiteContaminated>0</FractionFeedOnsiteContaminated>
      <Leafy>0.25</Leafy>
      <Exposed>0.25</Exposed>
      <Protected>0.25</Protected>
      <Root>0.25</Root>
   </Egg>
</Pathways>
<Tier2>
      <EFOn>N</EFOn><!--Y or N-->
      <EF>350</EF>
      <Inhalation>
            <IROn>N</IROn><!--Y or N-->
            <Mean>225,658,535,452,210,185</Mean>
            <HighEnd>361,1090,861,745,335,290</HighEnd>
            <FAHOn>N</FAHOn><!--Y or N-->
            <FAH>0.85,0.85,0.72,0.72,0.73,0.73</FAH>
      </Inhalation>
      <Soil>
            <IROn>N</IROn><!--Y or N-->
            <Mean>0.7,20,5,3,0.7,0.6</Mean>
            <HighEnd>3,40,20,10,3,3</HighEnd>
            <TfOn>N</TfOn><!--Y or N-->
            <Tf>25550</Tf>
      </Soil>
      <Dermal>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>1100,2200,6600,5700,1100,1100</Mean>
            <HighEnd>2400,2900,8700,8100,2400,2400</HighEnd>
      </Dermal>
      <MothersMilk>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>101</Mean>
            <HighEnd>139</HighEnd>
      </MothersMilk>
      <Water>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>18,113,26,24,18,18</Mean>
            <HighEnd>47,196,66,61,47,45</HighEnd>
      </Water>
```

```
    <Fish>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>0.38,0.18,0.36,0.36,0.38,0.36</Mean>
        <HighEnd>1.22,0.58,1.16,1.16,1.22,1.16</HighEnd>
    </Fish>
    <CropIROn>N</CropIROn><!--Y or N-->
    <BDIROn>N</BDIROn><!--Y or N-->
    <PCEIROn>N</PCEIROn><!--Y or N-->
    <Leafy>
        <Mean>0.9,3.8,2.5,1.7,0.9,1.1</Mean>
        <HighEnd>3.2,10.8,7.9,5.8,3.2,3.4</HighEnd>
    </Leafy>
    <Exposed>
        <Mean>1.9,11.7,7.4,5.5,1.9,1.8</Mean>
        <HighEnd>5.9,30.2,21.7,16.6,5.9,5.6</HighEnd>
    </Exposed>
    <Protected>
        <Mean>1.7,5.9,4.7,3.6,1.7,1.6</Mean>
        <HighEnd>5.8,17.5,13.3,10.6,5.8,5.2</HighEnd>
    </Protected>
    <Root>
        <Mean>1.7,5.7,3.9,3.0,1.7,1.5</Mean>
        <HighEnd>4.6,15.3,10.8,8.7,4.6,4.2</HighEnd>
    </Root>
    <Beef>
        <Mean>2,3.9,3.5,3,2,1.7</Mean>
        <HighEnd>4.8,11.3,8.6,7.6,4.8,4.4</HighEnd>
    </Beef>
    <Dairy>
        <Mean>5.4,50.9,23.3,16.5,5.4,4.3</Mean>
        <HighEnd>15.9,116.1,61.4,48.4,15.9,13.2</HighEnd>
    </Dairy>
    <Pig>
        <Mean>0.9,2.9,2.2,1.8,0.9,0.9</Mean>
        <HighEnd>2.9,10.5,7.8,5.7,2.9,2.8</HighEnd>
    </Pig>
    <Chicken>
        <Mean>1.8,4.5,3.7,3.0,1.8,1.5</Mean>
        <HighEnd>4.7,11.4,9,7.5,4.7,3.8</HighEnd>
    </Chicken>
    <Egg>
        <Mean>1.6,6.1,3.9,3.1,1.6,1.3</Mean>
        <HighEnd>4.2,15,9.4,8.1,4.2,3.4</HighEnd>
    </Egg>
    <WhatWasChanged>NA</WhatWasChanged>
</Tier2>
</HRA>
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<?xml version="1.0" encoding="UTF-8"?>
<!--HARP RISK INPUT FILE-->
<!--Created 2026/04/23 16:35:07-->
<HRA>
  <HRAVERSION>22118</HRAVERSION>
  <Title>0_30_PRO_Worker</Title>
  <AERMODMode>Y</AERMODMode><!--Read AERMOD plot file (Y) or read CSV file (N)-->
  <GLCList>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK PRO 0 30
CAN\hra\0_30_PRO_WorkerGLCList.csv</GLCList>
  <PollutantList>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK PRO 0 30
CAN\hra\0_30_PRO_WorkerPolDB.csv</PollutantList>
  <PathwayRecConc>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK PRO 0 30
CAN\hra\0_30_PRO_WorkerPathwayRec.csv</PathwayRecConc>
  <Output>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK PRO 0 30 CAN\hra</Output>
  <PollutantNum>64</PollutantNum>
  <Append>N</Append>
  <ReceptorIndex>NA</ReceptorIndex>
  <SourceName>NA</SourceName>
  <RiskScenario>
      <ReceptorType>Worker</ReceptorType><!--Residential, Population, School, or Worker-->
      <UDEDOn>Y</UDEDOn><!--Y or N-->
      <ExposureDuration>40</ExposureDuration><!--years-->
      <Scenario>NCChronic</Scenario><!--Cancer, NCChronic, NCChronic8HR, NCAcute, All-->
      <StartAge>16</StartAge><!--years-->
      <WorkerExposureFrequency>250</WorkerExposureFrequency><!--days/year-->
      <WorkerNote>NA</WorkerNote>
      <Tier2On>Y</Tier2On>
      <IntakeRatePercentile>Derived</IntakeRatePercentile><!--HighEnd, Mean, Derived-->
  </RiskScenario>
<Pathways>
  <Type>3</Type>
  <PathwaysEnabled><!--Y or N-->
      <Inhalation>Y</Inhalation>
      <Soil>Y</Soil>
      <Dermal>Y</Dermal>
      <MothersMilk>N</MothersMilk>
      <Water>N</Water>
      <Fish>N</Fish>
      <HomegrownCrop>N</HomegrownCrop>
      <Beef>N</Beef>
      <Dairy>N</Dairy>
      <Pig>N</Pig>
      <Chicken>N</Chicken>
      <Egg>N</Egg>
  </PathwaysEnabled>
  <Inhalation>
      <FAH3rdTrito16>N</FAH3rdTrito16><!--Y or N-->
      <FAH16to70>N</FAH16to70><!--Y or N-->
      <DBRType>Moderate8HR</DBRType><!--LongTerm24HR, RMP, SedentaryPassive8HR, Light8HR, or
Moderate8HR-->
      <GLCAdjustmentFactor>2.33</GLCAdjustmentFactor>
      <UseAdj>Y</UseAdj><!--Y or N-->
      <USEPOSTFILE8REL>N</USEPOSTFILE8REL><!--Y or N-->

```
    <USEPOSTFILECAN>N</USEPOSTFILECAN><!--Y or N-->
  </Inhalation>
  <Deposition>0.02</Deposition>
  <SoilMixingRate>0.01</SoilMixingRate>
  <DermalClimate>Mixed</DermalClimate><!--Cold, Mixed, or Warm-->
  <HumanWater>
    <SurfaceArea>0</SurfaceArea><!--m^2-->
    <WaterVolume>0</WaterVolume><!--kg-->
    <VolumeChangesPerYear>0</VolumeChangesPerYear>
    <FractionFromContamSource>0</FractionFromContamSource>
    <RecPhysicallyActiveLivesWorkHotClimates>N</RecPhysicallyActiveLivesWorkHotClimates><!--Y or N-->
  </HumanWater>
  <Homegrown>
    <HouseholdType>HouseholdsthatGarden</HouseholdType><!--HouseholdsthatGarden, HouseholdsthatFarm, or
UserDefined-->
    <Leafy>0.137</Leafy>
    <Exposed>0.137</Exposed>
    <Protected>0.137</Protected>
    <Root>0.137</Root>
  </Homegrown>
  <Fish>
    <SurfaceArea>0</SurfaceArea><!--m^2-->
    <WaterVolume>0</WaterVolume><!--kg-->
    <VolumeChangesPerYear>0</VolumeChangesPerYear>
    <FractionFromContamSource>0</FractionFromContamSource>
  </Fish>
  <AnimalFractions>
    <HouseholdTypeBD>RaiseHunt</HouseholdTypeBD><!--RaiseHunt, Farm, or UserDefined-->
    <HouseholdTypePCE>RaiseHunt</HouseholdTypePCE><!--RaiseHunt, Farm, or UserDefined-->
    <Beef>0.485</Beef>
    <Pork>0.242</Pork>
    <Poultry>0.156</Poultry>
    <Eggs>0.146</Eggs>
    <Dairy>0.207</Dairy>
  </AnimalFractions>
  <BeefDairyWater>
    <SurfaceArea>0</SurfaceArea><!--m^2-->
    <WaterVolume>0</WaterVolume><!--kg-->
    <VolumeChangesPerYear>0</VolumeChangesPerYear>
    <FractionFromContamSourceBeef>0</FractionFromContamSourceBeef>
    <FractionFromContamSourceDairy>0</FractionFromContamSourceDairy>
  </BeefDairyWater>
  <BeefFractionFromGrazing>0.5</BeefFractionFromGrazing>
  <DairyFractionFromGrazing>0.5</DairyFractionFromGrazing>
  <PigChickenEggsWater>
    <SurfaceArea>0</SurfaceArea><!--m^2-->
    <WaterVolume>0</WaterVolume><!--kg-->
    <VolumeChangesPerYear>0</VolumeChangesPerYear>
    <FractionFromContamSourcePig>0</FractionFromContamSourcePig>
    <FractionFromContamSourceChicken>0</FractionFromContamSourceChicken>
    <FractionFromContamSourceEggs>0</FractionFromContamSourceEggs>
  </PigChickenEggsWater>
  <Pig>
    <FractionEatenOffGround>0</FractionEatenOffGround>
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        <Leafy>0.25</Leafy>
        <Exposed>0.25</Exposed>
        <Protected>0.25</Protected>
        <Root>0.25</Root>
    </Pig>
    <Chicken>
        <FractionEatenOffGround>0</FractionEatenOffGround>
        <FractionFeedOnsiteContaminated>0.05</FractionFeedOnsiteContaminated>
        <Leafy>0.25</Leafy>
        <Exposed>0.25</Exposed>
        <Protected>0.25</Protected>
        <Root>0.25</Root>
    </Chicken>
    <Egg>
        <FractionEatenOffGround>0.05</FractionEatenOffGround>
        <FractionFeedOnsiteContaminated>0</FractionFeedOnsiteContaminated>
        <Leafy>0.25</Leafy>
        <Exposed>0.25</Exposed>
        <Protected>0.25</Protected>
        <Root>0.25</Root>
    </Egg>
</Pathways>
<Tier2>
    <EFOn>N</EFOn><!--Y or N-->
    <EF>350</EF>
    <Inhalation>
        <IROn>N</IROn><!--Y or N-->
        <Mean>170,890,470,380,170,170</Mean>
        <HighEnd>240,1200,640,520,240,230</HighEnd>
        <FAHOn>N</FAHOn><!--Y or N-->
        <FAH>0.85,0.85,0.72,0.72,0.73,0.73</FAH>
    </Inhalation>
    <Soil>
        <IROn>N</IROn><!--Y or N-->
        <Mean>0.7,20,5,3,0.7,0.6</Mean>
        <HighEnd>3,40,20,10,3,3</HighEnd>
        <TfOn>N</TfOn><!--Y or N-->
        <Tf>25550</Tf>
    </Soil>
    <Dermal>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>0,0,0,0,0,2600</Mean>
        <HighEnd>0,0,0,0,0,5000</HighEnd>
    </Dermal>
    <MothersMilk>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>101</Mean>
        <HighEnd>139</HighEnd>
    </MothersMilk>
    <Water>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>18,113,26,24,18,18</Mean>
        <HighEnd>47,196,66,61,47,45</HighEnd>
```

```
    </Water>
    <Fish>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>0.38,0.18,0.36,0.36,0.38,0.36</Mean>
        <HighEnd>1.22,0.58,1.16,1.16,1.22,1.16</HighEnd>
    </Fish>
    <CropIROn>N</CropIROn><!--Y or N-->
    <BDIROn>N</BDIROn><!--Y or N-->
    <PCEIROn>N</PCEIROn><!--Y or N-->
    <Leafy>
        <Mean>0.9,3.8,2.5,1.7,0.9,1.1</Mean>
        <HighEnd>3.2,10.8,7.9,5.8,3.2,3.4</HighEnd>
    </Leafy>
    <Exposed>
        <Mean>1.9,11.7,7.4,5.5,1.9,1.8</Mean>
        <HighEnd>5.9,30.2,21.7,16.6,5.9,5.6</HighEnd>
    </Exposed>
    <Protected>
        <Mean>1.7,5.9,4.7,3.6,1.7,1.6</Mean>
        <HighEnd>5.8,17.5,13.3,10.6,5.8,5.2</HighEnd>
    </Protected>
    <Root>
        <Mean>1.7,5.7,3.9,3.0,1.7,1.5</Mean>
        <HighEnd>4.6,15.3,10.8,8.7,4.6,4.2</HighEnd>
    </Root>
    <Beef>
        <Mean>2,3.9,3.5,3,2,1.7</Mean>
        <HighEnd>4.8,11.3,8.6,7.6,4.8,4.4</HighEnd>
    </Beef>
    <Dairy>
        <Mean>5.4,50.9,23.3,16.5,5.4,4.3</Mean>
        <HighEnd>15.9,116.1,61.4,48.4,15.9,13.2</HighEnd>
    </Dairy>
    <Pig>
        <Mean>0.9,2.9,2.2,1.8,0.9,0.9</Mean>
        <HighEnd>2.9,10.5,7.8,5.7,2.9,2.8</HighEnd>
    </Pig>
    <Chicken>
        <Mean>1.8,4.5,3.7,3.0,1.8,1.5</Mean>
        <HighEnd>4.7,11.4,9,7.5,4.7,3.8</HighEnd>
    </Chicken>
    <Egg>
        <Mean>1.6,6.1,3.9,3.1,1.6,1.3</Mean>
        <HighEnd>4.2,15,9.4,8.1,4.2,3.4</HighEnd>
    </Egg>
    <WhatWasChanged>ED or start age changed|</WhatWasChanged>
</Tier2>
</HRA>
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<?xml version="1.0" encoding="UTF-8"?>
<!--HARP RISK INPUT FILE-->
<!--Created 2026/04/23 15:15:37-->
<HRA>
  <HRAVERSION>22118</HRAVERSION>
  <Title>0_30_MIT_</Title>
  <AERMODMode>Y</AERMODMode><!--Read AERMOD plot file (Y) or read CSV file (N)-->
  <GLCList>C:\Z_HARPRUN\Rockfield HRA
v0.8\ROCK_MIT_0_30_Acute\hra\0_30_MIT_GLCList.csv</GLCList>
  <PollutantList>C:\Z_HARPRUN\Rockfield HRA
v0.8\ROCK_MIT_0_30_Acute\hra\0_30_MIT_PolDB.csv</PollutantList>
  <PathwayRecConc>C:\Z_HARPRUN\Rockfield HRA
v0.8\ROCK_MIT_0_30_Acute\hra\0_30_MIT_PathwayRec.csv</PathwayRecConc>
  <Output>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK_MIT_0_30_Acute\hra</Output>
  <PollutantNum>64</PollutantNum>
  <Append>N</Append>
  <ReceptorIndex>NA</ReceptorIndex>
  <SourceName>NA</SourceName>
  <RiskScenario>
      <ReceptorType>Worker</ReceptorType><!--Residential, Population, School, or Worker-->
      <UDEDOn>N</UDEDOn><!--Y or N-->
      <ExposureDuration>30</ExposureDuration><!--years-->
      <Scenario>NCAcute</Scenario><!--Cancer, NCChronic, NCChronic8HR, NCAcute, All-->
      <StartAge>-0.25</StartAge><!--years-->
      <WorkerExposureFrequency>250</WorkerExposureFrequency><!--days/year-->
      <WorkerNote>NA</WorkerNote>
      <Tier2On>N</Tier2On>
      <IntakeRatePercentile>Derived</IntakeRatePercentile><!--HighEnd, Mean, Derived-->
  </RiskScenario>
<Pathways>
  <Type>1</Type>
  <PathwaysEnabled><!--Y or N-->
      <Inhalation>Y</Inhalation>
      <Soil>N</Soil>
      <Dermal>N</Dermal>
      <MothersMilk>N</MothersMilk>
      <Water>N</Water>
      <Fish>N</Fish>
      <HomegrownCrop>N</HomegrownCrop>
      <Beef>N</Beef>
      <Dairy>N</Dairy>
      <Pig>N</Pig>
      <Chicken>N</Chicken>
      <Egg>N</Egg>
  </PathwaysEnabled>
  <Inhalation>
      <FAH3rdTrito16>N</FAH3rdTrito16><!--Y or N-->
      <FAH16to70>N</FAH16to70><!--Y or N-->
      <DBRType>Moderate8HR</DBRType><!--LongTerm24HR, RMP, SedentaryPassive8HR, Light8HR, or
Moderate8HR-->
      <GLCAdjustmentFactor>1</GLCAdjustmentFactor>
      <UseAdj>N</UseAdj><!--Y or N-->
      <USEPOSTFILE8REL>N</USEPOSTFILE8REL><!--Y or N-->

```
    <USEPOSTFILECAN>N</USEPOSTFILECAN><!--Y or N-->
  </Inhalation>
  <Deposition>0.02</Deposition>
  <SoilMixingRate>0.01</SoilMixingRate>
  <DermalClimate>Mixed</DermalClimate><!--Cold, Mixed, or Warm-->
  <HumanWater>
    <SurfaceArea>0</SurfaceArea><!--m^2-->
    <WaterVolume>0</WaterVolume><!--kg-->
    <VolumeChangesPerYear>0</VolumeChangesPerYear>
    <FractionFromContamSource>0</FractionFromContamSource>
    <RecPhysicallyActiveLivesWorkHotClimates>N</RecPhysicallyActiveLivesWorkHotClimates><!--Y or N-->
  </HumanWater>
  <Homegrown>
    <HouseholdType>HouseholdsthatGarden</HouseholdType><!--HouseholdsthatGarden, HouseholdsthatFarm, or
UserDefined-->
    <Leafy>0.137</Leafy>
    <Exposed>0.137</Exposed>
    <Protected>0.137</Protected>
    <Root>0.137</Root>
  </Homegrown>
  <Fish>
    <SurfaceArea>0</SurfaceArea><!--m^2-->
    <WaterVolume>0</WaterVolume><!--kg-->
    <VolumeChangesPerYear>0</VolumeChangesPerYear>
    <FractionFromContamSource>0</FractionFromContamSource>
  </Fish>
  <AnimalFractions>
    <HouseholdTypeBD>RaiseHunt</HouseholdTypeBD><!--RaiseHunt, Farm, or UserDefined-->
    <HouseholdTypePCE>RaiseHunt</HouseholdTypePCE><!--RaiseHunt, Farm, or UserDefined-->
    <Beef>0.485</Beef>
    <Pork>0.242</Pork>
    <Poultry>0.156</Poultry>
    <Eggs>0.146</Eggs>
    <Dairy>0.207</Dairy>
  </AnimalFractions>
  <BeefDairyWater>
    <SurfaceArea>0</SurfaceArea><!--m^2-->
    <WaterVolume>0</WaterVolume><!--kg-->
    <VolumeChangesPerYear>0</VolumeChangesPerYear>
    <FractionFromContamSourceBeef>0</FractionFromContamSourceBeef>
    <FractionFromContamSourceDairy>0</FractionFromContamSourceDairy>
  </BeefDairyWater>
  <BeefFractionFromGrazing>0.5</BeefFractionFromGrazing>
  <DairyFractionFromGrazing>0.5</DairyFractionFromGrazing>
  <PigChickenEggsWater>
    <SurfaceArea>0</SurfaceArea><!--m^2-->
    <WaterVolume>0</WaterVolume><!--kg-->
    <VolumeChangesPerYear>0</VolumeChangesPerYear>
    <FractionFromContamSourcePig>0</FractionFromContamSourcePig>
    <FractionFromContamSourceChicken>0</FractionFromContamSourceChicken>
    <FractionFromContamSourceEggs>0</FractionFromContamSourceEggs>
  </PigChickenEggsWater>
  <Pig>
    <FractionEatenOffGround>0</FractionEatenOffGround>
```

```
      <FractionFeedOnsiteContaminated>0.1</FractionFeedOnsiteContaminated>
      <Leafy>0.25</Leafy>
      <Exposed>0.25</Exposed>
      <Protected>0.25</Protected>
      <Root>0.25</Root>
   </Pig>
   <Chicken>
      <FractionEatenOffGround>0</FractionEatenOffGround>
      <FractionFeedOnsiteContaminated>0.05</FractionFeedOnsiteContaminated>
      <Leafy>0.25</Leafy>
      <Exposed>0.25</Exposed>
      <Protected>0.25</Protected>
      <Root>0.25</Root>
   </Chicken>
   <Egg>
      <FractionEatenOffGround>0.05</FractionEatenOffGround>
      <FractionFeedOnsiteContaminated>0</FractionFeedOnsiteContaminated>
      <Leafy>0.25</Leafy>
      <Exposed>0.25</Exposed>
      <Protected>0.25</Protected>
      <Root>0.25</Root>
   </Egg>
</Pathways>
<Tier2>
      <EFOn>N</EFOn><!--Y or N-->
      <EF>350</EF>
      <Inhalation>
            <IROn>N</IROn><!--Y or N-->
            <Mean>225,658,535,452,210,185</Mean>
            <HighEnd>361,1090,861,745,335,290</HighEnd>
            <FAHOn>N</FAHOn><!--Y or N-->
            <FAH>0.85,0.85,0.72,0.72,0.73,0.73</FAH>
      </Inhalation>
      <Soil>
            <IROn>N</IROn><!--Y or N-->
            <Mean>0.7,20,5,3,0.7,0.6</Mean>
            <HighEnd>3,40,20,10,3,3</HighEnd>
            <TfOn>N</TfOn><!--Y or N-->
            <Tf>25550</Tf>
      </Soil>
      <Dermal>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>1100,2200,6600,5700,1100,1100</Mean>
            <HighEnd>2400,2900,8700,8100,2400,2400</HighEnd>
      </Dermal>
      <MothersMilk>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>101</Mean>
            <HighEnd>139</HighEnd>
      </MothersMilk>
      <Water>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>18,113,26,24,18,18</Mean>
            <HighEnd>47,196,66,61,47,45</HighEnd>
```

```
    </Water>
    <Fish>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>0.38,0.18,0.36,0.36,0.38,0.36</Mean>
        <HighEnd>1.22,0.58,1.16,1.16,1.22,1.16</HighEnd>
    </Fish>
    <CropIROn>N</CropIROn><!--Y or N-->
    <BDIROn>N</BDIROn><!--Y or N-->
    <PCEIROn>N</PCEIROn><!--Y or N-->
    <Leafy>
        <Mean>0.9,3.8,2.5,1.7,0.9,1.1</Mean>
        <HighEnd>3.2,10.8,7.9,5.8,3.2,3.4</HighEnd>
    </Leafy>
    <Exposed>
        <Mean>1.9,11.7,7.4,5.5,1.9,1.8</Mean>
        <HighEnd>5.9,30.2,21.7,16.6,5.9,5.6</HighEnd>
    </Exposed>
    <Protected>
        <Mean>1.7,5.9,4.7,3.6,1.7,1.6</Mean>
        <HighEnd>5.8,17.5,13.3,10.6,5.8,5.2</HighEnd>
    </Protected>
    <Root>
        <Mean>1.7,5.7,3.9,3.0,1.7,1.5</Mean>
        <HighEnd>4.6,15.3,10.8,8.7,4.6,4.2</HighEnd>
    </Root>
    <Beef>
        <Mean>2,3.9,3.5,3,2,1.7</Mean>
        <HighEnd>4.8,11.3,8.6,7.6,4.8,4.4</HighEnd>
    </Beef>
    <Dairy>
        <Mean>5.4,50.9,23.3,16.5,5.4,4.3</Mean>
        <HighEnd>15.9,116.1,61.4,48.4,15.9,13.2</HighEnd>
    </Dairy>
    <Pig>
        <Mean>0.9,2.9,2.2,1.8,0.9,0.9</Mean>
        <HighEnd>2.9,10.5,7.8,5.7,2.9,2.8</HighEnd>
    </Pig>
    <Chicken>
        <Mean>1.8,4.5,3.7,3.0,1.8,1.5</Mean>
        <HighEnd>4.7,11.4,9,7.5,4.7,3.8</HighEnd>
    </Chicken>
    <Egg>
        <Mean>1.6,6.1,3.9,3.1,1.6,1.3</Mean>
        <HighEnd>4.2,15,9.4,8.1,4.2,3.4</HighEnd>
    </Egg>
    <WhatWasChanged>NA</WhatWasChanged>
</Tier2>
</HRA>
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<?xml version="1.0" encoding="UTF-8"?>
<!--HARP RISK INPUT FILE-->
<!--Created 2026/04/23 15:29:37-->
<HRA>
  <HRAVERSION>22118</HRAVERSION>
  <Title>0_30_MIT_</Title>
  <AERMODMode>Y</AERMODMode><!--Read AERMOD plot file (Y) or read CSV file (N)-->
  <GLCList>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK_MIT_0_30_CAN\hra\0_30_MIT_GLCList.csv</GLCList>
  <PollutantList>C:\Z_HARPRUN\Rockfield HRA
v0.8\ROCK_MIT_0_30_CAN\hra\0_30_MIT_PolDB.csv</PollutantList>
  <PathwayRecConc>C:\Z_HARPRUN\Rockfield HRA
v0.8\ROCK_MIT_0_30_CAN\hra\0_30_MIT_PathwayRec.csv</PathwayRecConc>
  <Output>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK_MIT_0_30_CAN\hra</Output>
  <PollutantNum>64</PollutantNum>
  <Append>N</Append>
  <ReceptorIndex>NA</ReceptorIndex>
  <SourceName>NA</SourceName>
  <RiskScenario>
      <ReceptorType>Resident</ReceptorType><!--Residential, Population, School, or Worker-->
      <UDEDOn>N</UDEDOn><!--Y or N-->
      <ExposureDuration>30</ExposureDuration><!--years-->
      <Scenario>NCChronic</Scenario><!--Cancer, NCChronic, NCChronic8HR, NCAcute, All-->
      <StartAge>-0.25</StartAge><!--years-->
      <WorkerExposureFrequency>250</WorkerExposureFrequency><!--days/year-->
      <WorkerNote>NA</WorkerNote>
      <Tier2On>N</Tier2On>
      <IntakeRatePercentile>Derived</IntakeRatePercentile><!--HighEnd, Mean, Derived-->
  </RiskScenario>
<Pathways>
  <Type>4</Type>
  <PathwaysEnabled><!--Y or N-->
      <Inhalation>Y</Inhalation>
      <Soil>Y</Soil>
      <Dermal>Y</Dermal>
      <MothersMilk>Y</MothersMilk>
      <Water>N</Water>
      <Fish>N</Fish>
      <HomegrownCrop>Y</HomegrownCrop>
      <Beef>N</Beef>
      <Dairy>N</Dairy>
      <Pig>N</Pig>
      <Chicken>N</Chicken>
      <Egg>N</Egg>
  </PathwaysEnabled>
  <Inhalation>
      <FAH3rdTrito16>N</FAH3rdTrito16><!--Y or N-->
      <FAH16to70>N</FAH16to70><!--Y or N-->
      <DBRType>LongTerm24HR</DBRType><!--LongTerm24HR, RMP, SedentaryPassive8HR, Light8HR, or
Moderate8HR-->
      <GLCAdjustmentFactor>2.33</GLCAdjustmentFactor>
      <UseAdj>N</UseAdj><!--Y or N-->
      <USEPOSTFILE8REL>N</USEPOSTFILE8REL><!--Y or N-->
      <USEPOSTFILECAN>N</USEPOSTFILECAN><!--Y or N-->

```
  </Inhalation>
  <Deposition>0.02</Deposition>
  <SoilMixingRate>0.01</SoilMixingRate>
  <DermalClimate>Mixed</DermalClimate><!--Cold, Mixed, or Warm-->
  <HumanWater>
      <SurfaceArea>0</SurfaceArea><!--m^2-->
      <WaterVolume>0</WaterVolume><!--kg-->
      <VolumeChangesPerYear>0</VolumeChangesPerYear>
      <FractionFromContamSource>0</FractionFromContamSource>
      <RecPhysicallyActiveLivesWorkHotClimates>N</RecPhysicallyActiveLivesWorkHotClimates><!--Y or N-->
  </HumanWater>
  <Homegrown>
      <HouseholdType>HouseholdsthatGarden</HouseholdType><!--HouseholdsthatGarden, HouseholdsthatFarm, or
UserDefined-->
      <Leafy>0.137</Leafy>
      <Exposed>0.137</Exposed>
      <Protected>0.137</Protected>
      <Root>0.137</Root>
  </Homegrown>
  <Fish>
      <SurfaceArea>0</SurfaceArea><!--m^2-->
      <WaterVolume>0</WaterVolume><!--kg-->
      <VolumeChangesPerYear>0</VolumeChangesPerYear>
      <FractionFromContamSource>0</FractionFromContamSource>
  </Fish>
  <AnimalFractions>
      <HouseholdTypeBD>RaiseHunt</HouseholdTypeBD><!--RaiseHunt, Farm, or UserDefined-->
      <HouseholdTypePCE>RaiseHunt</HouseholdTypePCE><!--RaiseHunt, Farm, or UserDefined-->
      <Beef>0.485</Beef>
      <Pork>0.242</Pork>
      <Poultry>0.156</Poultry>
      <Eggs>0.146</Eggs>
      <Dairy>0.207</Dairy>
  </AnimalFractions>
  <BeefDairyWater>
      <SurfaceArea>0</SurfaceArea><!--m^2-->
      <WaterVolume>0</WaterVolume><!--kg-->
      <VolumeChangesPerYear>0</VolumeChangesPerYear>
      <FractionFromContamSourceBeef>0</FractionFromContamSourceBeef>
      <FractionFromContamSourceDairy>0</FractionFromContamSourceDairy>
  </BeefDairyWater>
  <BeefFractionFromGrazing>0.5</BeefFractionFromGrazing>
  <DairyFractionFromGrazing>0.5</DairyFractionFromGrazing>
  <PigChickenEggsWater>
      <SurfaceArea>0</SurfaceArea><!--m^2-->
      <WaterVolume>0</WaterVolume><!--kg-->
      <VolumeChangesPerYear>0</VolumeChangesPerYear>
      <FractionFromContamSourcePig>0</FractionFromContamSourcePig>
      <FractionFromContamSourceChicken>0</FractionFromContamSourceChicken>
      <FractionFromContamSourceEggs>0</FractionFromContamSourceEggs>
  </PigChickenEggsWater>
  <Pig>
      <FractionEatenOffGround>0</FractionEatenOffGround>
      <FractionFeedOnsiteContaminated>0.1</FractionFeedOnsiteContaminated>
```

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      <Leafy>0.25</Leafy>
      <Exposed>0.25</Exposed>
      <Protected>0.25</Protected>
      <Root>0.25</Root>
   </Pig>
   <Chicken>
      <FractionEatenOffGround>0</FractionEatenOffGround>
      <FractionFeedOnsiteContaminated>0.05</FractionFeedOnsiteContaminated>
      <Leafy>0.25</Leafy>
      <Exposed>0.25</Exposed>
      <Protected>0.25</Protected>
      <Root>0.25</Root>
   </Chicken>
   <Egg>
      <FractionEatenOffGround>0.05</FractionEatenOffGround>
      <FractionFeedOnsiteContaminated>0</FractionFeedOnsiteContaminated>
      <Leafy>0.25</Leafy>
      <Exposed>0.25</Exposed>
      <Protected>0.25</Protected>
      <Root>0.25</Root>
   </Egg>
</Pathways>
<Tier2>
      <EFOn>N</EFOn><!--Y or N-->
      <EF>350</EF>
      <Inhalation>
            <IROn>N</IROn><!--Y or N-->
            <Mean>225,658,535,452,210,185</Mean>
            <HighEnd>361,1090,861,745,335,290</HighEnd>
            <FAHOn>N</FAHOn><!--Y or N-->
            <FAH>0.85,0.85,0.72,0.72,0.73,0.73</FAH>
      </Inhalation>
      <Soil>
            <IROn>N</IROn><!--Y or N-->
            <Mean>0.7,20,5,3,0.7,0.6</Mean>
            <HighEnd>3,40,20,10,3,3</HighEnd>
            <TfOn>N</TfOn><!--Y or N-->
            <Tf>25550</Tf>
      </Soil>
      <Dermal>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>1100,2200,6600,5700,1100,1100</Mean>
            <HighEnd>2400,2900,8700,8100,2400,2400</HighEnd>
      </Dermal>
      <MothersMilk>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>101</Mean>
            <HighEnd>139</HighEnd>
      </MothersMilk>
      <Water>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>18,113,26,24,18,18</Mean>
            <HighEnd>47,196,66,61,47,45</HighEnd>
      </Water>
```

```
    <Fish>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>0.38,0.18,0.36,0.36,0.38,0.36</Mean>
        <HighEnd>1.22,0.58,1.16,1.16,1.22,1.16</HighEnd>
    </Fish>
    <CropIROn>N</CropIROn><!--Y or N-->
    <BDIROn>N</BDIROn><!--Y or N-->
    <PCEIROn>N</PCEIROn><!--Y or N-->
    <Leafy>
        <Mean>0.9,3.8,2.5,1.7,0.9,1.1</Mean>
        <HighEnd>3.2,10.8,7.9,5.8,3.2,3.4</HighEnd>
    </Leafy>
    <Exposed>
        <Mean>1.9,11.7,7.4,5.5,1.9,1.8</Mean>
        <HighEnd>5.9,30.2,21.7,16.6,5.9,5.6</HighEnd>
    </Exposed>
    <Protected>
        <Mean>1.7,5.9,4.7,3.6,1.7,1.6</Mean>
        <HighEnd>5.8,17.5,13.3,10.6,5.8,5.2</HighEnd>
    </Protected>
    <Root>
        <Mean>1.7,5.7,3.9,3.0,1.7,1.5</Mean>
        <HighEnd>4.6,15.3,10.8,8.7,4.6,4.2</HighEnd>
    </Root>
    <Beef>
        <Mean>2,3.9,3.5,3,2,1.7</Mean>
        <HighEnd>4.8,11.3,8.6,7.6,4.8,4.4</HighEnd>
    </Beef>
    <Dairy>
        <Mean>5.4,50.9,23.3,16.5,5.4,4.3</Mean>
        <HighEnd>15.9,116.1,61.4,48.4,15.9,13.2</HighEnd>
    </Dairy>
    <Pig>
        <Mean>0.9,2.9,2.2,1.8,0.9,0.9</Mean>
        <HighEnd>2.9,10.5,7.8,5.7,2.9,2.8</HighEnd>
    </Pig>
    <Chicken>
        <Mean>1.8,4.5,3.7,3.0,1.8,1.5</Mean>
        <HighEnd>4.7,11.4,9,7.5,4.7,3.8</HighEnd>
    </Chicken>
    <Egg>
        <Mean>1.6,6.1,3.9,3.1,1.6,1.3</Mean>
        <HighEnd>4.2,15,9.4,8.1,4.2,3.4</HighEnd>
    </Egg>
    <WhatWasChanged>NA</WhatWasChanged>
</Tier2>
</HRA>
```

<?xml version="1.0" encoding="UTF-8"?>
<!--HARP RISK INPUT FILE-->
<!--Created 2026/04/23 15:31:26-->
<HRA>
  <HRAVERSION>22118</HRAVERSION>
  <Title>0_30_MIT_Worker</Title>
  <AERMODMode>Y</AERMODMode><!--Read AERMOD plot file (Y) or read CSV file (N)-->
  <GLCList>C:\Z_HARPRUN\Rockfield HRA
v0.8\ROCK_MIT_0_30_CAN\hra\0_30_MIT_WorkerGLCList.csv</GLCList>
  <PollutantList>C:\Z_HARPRUN\Rockfield HRA
v0.8\ROCK_MIT_0_30_CAN\hra\0_30_MIT_WorkerPolDB.csv</PollutantList>
  <PathwayRecConc>C:\Z_HARPRUN\Rockfield HRA
v0.8\ROCK_MIT_0_30_CAN\hra\0_30_MIT_WorkerPathwayRec.csv</PathwayRecConc>
  <Output>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK_MIT_0_30_CAN\hra</Output>
  <PollutantNum>64</PollutantNum>
  <Append>N</Append>
  <ReceptorIndex>NA</ReceptorIndex>
  <SourceName>NA</SourceName>
  <RiskScenario>
      <ReceptorType>Worker</ReceptorType><!--Residential, Population, School, or Worker-->
      <UDEDOn>Y</UDEDOn><!--Y or N-->
      <ExposureDuration>40</ExposureDuration><!--years-->
      <Scenario>NCChronic</Scenario><!--Cancer, NCChronic, NCChronic8HR, NCAcute, All-->
      <StartAge>16</StartAge><!--years-->
      <WorkerExposureFrequency>250</WorkerExposureFrequency><!--days/year-->
      <WorkerNote>NA</WorkerNote>
      <Tier2On>Y</Tier2On>
      <IntakeRatePercentile>Derived</IntakeRatePercentile><!--HighEnd, Mean, Derived-->
  </RiskScenario>
<Pathways>
  <Type>3</Type>
  <PathwaysEnabled><!--Y or N-->
      <Inhalation>Y</Inhalation>
      <Soil>Y</Soil>
      <Dermal>Y</Dermal>
      <MothersMilk>N</MothersMilk>
      <Water>N</Water>
      <Fish>N</Fish>
      <HomegrownCrop>N</HomegrownCrop>
      <Beef>N</Beef>
      <Dairy>N</Dairy>
      <Pig>N</Pig>
      <Chicken>N</Chicken>
      <Egg>N</Egg>
  </PathwaysEnabled>
  <Inhalation>
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      <FAH16to70>N</FAH16to70><!--Y or N-->
      <DBRType>Moderate8HR</DBRType><!--LongTerm24HR, RMP, SedentaryPassive8HR, Light8HR, or
Moderate8HR-->
      <GLCAdjustmentFactor>2.33</GLCAdjustmentFactor>
      <UseAdj>Y</UseAdj><!--Y or N-->
      <USEPOSTFILE8REL>N</USEPOSTFILE8REL><!--Y or N-->

```
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  </Inhalation>
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  <DermalClimate>Mixed</DermalClimate><!--Cold, Mixed, or Warm-->
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    <WaterVolume>0</WaterVolume><!--kg-->
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    <FractionFromContamSource>0</FractionFromContamSource>
    <RecPhysicallyActiveLivesWorkHotClimates>N</RecPhysicallyActiveLivesWorkHotClimates><!--Y or N-->
  </HumanWater>
  <Homegrown>
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    <Exposed>0.137</Exposed>
    <Protected>0.137</Protected>
    <Root>0.137</Root>
  </Homegrown>
  <Fish>
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    <WaterVolume>0</WaterVolume><!--kg-->
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    <FractionFromContamSource>0</FractionFromContamSource>
  </Fish>
  <AnimalFractions>
    <HouseholdTypeBD>RaiseHunt</HouseholdTypeBD><!--RaiseHunt, Farm, or UserDefined-->
    <HouseholdTypePCE>RaiseHunt</HouseholdTypePCE><!--RaiseHunt, Farm, or UserDefined-->
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    <Pork>0.242</Pork>
    <Poultry>0.156</Poultry>
    <Eggs>0.146</Eggs>
    <Dairy>0.207</Dairy>
  </AnimalFractions>
  <BeefDairyWater>
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  </BeefDairyWater>
  <BeefFractionFromGrazing>0.5</BeefFractionFromGrazing>
  <DairyFractionFromGrazing>0.5</DairyFractionFromGrazing>
  <PigChickenEggsWater>
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    <VolumeChangesPerYear>0</VolumeChangesPerYear>
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    <FractionFromContamSourceChicken>0</FractionFromContamSourceChicken>
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  </PigChickenEggsWater>
  <Pig>
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```

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        <FractionFeedOnsiteContaminated>0.1</FractionFeedOnsiteContaminated>
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    <Egg>
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        <FractionFeedOnsiteContaminated>0</FractionFeedOnsiteContaminated>
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        <Exposed>0.25</Exposed>
        <Protected>0.25</Protected>
        <Root>0.25</Root>
    </Egg>
</Pathways>
<Tier2>
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    <EF>350</EF>
    <Inhalation>
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        <Mean>170,890,470,380,170,170</Mean>
        <HighEnd>240,1200,640,520,240,230</HighEnd>
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        <FAH>0.85,0.85,0.72,0.72,0.73,0.73</FAH>
    </Inhalation>
    <Soil>
        <IROn>N</IROn><!--Y or N-->
        <Mean>0.7,20,5,3,0.7,0.6</Mean>
        <HighEnd>3,40,20,10,3,3</HighEnd>
        <TfOn>N</TfOn><!--Y or N-->
        <Tf>25550</Tf>
    </Soil>
    <Dermal>
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        <HighEnd>0,0,0,0,0,5000</HighEnd>
    </Dermal>
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        <TfOn>N</TfOn><!--Y or N-->
        <Mean>101</Mean>
        <HighEnd>139</HighEnd>
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    <Water>
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        <HighEnd>47,196,66,61,47,45</HighEnd>
```

```
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    </Fish>
    <CropIROn>N</CropIROn><!--Y or N-->
    <BDIROn>N</BDIROn><!--Y or N-->
    <PCEIROn>N</PCEIROn><!--Y or N-->
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    </Leafy>
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        <Mean>1.9,11.7,7.4,5.5,1.9,1.8</Mean>
        <HighEnd>5.9,30.2,21.7,16.6,5.9,5.6</HighEnd>
    </Exposed>
    <Protected>
        <Mean>1.7,5.9,4.7,3.6,1.7,1.6</Mean>
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    </Protected>
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        <HighEnd>4.6,15.3,10.8,8.7,4.6,4.2</HighEnd>
    </Root>
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        <Mean>2,3.9,3.5,3,2,1.7</Mean>
        <HighEnd>4.8,11.3,8.6,7.6,4.8,4.4</HighEnd>
    </Beef>
    <Dairy>
        <Mean>5.4,50.9,23.3,16.5,5.4,4.3</Mean>
        <HighEnd>15.9,116.1,61.4,48.4,15.9,13.2</HighEnd>
    </Dairy>
    <Pig>
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    <Chicken>
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    </Egg>
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</Tier2>
</HRA>
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  <AERMODMode>Y</AERMODMode><!--Read AERMOD plot file (Y) or read CSV file (N)-->
  <GLCList>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD PRO 31_70 CAN\hra\31_70_PRO_GLCList.csv</GLCList>
  <PollutantList>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD PRO 31_70 CAN\hra\31_70_PRO_PolDB.csv</PollutantList>
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CAN\hra\31_70_PRO_PathwayRec.csv</PathwayRecConc>
  <Output>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD PRO 31_70 CAN\hra</Output>
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        <ExposureDuration>40</ExposureDuration><!--years-->
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        <StartAge>-0.25</StartAge><!--years-->
        <WorkerExposureFrequency>250</WorkerExposureFrequency><!--days/year-->
        <WorkerNote>NA</WorkerNote>
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        <IntakeRatePercentile>Derived</IntakeRatePercentile><!--HighEnd, Mean, Derived-->
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  <Type>4</Type>
  <PathwaysEnabled><!--Y or N-->
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```

```
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        <Pig>N</Pig>
        <Chicken>N</Chicken>
        <Egg>N</Egg>
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        <FAH16to70>N</FAH16to70><!--Y or N-->
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        <USEPOSTFILE8REL>N</USEPOSTFILE8REL><!--Y or N-->
        <USEPOSTFILECAN>N</USEPOSTFILECAN><!--Y or N-->
  </Inhalation>
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  <SoilMixingRate>0.01</SoilMixingRate>
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  </HumanWater>
  <Homegrown>
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UserDefined-->
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        <Exposed>0.137</Exposed>
        <Protected>0.137</Protected>
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  </Homegrown>
  <Fish>
        <SurfaceArea>0</SurfaceArea><!--m^2-->
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      <VolumeChangesPerYear>0</VolumeChangesPerYear>
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</Fish>
<AnimalFractions>
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      <HouseholdTypePCE>RaiseHunt</HouseholdTypePCE><!--RaiseHunt, Farm, or UserDefined-->
      <Beef>0.485</Beef>
      <Pork>0.242</Pork>
      <Poultry>0.156</Poultry>
      <Eggs>0.146</Eggs>
      <Dairy>0.207</Dairy>
</AnimalFractions>
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      <FractionFromContamSourceDairy>0</FractionFromContamSourceDairy>
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<BeefFractionFromGrazing>0.5</BeefFractionFromGrazing>
<DairyFractionFromGrazing>0.5</DairyFractionFromGrazing>
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      <VolumeChangesPerYear>0</VolumeChangesPerYear>
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</PigChickenEggsWater>
<Pig>
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      <Exposed>0.25</Exposed>
      <Protected>0.25</Protected>
```

```
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    <Chicken>
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        <FractionFeedOnsiteContaminated>0.05</FractionFeedOnsiteContaminated>
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        <Exposed>0.25</Exposed>
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        <Root>0.25</Root>
    </Chicken>
    <Egg>
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        <FractionFeedOnsiteContaminated>0</FractionFeedOnsiteContaminated>
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        <Exposed>0.25</Exposed>
        <Protected>0.25</Protected>
        <Root>0.25</Root>
    </Egg>
</Pathways>
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        <EF>350</EF>
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        </Inhalation>
        <Soil>
                <IROn>N</IROn><!--Y or N-->
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                <HighEnd>3,40,20,10,3,3</HighEnd>
                <TfOn>N</TfOn><!--Y or N-->
                <Tf>25550</Tf>
        </Soil>
```

```
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        <TfOn>N</TfOn><!--Y or N-->
        <Mean>101</Mean>
        <HighEnd>139</HighEnd>
</MothersMilk>
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        <HighEnd>47,196,66,61,47,45</HighEnd>
</Water>
<Fish>
        <TfOn>N</TfOn><!--Y or N-->
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        <HighEnd>1.22,0.58,1.16,1.16,1.22,1.16</HighEnd>
</Fish>
<CropIROn>N</CropIROn><!--Y or N-->
<BDIROn>N</BDIROn><!--Y or N-->
<PCEIROn>N</PCEIROn><!--Y or N-->
<Leafy>
        <Mean>0.9,3.8,2.5,1.7,0.9,1.1</Mean>
        <HighEnd>3.2,10.8,7.9,5.8,3.2,3.4</HighEnd>
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        <HighEnd>5.9,30.2,21.7,16.6,5.9,5.6</HighEnd>
</Exposed>
<Protected>
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        <HighEnd>5.8,17.5,13.3,10.6,5.8,5.2</HighEnd>
</Protected>
<Root>
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```
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        </Root>
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                <HighEnd>4.8,11.3,8.6,7.6,4.8,4.4</HighEnd>
        </Beef>
        <Dairy>
                <Mean>5.4,50.9,23.3,16.5,5.4,4.3</Mean>
                <HighEnd>15.9,116.1,61.4,48.4,15.9,13.2</HighEnd>
        </Dairy>
        <Pig>
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        </Pig>
        <Chicken>
                <Mean>1.8,4.5,3.7,3.0,1.8,1.5</Mean>
                <HighEnd>4.7,11.4,9,7.5,4.7,3.8</HighEnd>
        </Chicken>
        <Egg>
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                <HighEnd>4.2,15,9.4,8.1,4.2,3.4</HighEnd>
        </Egg>
        <WhatWasChanged>ED or start age changed|</WhatWasChanged>
</Tier2>
</HRA>
```

HARP2 - HRACalc (dated 22118) 4/23/2026 9:42:35 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCChronic
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: True
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****

INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD PRO 31_70 CAN\hra\31_70_PRO_NCChronicRisk.csv
Chronic risk total by receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD PRO 31_70 CAN\hra\31_70_PRO_NCChronicRiskSumByRec.csv

HRA ran successfully

APPENDIX I13 PROJECT HRA
MODELING FILES

Phase 2 (70 yr)

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  <PollutantList>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD PRO 31_100
CAN\hra\31_100_PRO_PolDB.csv</PollutantList>
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CAN\hra\31_100_PRO_PathwayRec.csv</PathwayRecConc>
  <Output>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD PRO 31_100 CAN\hra</Output>
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  <SourceName>NA</SourceName>
  <RiskScenario>
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      <ExposureDuration>70</ExposureDuration><!--years-->
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      <WorkerNote>NA</WorkerNote>
      <Tier2On>Y</Tier2On>
      <IntakeRatePercentile>Derived</IntakeRatePercentile><!--HighEnd, Mean, Derived-->
  </RiskScenario>
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  <PathwaysEnabled><!--Y or N-->
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      <Dermal>Y</Dermal>
      <MothersMilk>Y</MothersMilk>
      <Water>N</Water>
      <Fish>N</Fish>
      <HomegrownCrop>Y</HomegrownCrop>
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      <Dairy>N</Dairy>
      <Pig>N</Pig>
      <Chicken>N</Chicken>
      <Egg>N</Egg>
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  <Inhalation>
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      <FAH16to70>N</FAH16to70><!--Y or N-->
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Moderate8HR-->
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      <UseAdj>N</UseAdj><!--Y or N-->
      <USEPOSTFILE8REL>N</USEPOSTFILE8REL><!--Y or N-->
```

```
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  </Inhalation>
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  <SoilMixingRate>0.01</SoilMixingRate>
  <DermalClimate>Mixed</DermalClimate><!--Cold, Mixed, or Warm-->
  <HumanWater>
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    <VolumeChangesPerYear>0</VolumeChangesPerYear>
    <FractionFromContamSource>0</FractionFromContamSource>
    <RecPhysicallyActiveLivesWorkHotClimates>N</RecPhysicallyActiveLivesWorkHotClimates><!--Y or N-->
  </HumanWater>
  <Homegrown>
    <HouseholdType>HouseholdsthatGarden</HouseholdType><!--HouseholdsthatGarden, HouseholdsthatFarm, or
UserDefined-->
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    <Exposed>0.137</Exposed>
    <Protected>0.137</Protected>
    <Root>0.137</Root>
  </Homegrown>
  <Fish>
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    <WaterVolume>0</WaterVolume><!--kg-->
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  </Fish>
  <AnimalFractions>
    <HouseholdTypeBD>RaiseHunt</HouseholdTypeBD><!--RaiseHunt, Farm, or UserDefined-->
    <HouseholdTypePCE>RaiseHunt</HouseholdTypePCE><!--RaiseHunt, Farm, or UserDefined-->
    <Beef>0.485</Beef>
    <Pork>0.242</Pork>
    <Poultry>0.156</Poultry>
    <Eggs>0.146</Eggs>
    <Dairy>0.207</Dairy>
  </AnimalFractions>
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    <FractionFromContamSourceDairy>0</FractionFromContamSourceDairy>
  </BeefDairyWater>
  <BeefFractionFromGrazing>0.5</BeefFractionFromGrazing>
  <DairyFractionFromGrazing>0.5</DairyFractionFromGrazing>
  <PigChickenEggsWater>
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    <WaterVolume>0</WaterVolume><!--kg-->
    <VolumeChangesPerYear>0</VolumeChangesPerYear>
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    <FractionFromContamSourceChicken>0</FractionFromContamSourceChicken>
    <FractionFromContamSourceEggs>0</FractionFromContamSourceEggs>
  </PigChickenEggsWater>
  <Pig>
    <FractionEatenOffGround>0</FractionEatenOffGround>
```

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      <Protected>0.25</Protected>
      <Root>0.25</Root>
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   <Chicken>
      <FractionEatenOffGround>0</FractionEatenOffGround>
      <FractionFeedOnsiteContaminated>0.05</FractionFeedOnsiteContaminated>
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      <Protected>0.25</Protected>
      <Root>0.25</Root>
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   <Egg>
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      <Root>0.25</Root>
   </Egg>
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      </Inhalation>
      <Soil>
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            <Mean>0.7,20,5,3,0.7,0.6</Mean>
            <HighEnd>3,40,20,10,3,3</HighEnd>
            <TfOn>N</TfOn><!--Y or N-->
            <Tf>25550</Tf>
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      <Dermal>
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            <Mean>1100,2200,6600,5700,1100,1100</Mean>
            <HighEnd>2400,2900,8700,8100,2400,2400</HighEnd>
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      <MothersMilk>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>101</Mean>
            <HighEnd>139</HighEnd>
      </MothersMilk>
      <Water>
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            <HighEnd>47,196,66,61,47,45</HighEnd>
```

```
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    <Fish>
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        <HighEnd>1.22,0.58,1.16,1.16,1.22,1.16</HighEnd>
    </Fish>
    <CropIROn>N</CropIROn><!--Y or N-->
    <BDIROn>N</BDIROn><!--Y or N-->
    <PCEIROn>N</PCEIROn><!--Y or N-->
    <Leafy>
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    </Leafy>
    <Exposed>
        <Mean>1.9,11.7,7.4,5.5,1.9,1.8</Mean>
        <HighEnd>5.9,30.2,21.7,16.6,5.9,5.6</HighEnd>
    </Exposed>
    <Protected>
        <Mean>1.7,5.9,4.7,3.6,1.7,1.6</Mean>
        <HighEnd>5.8,17.5,13.3,10.6,5.8,5.2</HighEnd>
    </Protected>
    <Root>
        <Mean>1.7,5.7,3.9,3.0,1.7,1.5</Mean>
        <HighEnd>4.6,15.3,10.8,8.7,4.6,4.2</HighEnd>
    </Root>
    <Beef>
        <Mean>2,3.9,3.5,3,2,1.7</Mean>
        <HighEnd>4.8,11.3,8.6,7.6,4.8,4.4</HighEnd>
    </Beef>
    <Dairy>
        <Mean>5.4,50.9,23.3,16.5,5.4,4.3</Mean>
        <HighEnd>15.9,116.1,61.4,48.4,15.9,13.2</HighEnd>
    </Dairy>
    <Pig>
        <Mean>0.9,2.9,2.2,1.8,0.9,0.9</Mean>
        <HighEnd>2.9,10.5,7.8,5.7,2.9,2.8</HighEnd>
    </Pig>
    <Chicken>
        <Mean>1.8,4.5,3.7,3.0,1.8,1.5</Mean>
        <HighEnd>4.7,11.4,9,7.5,4.7,3.8</HighEnd>
    </Chicken>
    <Egg>
        <Mean>1.6,6.1,3.9,3.1,1.6,1.3</Mean>
        <HighEnd>4.2,15,9.4,8.1,4.2,3.4</HighEnd>
    </Egg>
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</Tier2>
</HRA>
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  <GLCList>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD PRO 31_100
CAN\hra\31_100_PRO_WorkerGLCList.csv</GLCList>
  <PollutantList>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD PRO 31_100
CAN\hra\31_100_PRO_WorkerPolDB.csv</PollutantList>
  <PathwayRecConc>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD PRO 31_100
CAN\hra\31_100_PRO_WorkerPathwayRec.csv</PathwayRecConc>
  <Output>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD PRO 31_100 CAN\hra</Output>
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  <Append>N</Append>
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  <SourceName>NA</SourceName>
  <RiskScenario>
      <ReceptorType>Worker</ReceptorType><!--Residential, Population, School, or Worker-->
      <UDEDOn>Y</UDEDOn><!--Y or N-->
      <ExposureDuration>70</ExposureDuration><!--years-->
      <Scenario>NCChronic</Scenario><!--Cancer, NCChronic, NCChronic8HR, NCAcute, All-->
      <StartAge>16</StartAge><!--years-->
      <WorkerExposureFrequency>250</WorkerExposureFrequency><!--days/year-->
      <WorkerNote>NA</WorkerNote>
      <Tier2On>Y</Tier2On>
      <IntakeRatePercentile>Derived</IntakeRatePercentile><!--HighEnd, Mean, Derived-->
  </RiskScenario>
<Pathways>
  <Type>3</Type>
  <PathwaysEnabled><!--Y or N-->
      <Inhalation>Y</Inhalation>
      <Soil>Y</Soil>
      <Dermal>Y</Dermal>
      <MothersMilk>N</MothersMilk>
      <Water>N</Water>
      <Fish>N</Fish>
      <HomegrownCrop>N</HomegrownCrop>
      <Beef>N</Beef>
      <Dairy>N</Dairy>
      <Pig>N</Pig>
      <Chicken>N</Chicken>
      <Egg>N</Egg>
  </PathwaysEnabled>
  <Inhalation>
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      <FAH16to70>N</FAH16to70><!--Y or N-->
      <DBRType>Moderate8HR</DBRType><!--LongTerm24HR, RMP, SedentaryPassive8HR, Light8HR, or
Moderate8HR-->
      <GLCAdjustmentFactor>2.33</GLCAdjustmentFactor>
      <UseAdj>Y</UseAdj><!--Y or N-->
      <USEPOSTFILE8REL>N</USEPOSTFILE8REL><!--Y or N-->

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    <WaterVolume>0</WaterVolume><!--kg-->
    <VolumeChangesPerYear>0</VolumeChangesPerYear>
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    <RecPhysicallyActiveLivesWorkHotClimates>N</RecPhysicallyActiveLivesWorkHotClimates><!--Y or N-->
  </HumanWater>
  <Homegrown>
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UserDefined-->
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    <Exposed>0.137</Exposed>
    <Protected>0.137</Protected>
    <Root>0.137</Root>
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  <AnimalFractions>
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    <HouseholdTypePCE>RaiseHunt</HouseholdTypePCE><!--RaiseHunt, Farm, or UserDefined-->
    <Beef>0.485</Beef>
    <Pork>0.242</Pork>
    <Poultry>0.156</Poultry>
    <Eggs>0.146</Eggs>
    <Dairy>0.207</Dairy>
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  <BeefDairyWater>
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    <FractionFromContamSourceDairy>0</FractionFromContamSourceDairy>
  </BeefDairyWater>
  <BeefFractionFromGrazing>0.5</BeefFractionFromGrazing>
  <DairyFractionFromGrazing>0.5</DairyFractionFromGrazing>
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    <FractionFromContamSourceChicken>0</FractionFromContamSourceChicken>
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  </PigChickenEggsWater>
  <Pig>
    <FractionEatenOffGround>0</FractionEatenOffGround>
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        <Exposed>0.25</Exposed>
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    <Egg>
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        <Exposed>0.25</Exposed>
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</Pathways>
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        <HighEnd>240,1200,640,520,240,230</HighEnd>
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        <FAH>0.85,0.85,0.72,0.72,0.73,0.73</FAH>
    </Inhalation>
    <Soil>
        <IROn>N</IROn><!--Y or N-->
        <Mean>0.7,20,5,3,0.7,0.6</Mean>
        <HighEnd>3,40,20,10,3,3</HighEnd>
        <TfOn>N</TfOn><!--Y or N-->
        <Tf>25550</Tf>
    </Soil>
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        <HighEnd>0,0,0,0,0,5000</HighEnd>
    </Dermal>
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        <HighEnd>139</HighEnd>
    </MothersMilk>
    <Water>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>18,113,26,24,18,18</Mean>
        <HighEnd>47,196,66,61,47,45</HighEnd>
```

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    </Fish>
    <CropIROn>N</CropIROn><!--Y or N-->
    <BDIROn>N</BDIROn><!--Y or N-->
    <PCEIROn>N</PCEIROn><!--Y or N-->
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        <HighEnd>3.2,10.8,7.9,5.8,3.2,3.4</HighEnd>
    </Leafy>
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        <HighEnd>5.9,30.2,21.7,16.6,5.9,5.6</HighEnd>
    </Exposed>
    <Protected>
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        <HighEnd>5.8,17.5,13.3,10.6,5.8,5.2</HighEnd>
    </Protected>
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        <Mean>1.7,5.7,3.9,3.0,1.7,1.5</Mean>
        <HighEnd>4.6,15.3,10.8,8.7,4.6,4.2</HighEnd>
    </Root>
    <Beef>
        <Mean>2,3.9,3.5,3,2,1.7</Mean>
        <HighEnd>4.8,11.3,8.6,7.6,4.8,4.4</HighEnd>
    </Beef>
    <Dairy>
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        <HighEnd>15.9,116.1,61.4,48.4,15.9,13.2</HighEnd>
    </Dairy>
    <Pig>
        <Mean>0.9,2.9,2.2,1.8,0.9,0.9</Mean>
        <HighEnd>2.9,10.5,7.8,5.7,2.9,2.8</HighEnd>
    </Pig>
    <Chicken>
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        <HighEnd>4.7,11.4,9,7.5,4.7,3.8</HighEnd>
    </Chicken>
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        <HighEnd>4.2,15,9.4,8.1,4.2,3.4</HighEnd>
    </Egg>
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</HRA>
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<!--Created 2026/04/23 17:21:57-->
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  <PollutantList>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFILED PRO 31_100
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ACUTE\hra\31_100_PRO_PathwayRec.csv</PathwayRecConc>
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  <SourceName>NA</SourceName>
  <RiskScenario>
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      <Scenario>NCAcute</Scenario><!--Cancer, NCChronic, NCChronic8HR, NCAcute, All-->
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      <MothersMilk>N</MothersMilk>
      <Water>N</Water>
      <Fish>N</Fish>
      <HomegrownCrop>N</HomegrownCrop>
      <Beef>N</Beef>
      <Dairy>N</Dairy>
      <Pig>N</Pig>
      <Chicken>N</Chicken>
      <Egg>N</Egg>
  </PathwaysEnabled>
  <Inhalation>
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      <FAH16to70>N</FAH16to70><!--Y or N-->
      <DBRType>Moderate8HR</DBRType><!--LongTerm24HR, RMP, SedentaryPassive8HR, Light8HR, or
Moderate8HR-->
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      <UseAdj>N</UseAdj><!--Y or N-->
      <USEPOSTFILE8REL>N</USEPOSTFILE8REL><!--Y or N-->

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  <DermalClimate>Mixed</DermalClimate><!--Cold, Mixed, or Warm-->
  <HumanWater>
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    <WaterVolume>0</WaterVolume><!--kg-->
    <VolumeChangesPerYear>0</VolumeChangesPerYear>
    <FractionFromContamSource>0</FractionFromContamSource>
    <RecPhysicallyActiveLivesWorkHotClimates>N</RecPhysicallyActiveLivesWorkHotClimates><!--Y or N-->
  </HumanWater>
  <Homegrown>
    <HouseholdType>HouseholdsthatGarden</HouseholdType><!--HouseholdsthatGarden, HouseholdsthatFarm, or
UserDefined-->
    <Leafy>0.137</Leafy>
    <Exposed>0.137</Exposed>
    <Protected>0.137</Protected>
    <Root>0.137</Root>
  </Homegrown>
  <Fish>
    <SurfaceArea>0</SurfaceArea><!--m^2-->
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    <FractionFromContamSource>0</FractionFromContamSource>
  </Fish>
  <AnimalFractions>
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    <HouseholdTypePCE>RaiseHunt</HouseholdTypePCE><!--RaiseHunt, Farm, or UserDefined-->
    <Beef>0.485</Beef>
    <Pork>0.242</Pork>
    <Poultry>0.156</Poultry>
    <Eggs>0.146</Eggs>
    <Dairy>0.207</Dairy>
  </AnimalFractions>
  <BeefDairyWater>
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    <WaterVolume>0</WaterVolume><!--kg-->
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    <FractionFromContamSourceDairy>0</FractionFromContamSourceDairy>
  </BeefDairyWater>
  <BeefFractionFromGrazing>0.5</BeefFractionFromGrazing>
  <DairyFractionFromGrazing>0.5</DairyFractionFromGrazing>
  <PigChickenEggsWater>
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    <WaterVolume>0</WaterVolume><!--kg-->
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  <Pig>
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      <FractionEatenOffGround>0</FractionEatenOffGround>
      <FractionFeedOnsiteContaminated>0.05</FractionFeedOnsiteContaminated>
      <Leafy>0.25</Leafy>
      <Exposed>0.25</Exposed>
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      <Exposed>0.25</Exposed>
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      <Root>0.25</Root>
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</Pathways>
<Tier2>
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            <HighEnd>361,1090,861,745,335,290</HighEnd>
            <FAHOn>N</FAHOn><!--Y or N-->
            <FAH>0.85,0.85,0.72,0.72,0.73,0.73</FAH>
      </Inhalation>
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            <Mean>0.7,20,5,3,0.7,0.6</Mean>
            <HighEnd>3,40,20,10,3,3</HighEnd>
            <TfOn>N</TfOn><!--Y or N-->
            <Tf>25550</Tf>
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      <Dermal>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>1100,2200,6600,5700,1100,1100</Mean>
            <HighEnd>2400,2900,8700,8100,2400,2400</HighEnd>
      </Dermal>
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            <Mean>101</Mean>
            <HighEnd>139</HighEnd>
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            <HighEnd>47,196,66,61,47,45</HighEnd>
```

```
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        <Mean>0.38,0.18,0.36,0.36,0.38,0.36</Mean>
        <HighEnd>1.22,0.58,1.16,1.16,1.22,1.16</HighEnd>
    </Fish>
    <CropIROn>N</CropIROn><!--Y or N-->
    <BDIROn>N</BDIROn><!--Y or N-->
    <PCEIROn>N</PCEIROn><!--Y or N-->
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        <HighEnd>3.2,10.8,7.9,5.8,3.2,3.4</HighEnd>
    </Leafy>
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        <HighEnd>5.9,30.2,21.7,16.6,5.9,5.6</HighEnd>
    </Exposed>
    <Protected>
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        <HighEnd>5.8,17.5,13.3,10.6,5.8,5.2</HighEnd>
    </Protected>
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    </Root>
    <Beef>
        <Mean>2,3.9,3.5,3,2,1.7</Mean>
        <HighEnd>4.8,11.3,8.6,7.6,4.8,4.4</HighEnd>
    </Beef>
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    </Dairy>
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    </Pig>
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        <HighEnd>4.7,11.4,9,7.5,4.7,3.8</HighEnd>
    </Chicken>
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        <HighEnd>4.2,15,9.4,8.1,4.2,3.4</HighEnd>
    </Egg>
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</HRA>
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HARP2 - HRACalc (dated 22118) 4/23/2026 4:51:48 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCChronic
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: True
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD PRO 31_100 CAN\hra\31_100_PRO_NCChronicRisk.csv
Chronic risk total by receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD PRO 31_100 CAN\hra\31_100_PRO_NCChronicRiskSumByRec.csv
HRA ran successfully

HARP2 - HRACalc (dated 22118) 4/23/2026 4:55:04 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: NCChronic
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
NOTE: The worker adjustment factors below are only used for cancer assessments. However, the GLC adjustment factor is also applied to 8-hr noncancer chronic assessments.
Worker adjustments factors enabled: YES
GLC adjustment factor: 2.33
Exposure frequency: 250

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD PRO 31_100 CAN\hra\31_100_PRO_WorkerNCChronicRisk.csv
Chronic risk total by receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD PRO 31_100 CAN\hra\31_100_PRO_WorkerNCChronicRiskSumByRec.csv
HRA ran successfully

HARP2 - HRACalc (dated 22118) 4/23/2026 5:21:59 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: NCAcute
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
TIER 2 SETTINGS
Tier2 not used.

****

Calculating acute risk

Acute risk breakdown by pollutant and receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFILED PRO 31_100 ACUTE\hra\31_100_PRO_NCAcuteRisk.csv
Acute risk total by receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFILED PRO 31_100 ACUTE\hra\31_100_PRO_NCAcuteRiskSumByRec.csv
HRA ran successfully

APPENDIX I14 PROJECT OFF-SITE HAUL ROADSIDE RECEPTOR HRA MODELING FILES

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```
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** AERMOD Input Produced by:
** AERMOD View Ver. 13.0.0
** Lakes Environmental Software Inc.
** Date: 1/3/2026
** File: C:\z_AERMOD\Rockfield\RealisticRoadSimulation\RealisticRoadSimulation.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
  TITLEONE C:\z_AERMOD\CEMEX\RealisticRoadSimulation\RealisticRoadSimulation.is
  MODELOPT DFAULT CONC
  AVERTIME 1 PERIOD
  POLLUTID HRA
  RUNORNOT RUN
  SAVEFILE RealisticRoadSimulation.sv1 5
  ERRORFIL RealisticRoadSimulation.err
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** ----------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC
** PREFIX
** Length of Side = 21.00
** Configuration = Adjacent
** Emission Rate = 1.0
** Elevated
** Vertical Dimension = 6.80
** SZINIT = 1.58
** Nodes = 43
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** 258595.626, 4097022.194, 104.03, 3.40, 9.77
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LOCATION L0005646 VOLUME 257091.198 4094616.945 99.37
LOCATION L0005647 VOLUME 257089.106 4094596.049 99.31
LOCATION L0005648 VOLUME 257087.015 4094575.154 99.21
LOCATION L0005649 VOLUME 257084.923 4094554.258 99.11
LOCATION L0005650 VOLUME 257082.832 4094533.363 99.04
LOCATION L0005651 VOLUME 257080.741 4094512.467 99.03
LOCATION L0005652 VOLUME 257078.747 4094491.562 99.11
LOCATION L0005653 VOLUME 257076.863 4094470.647 99.14
LOCATION L0005654 VOLUME 257074.978 4094449.732 99.12
LOCATION L0005655 VOLUME 257073.094 4094428.816 99.09
LOCATION L0005656 VOLUME 257071.210 4094407.901 99.07
LOCATION L0005657 VOLUME 257070.622 4094386.943 99.38
LOCATION L0005658 VOLUME 257071.110 4094365.948 99.31
LOCATION L0005659 VOLUME 257072.687 4094345.023 99.30
LOCATION L0005660 VOLUME 257074.863 4094324.136 99.30
LOCATION L0005661 VOLUME 257077.039 4094303.249 99.12
LOCATION L0005662 VOLUME 257079.215 4094282.362 99.07
LOCATION L0005663 VOLUME 257082.535 4094261.680 98.77
LOCATION L0005664 VOLUME 257087.722 4094241.330 98.78
LOCATION L0005665 VOLUME 257092.883 4094220.975 98.68
LOCATION L0005666 VOLUME 257097.577 4094200.506 98.58
LOCATION L0005667 VOLUME 257102.272 4094180.038 98.61
LOCATION L0005668 VOLUME 257106.966 4094159.569 98.55
LOCATION L0005669 VOLUME 257111.661 4094139.100 98.53
LOCATION L0005670 VOLUME 257116.356 4094118.632 98.60
LOCATION L0005671 VOLUME 257121.050 4094098.163 98.54
LOCATION L0005672 VOLUME 257125.745 4094077.695 98.58
LOCATION L0005673 VOLUME 257130.439 4094057.226 98.63
LOCATION L0005674 VOLUME 257135.134 4094036.758 98.62
LOCATION L0005675 VOLUME 257139.828 4094016.289 98.87

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   LOCATION L0005676     VOLUME   257144.523 4093995.821 99.35
   LOCATION L0005677     VOLUME   257149.218 4093975.352 99.50
   LOCATION L0005678     VOLUME   257153.806 4093954.860 99.46
   LOCATION L0005679     VOLUME   257158.379 4093934.364 99.58
   LOCATION L0005680     VOLUME   257162.953 4093913.868 99.70
   LOCATION L0005681     VOLUME   257167.526 4093893.372 99.63
   LOCATION L0005682     VOLUME   257172.197 4093872.899 99.80
   LOCATION L0005683     VOLUME   257177.208 4093852.505 99.64
   LOCATION L0005684     VOLUME   257182.220 4093832.112 99.55
   LOCATION L0005685     VOLUME   257187.231 4093811.719 99.41
   LOCATION L0005686     VOLUME   257192.243 4093791.326 99.18
   LOCATION L0005687     VOLUME   257197.254 4093770.932 99.13
   LOCATION L0005688     VOLUME   257202.266 4093750.539 99.04
   LOCATION L0005689     VOLUME   257207.250 4093730.139 98.93
   LOCATION L0005690     VOLUME   257211.879 4093709.656 98.92
   LOCATION L0005691     VOLUME   257216.507 4093689.172 98.72
   LOCATION L0005692     VOLUME   257221.136 4093668.689 98.71
   LOCATION L0005693     VOLUME   257225.718 4093648.195 98.64
   LOCATION L0005694     VOLUME   257230.044 4093627.645 98.35
   LOCATION L0005695     VOLUME   257234.370 4093607.096 98.35
   LOCATION L0005696     VOLUME   257238.696 4093586.546 98.16
   LOCATION L0005697     VOLUME   257243.022 4093565.997 98.21
   LOCATION L0005698     VOLUME   257247.349 4093545.447 98.04
** End of LINE VOLUME Source ID = SLINE1
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** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE2
** DESCRSRC
** PREFIX
** Length of Side = 21.00
** Configuration = Adjacent
** Emission Rate = 1.0
** Elevated
** Vertical Dimension = 6.80
** SZINIT = 1.58
** Nodes = 33
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** 257259.092, 4093481.613, 98.09, 3.40, 9.77
** 257261.503, 4093404.463, 98.57, 3.40, 9.77
** 257260.699, 4093357.851, 98.79, 3.40, 9.77
** 257258.288, 4093248.555, 99.01, 3.40, 9.77
** 257255.073, 4093165.779, 98.83, 3.40, 9.77
** 257244.183, 4093092.845, 98.80, 3.40, 9.77
** 257229.716, 4093043.013, 98.47, 3.40, 9.77
** 257216.052, 4093001.218, 98.45, 3.40, 9.77
** 257196.762, 4092960.227, 97.87, 3.40, 9.77
** 257169.435, 4092905.573, 97.45, 3.40, 9.77
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** 257046.778, 4092750.191, 97.72, 3.40, 9.77
** 257009.895, 4092711.417, 97.91, 3.40, 9.77
** 256974.904, 4092666.968, 98.79, 3.40, 9.77
** 256938.021, 4092609.279, 98.69, 3.40, 9.77
** 256914.378, 4092562.939, 98.61, 3.40, 9.77
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** 256868.038, 4092356.774, 96.80, 3.40, 9.77
** 256853.256, 4091821.448, 96.02, 3.40, 9.77
** 256849.856, 4091650.329, 95.91, 3.40, 9.77
** 256847.590, 4091534.740, 95.86, 3.40, 9.77
** 256844.190, 4091393.085, 95.93, 3.40, 9.77
** 256841.924, 4091279.762, 95.66, 3.40, 9.77
** 256837.391, 4091184.570, 95.26, 3.40, 9.77
** 256831.279, 4090962.895, 94.95, 3.40, 9.77
** 256831.279, 4090869.961, 95.16, 3.40, 9.77
** 256825.612, 4090799.693, 95.30, 3.40, 9.77
** 256810.878, 4090720.359, 95.63, 3.40, 9.77
** 256780.278, 4090641.024, 95.79, 3.40, 9.77
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LOCATION	L0005739	VOLUME	257251.978	4093524.297 98.03
LOCATION	L0005740	VOLUME	257255.430	4093503.583 98.07
LOCATION	L0005741	VOLUME	257258.882	4093482.868 98.17
LOCATION	L0005742	VOLUME	257259.708	4093461.895 98.16
LOCATION	L0005743	VOLUME	257260.364	4093440.905 98.21
LOCATION	L0005744	VOLUME	257261.020	4093419.916 98.39
LOCATION	L0005745	VOLUME	257261.407	4093398.924 98.65
LOCATION	L0005746	VOLUME	257261.045	4093377.927 98.76
LOCATION	L0005747	VOLUME	257260.679	4093356.930 98.81
LOCATION	L0005748	VOLUME	257260.216	4093335.936 98.88
LOCATION	L0005749	VOLUME	257259.752	4093314.941 98.92
LOCATION	L0005750	VOLUME	257259.289	4093293.946 98.97
LOCATION	L0005751	VOLUME	257258.826	4093272.951 99.00
LOCATION	L0005752	VOLUME	257258.363	4093251.956 99.02
LOCATION	L0005753	VOLUME	257257.605	4093230.970 98.93
LOCATION	L0005754	VOLUME	257256.790	4093209.986 98.79
LOCATION	L0005755	VOLUME	257255.975	4093189.002 98.75
LOCATION	L0005756	VOLUME	257255.160	4093168.018 98.81
LOCATION	L0005757	VOLUME	257252.303	4093147.225 98.76
LOCATION	L0005758	VOLUME	257249.202	4093126.455 98.71
LOCATION	L0005759	VOLUME	257246.101	4093105.685 98.73
LOCATION	L0005760	VOLUME	257241.948	4093085.146 98.67
LOCATION	L0005761	VOLUME	257236.093	4093064.978 98.58
LOCATION	L0005762	VOLUME	257230.238	4093044.811 98.48
LOCATION	L0005763	VOLUME	257223.772	4093024.832 98.39
LOCATION	L0005764	VOLUME	257217.247	4093004.872 98.36
LOCATION	L0005765	VOLUME	257208.747	4092985.695 98.19
LOCATION	L0005766	VOLUME	257199.806	4092966.694 98.00
LOCATION	L0005767	VOLUME	257190.567	4092947.837 97.84
LOCATION	L0005768	VOLUME	257181.176	4092929.054 97.70
LOCATION	L0005769	VOLUME	257171.784	4092910.271 97.59
LOCATION	L0005770	VOLUME	257161.047	4092892.245 97.41
LOCATION	L0005771	VOLUME	257149.861	4092874.472 97.26
LOCATION	L0005772	VOLUME	257138.012	4092857.166 97.11
LOCATION	L0005773	VOLUME	257125.047	4092840.646 96.90
LOCATION	L0005774	VOLUME	257111.763	4092824.391 96.79
LOCATION	L0005775	VOLUME	257097.928	4092808.593 96.80
LOCATION	L0005776	VOLUME	257084.092	4092792.795 96.85

LOCATION	L0005777	VOLUME	257070.256	4092776.998 97.18
LOCATION	L0005778	VOLUME	257056.420	4092761.200 97.46
LOCATION	L0005779	VOLUME	257042.391	4092745.578 97.75
LOCATION	L0005780	VOLUME	257027.917	4092730.363 98.02
LOCATION	L0005781	VOLUME	257013.444	4092715.147 98.15
LOCATION	L0005782	VOLUME	257000.090	4092698.962 98.45
LOCATION	L0005783	VOLUME	256987.101	4092682.461 98.63
LOCATION	L0005784	VOLUME	256974.213	4092665.888 98.75
LOCATION	L0005785	VOLUME	256962.901	4092648.195 98.81
LOCATION	L0005786	VOLUME	256951.590	4092630.502 98.82
LOCATION	L0005787	VOLUME	256940.278	4092612.809 98.72
LOCATION	L0005788	VOLUME	256930.381	4092594.305 98.66
LOCATION	L0005789	VOLUME	256920.837	4092575.599 98.65
LOCATION	L0005790	VOLUME	256912.039	4092556.567 98.46
LOCATION	L0005791	VOLUME	256904.802	4092536.853 98.16
LOCATION	L0005792	VOLUME	256897.566	4092517.140 98.00
LOCATION	L0005793	VOLUME	256890.329	4092497.426 97.78
LOCATION	L0005794	VOLUME	256884.434	4092477.313 97.45
LOCATION	L0005795	VOLUME	256879.712	4092456.851 97.44
LOCATION	L0005796	VOLUME	256875.138	4092436.359 97.14
LOCATION	L0005797	VOLUME	256871.557	4092415.666 97.23
LOCATION	L0005798	VOLUME	256867.975	4092394.974 97.14
LOCATION	L0005799	VOLUME	256867.544	4092374.056 97.08
LOCATION	L0005800	VOLUME	256867.936	4092353.065 97.03
LOCATION	L0005801	VOLUME	256867.356	4092332.073 96.90
LOCATION	L0005802	VOLUME	256866.776	4092311.081 96.74
LOCATION	L0005803	VOLUME	256866.197	4092290.089 96.56
LOCATION	L0005804	VOLUME	256865.617	4092269.097 96.49
LOCATION	L0005805	VOLUME	256865.037	4092248.105 96.44
LOCATION	L0005806	VOLUME	256864.458	4092227.113 96.41
LOCATION	L0005807	VOLUME	256863.878	4092206.121 96.39
LOCATION	L0005808	VOLUME	256863.299	4092185.129 96.35
LOCATION	L0005809	VOLUME	256862.719	4092164.137 96.32
LOCATION	L0005810	VOLUME	256862.139	4092143.145 96.28
LOCATION	L0005811	VOLUME	256861.560	4092122.153 96.25
LOCATION	L0005812	VOLUME	256860.980	4092101.161 96.21
LOCATION	L0005813	VOLUME	256860.400	4092080.169 96.19
LOCATION	L0005814	VOLUME	256859.821	4092059.177 96.16
LOCATION	L0005815	VOLUME	256859.241	4092038.185 96.15
LOCATION	L0005816	VOLUME	256858.661	4092017.193 96.14
LOCATION	L0005817	VOLUME	256858.082	4091996.201 96.12
LOCATION	L0005818	VOLUME	256857.502	4091975.209 96.11
LOCATION	L0005819	VOLUME	256856.922	4091954.217 96.07
LOCATION	L0005820	VOLUME	256856.343	4091933.225 96.05
LOCATION	L0005821	VOLUME	256855.763	4091912.233 96.05
LOCATION	L0005822	VOLUME	256855.183	4091891.241 96.05
LOCATION	L0005823	VOLUME	256854.604	4091870.249 96.03
LOCATION	L0005824	VOLUME	256854.024	4091849.257 96.02
LOCATION	L0005825	VOLUME	256853.444	4091828.265 96.03
LOCATION	L0005826	VOLUME	256852.974	4091807.270 96.00
LOCATION	L0005827	VOLUME	256852.557	4091786.274 96.01
LOCATION	L0005828	VOLUME	256852.140	4091765.278 96.00
LOCATION	L0005829	VOLUME	256851.723	4091744.283 95.99
LOCATION	L0005830	VOLUME	256851.306	4091723.287 95.98

LOCATION L0005831 VOLUME 256850.889 4091702.291 96.00
LOCATION L0005832 VOLUME 256850.471 4091681.295 95.97
LOCATION L0005833 VOLUME 256850.054 4091660.299 95.95
LOCATION L0005834 VOLUME 256849.640 4091639.303 95.93
LOCATION L0005835 VOLUME 256849.228 4091618.307 95.92
LOCATION L0005836 VOLUME 256848.817 4091597.311 95.91
LOCATION L0005837 VOLUME 256848.405 4091576.315 95.91
LOCATION L0005838 VOLUME 256847.993 4091555.319 95.91
LOCATION L0005839 VOLUME 256847.580 4091534.323 95.90
LOCATION L0005840 VOLUME 256847.076 4091513.330 95.92
LOCATION L0005841 VOLUME 256846.572 4091492.336 95.92
LOCATION L0005842 VOLUME 256846.068 4091471.342 95.98
LOCATION L0005843 VOLUME 256845.564 4091450.348 95.97
LOCATION L0005844 VOLUME 256845.061 4091429.354 95.97
LOCATION L0005845 VOLUME 256844.557 4091408.360 95.94
LOCATION L0005846 VOLUME 256844.076 4091387.365 95.91
LOCATION L0005847 VOLUME 256843.656 4091366.369 95.87
LOCATION L0005848 VOLUME 256843.236 4091345.374 95.86
LOCATION L0005849 VOLUME 256842.816 4091324.378 95.79
LOCATION L0005850 VOLUME 256842.396 4091303.382 95.75
LOCATION L0005851 VOLUME 256841.976 4091282.386 95.70
LOCATION L0005852 VOLUME 256841.050 4091261.408 95.60
LOCATION L0005853 VOLUME 256840.051 4091240.431 95.53
LOCATION L0005854 VOLUME 256839.052 4091219.455 95.49
LOCATION L0005855 VOLUME 256838.053 4091198.479 95.40
LOCATION L0005856 VOLUME 256837.196 4091177.497 95.35
LOCATION L0005857 VOLUME 256836.617 4091156.505 95.31
LOCATION L0005858 VOLUME 256836.038 4091135.513 95.24
LOCATION L0005859 VOLUME 256835.459 4091114.521 94.62
LOCATION L0005860 VOLUME 256834.881 4091093.529 91.56
LOCATION L0005861 VOLUME 256834.302 4091072.537 91.36
LOCATION L0005862 VOLUME 256833.723 4091051.545 94.81
LOCATION L0005863 VOLUME 256833.144 4091030.553 95.02
LOCATION L0005864 VOLUME 256832.565 4091009.561 94.94
LOCATION L0005865 VOLUME 256831.987 4090988.569 94.97
LOCATION L0005866 VOLUME 256831.408 4090967.577 94.98
LOCATION L0005867 VOLUME 256831.279 4090946.579 94.96
LOCATION L0005868 VOLUME 256831.279 4090925.579 94.98
LOCATION L0005869 VOLUME 256831.279 4090904.579 95.02
LOCATION L0005870 VOLUME 256831.279 4090883.579 95.06
LOCATION L0005871 VOLUME 256830.685 4090862.603 95.05
LOCATION L0005872 VOLUME 256828.997 4090841.671 94.86
LOCATION L0005873 VOLUME 256827.309 4090820.739 94.99
LOCATION L0005874 VOLUME 256825.621 4090799.807 95.22
LOCATION L0005875 VOLUME 256821.798 4090779.158 95.30
LOCATION L0005876 VOLUME 256817.964 4090758.511 95.35
LOCATION L0005877 VOLUME 256814.130 4090737.864 95.40
LOCATION L0005878 VOLUME 256809.729 4090717.378 95.48
LOCATION L0005879 VOLUME 256802.171 4090697.785 95.45
LOCATION L0005880 VOLUME 256794.614 4090678.192 95.45
LOCATION L0005881 VOLUME 256787.057 4090658.599 95.54
** End of LINE VOLUME Source ID = SLINE2
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** Line Source Represented by Adjacent Volume Sources

** LINE VOLUME Source ID = SLINE3
** DESCRSRC
** PREFIX
** Length of Side = 21.00
** Configuration = Adjacent
** Emission Rate = 1.0
** Elevated
** Vertical Dimension = 6.80
** SZINIT = 1.58
** Nodes = 12
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** 256720.508, 4090499.704, 95.94, 3.40, 9.77
** 256675.228, 4090388.912, 96.31, 3.40, 9.77
** 256636.691, 4090301.242, 96.75, 3.40, 9.77
** 256591.411, 4090185.634, 98.01, 3.40, 9.77
** 256566.363, 4090121.085, 98.48, 3.40, 9.77
** 256544.263, 4090063.240, 98.02, 3.40, 9.77
** 256530.681, 4089987.182, 96.90, 3.40, 9.77
** 256526.607, 4089851.365, 95.76, 3.40, 9.77
** 256522.532, 4089757.651, 96.01, 3.40, 9.77
** 256498.262, 4089659.597, 96.16, 3.40, 9.77
** 256483.271, 4089615.622, 96.36, 3.40, 9.77
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LOCATION	L0005882	VOLUME	256774.390	4090633.511 95.69
LOCATION	L0005883	VOLUME	256766.546	4090614.031 95.73
LOCATION	L0005884	VOLUME	256758.701	4090594.552 95.71
LOCATION	L0005885	VOLUME	256750.857	4090575.072 95.69
LOCATION	L0005886	VOLUME	256743.013	4090555.592 95.69
LOCATION	L0005887	VOLUME	256735.169	4090536.112 95.71
LOCATION	L0005888	VOLUME	256727.324	4090516.632 95.78
LOCATION	L0005889	VOLUME	256719.467	4090497.157 95.85
LOCATION	L0005890	VOLUME	256711.522	4090477.718 95.93
LOCATION	L0005891	VOLUME	256703.578	4090458.279 96.02
LOCATION	L0005892	VOLUME	256695.633	4090438.840 96.10
LOCATION	L0005893	VOLUME	256687.688	4090419.401 96.20
LOCATION	L0005894	VOLUME	256679.743	4090399.961 96.30
LOCATION	L0005895	VOLUME	256671.580	4090380.615 96.40
LOCATION	L0005896	VOLUME	256663.130	4090361.390 96.49
LOCATION	L0005897	VOLUME	256654.680	4090342.165 96.55
LOCATION	L0005898	VOLUME	256646.229	4090322.941 96.62
LOCATION	L0005899	VOLUME	256637.779	4090303.716 96.70
LOCATION	L0005900	VOLUME	256630.018	4090284.204 96.86
LOCATION	L0005901	VOLUME	256622.360	4090264.651 97.03
LOCATION	L0005902	VOLUME	256614.701	4090245.097 97.20
LOCATION	L0005903	VOLUME	256607.043	4090225.543 97.48
LOCATION	L0005904	VOLUME	256599.384	4090205.990 97.75
LOCATION	L0005905	VOLUME	256591.726	4090186.436 98.05
LOCATION	L0005906	VOLUME	256584.126	4090166.859 98.23
LOCATION	L0005907	VOLUME	256576.529	4090147.282 98.33
LOCATION	L0005908	VOLUME	256568.931	4090127.704 98.35
LOCATION	L0005909	VOLUME	256561.402	4090108.101 98.29
LOCATION	L0005910	VOLUME	256553.907	4090088.483 98.21
LOCATION	L0005911	VOLUME	256546.413	4090068.866 98.09
LOCATION	L0005912	VOLUME	256541.630	4090048.496 97.77

LOCATION L0005913 VOLUME 256537.939 4090027.823 98.03
LOCATION L0005914 VOLUME 256534.247 4090007.150 97.45
LOCATION L0005915 VOLUME 256530.660 4089986.466 97.23
LOCATION L0005916 VOLUME 256530.030 4089965.476 97.16
LOCATION L0005917 VOLUME 256529.400 4089944.485 97.01
LOCATION L0005918 VOLUME 256528.771 4089923.495 96.68
LOCATION L0005919 VOLUME 256528.141 4089902.504 96.42
LOCATION L0005920 VOLUME 256527.511 4089881.514 96.17
LOCATION L0005921 VOLUME 256526.881 4089860.523 95.92
LOCATION L0005922 VOLUME 256526.093 4089839.538 95.70
LOCATION L0005923 VOLUME 256525.180 4089818.558 95.54
LOCATION L0005924 VOLUME 256524.268 4089797.578 95.67
LOCATION L0005925 VOLUME 256523.356 4089776.598 95.87
LOCATION L0005926 VOLUME 256522.043 4089755.675 96.09
LOCATION L0005927 VOLUME 256516.998 4089735.291 95.85
LOCATION L0005928 VOLUME 256511.952 4089714.906 95.95
LOCATION L0005929 VOLUME 256506.907 4089694.521 95.86
LOCATION L0005930 VOLUME 256501.861 4089674.136 96.10
LOCATION L0005931 VOLUME 256496.319 4089653.897 96.20
LOCATION L0005932 VOLUME 256489.543 4089634.020 96.30
** End of LINE VOLUME Source ID = SLINE3
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** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE4
** DESCRSRC
** PREFIX
** Length of Side = 21.00
** Configuration = Adjacent
** Emission Rate = 1.0
** Elevated
** Vertical Dimension = 6.80
** SZINIT = 1.58
** Nodes = 28
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** 256445.612, 4089511.983, 95.64, 3.40, 9.77
** 256385.640, 4089368.520, 94.90, 3.40, 9.77
** 256338.603, 4089242.696, 94.47, 3.40, 9.77
** 256300.973, 4089155.677, 94.46, 3.40, 9.77
** 256253.936, 4089073.362, 93.80, 3.40, 9.77
** 256193.831, 4088990.616, 93.90, 3.40, 9.77
** 256105.004, 4088901.067, 93.96, 3.40, 9.77
** 255913.705, 4088692.321, 93.81, 3.40, 9.77
** 255838.989, 4088625.907, 93.68, 3.40, 9.77
** 255758.739, 4088578.864, 93.76, 3.40, 9.77
** 255468.520, 4088474.590, 94.11, 3.40, 9.77
** 255268.442, 4088400.171, 101.90, 3.40, 9.77
** 255190.363, 4088359.911, 105.87, 3.40, 9.77
** 255112.283, 4088303.792, 108.26, 3.40, 9.77
** 255056.164, 4088253.772, 109.70, 3.40, 9.77
** 254996.384, 4088178.133, 110.34, 3.40, 9.77
** 254902.764, 4088054.147, 111.47, 3.40, 9.77
** 254862.572, 4088005.342, 111.86, 3.40, 9.77
** 254836.734, 4087979.504, 111.94, 3.40, 9.77
** 254773.574, 4087930.699, 112.18, 3.40, 9.77

** 254681.706, 4087876.152, 112.08, 3.40, 9.77
** 254602.757, 4087833.089, 111.96, 3.40, 9.77
** 254492.228, 4087772.800, 111.79, 3.40, 9.77
** 254397.488, 4087721.124, 111.50, 3.40, 9.77
** 254294.137, 4087666.577, 111.46, 3.40, 9.77
** 254190.785, 4087609.160, 111.32, 3.40, 9.77
** 254148.885, 4087582.080, 111.36, 3.40, 9.77
** ----------

LOCATION	L0005933	VOLUME	256479.617	4089604.434 96.28
LOCATION	L0005934	VOLUME	256472.368	4089584.725 96.03
LOCATION	L0005935	VOLUME	256465.118	4089565.016 96.02
LOCATION	L0005936	VOLUME	256457.869	4089545.307 96.05
LOCATION	L0005937	VOLUME	256450.620	4089525.598 95.93
LOCATION	L0005938	VOLUME	256443.108	4089505.992 95.76
LOCATION	L0005939	VOLUME	256435.008	4089486.617 95.55
LOCATION	L0005940	VOLUME	256426.909	4089467.242 95.38
LOCATION	L0005941	VOLUME	256418.809	4089447.866 95.24
LOCATION	L0005942	VOLUME	256410.710	4089428.491 95.13
LOCATION	L0005943	VOLUME	256402.610	4089409.116 95.03
LOCATION	L0005944	VOLUME	256394.511	4089389.741 94.95
LOCATION	L0005945	VOLUME	256386.411	4089370.366 94.77
LOCATION	L0005946	VOLUME	256378.987	4089350.723 94.66
LOCATION	L0005947	VOLUME	256371.633	4089331.053 94.60
LOCATION	L0005948	VOLUME	256364.280	4089311.382 94.57
LOCATION	L0005949	VOLUME	256356.926	4089291.712 94.58
LOCATION	L0005950	VOLUME	256349.573	4089272.041 94.59
LOCATION	L0005951	VOLUME	256342.220	4089252.371 94.58
LOCATION	L0005952	VOLUME	256334.367	4089232.901 94.43
LOCATION	L0005953	VOLUME	256326.032	4089213.626 94.22
LOCATION	L0005954	VOLUME	256317.697	4089194.351 94.10
LOCATION	L0005955	VOLUME	256309.362	4089175.076 94.06
LOCATION	L0005956	VOLUME	256301.027	4089155.801 94.07
LOCATION	L0005957	VOLUME	256290.621	4089137.562 93.94
LOCATION	L0005958	VOLUME	256280.202	4089119.329 93.88
LOCATION	L0005959	VOLUME	256269.783	4089101.095 93.79
LOCATION	L0005960	VOLUME	256259.364	4089082.862 93.75
LOCATION	L0005961	VOLUME	256248.025	4089065.224 93.66
LOCATION	L0005962	VOLUME	256235.683	4089048.234 93.68
LOCATION	L0005963	VOLUME	256223.341	4089031.243 93.54
LOCATION	L0005964	VOLUME	256211.000	4089014.252 93.60
LOCATION	L0005965	VOLUME	256198.658	4088997.261 93.72
LOCATION	L0005966	VOLUME	256184.826	4088981.538 93.75
LOCATION	L0005967	VOLUME	256170.037	4088966.629 93.82
LOCATION	L0005968	VOLUME	256155.248	4088951.720 93.83
LOCATION	L0005969	VOLUME	256140.459	4088936.810 93.96
LOCATION	L0005970	VOLUME	256125.670	4088921.901 93.97
LOCATION	L0005971	VOLUME	256110.881	4088906.992 93.86
LOCATION	L0005972	VOLUME	256096.454	4088891.737 93.85
LOCATION	L0005973	VOLUME	256082.266	4088876.255 93.89
LOCATION	L0005974	VOLUME	256068.078	4088860.773 93.95
LOCATION	L0005975	VOLUME	256053.890	4088845.291 94.06
LOCATION	L0005976	VOLUME	256039.702	4088829.809 94.08
LOCATION	L0005977	VOLUME	256025.514	4088814.327 93.99
LOCATION	L0005978	VOLUME	256011.325	4088798.845 94.01

LOCATION L0005979 VOLUME 255997.137 4088783.363 93.96
LOCATION L0005980 VOLUME 255982.949 4088767.880 93.97
LOCATION L0005981 VOLUME 255968.761 4088752.398 93.91
LOCATION L0005982 VOLUME 255954.573 4088736.916 93.93
LOCATION L0005983 VOLUME 255940.385 4088721.434 93.88
LOCATION L0005984 VOLUME 255926.196 4088705.952 93.84
LOCATION L0005985 VOLUME 255911.828 4088690.653 93.83
LOCATION L0005986 VOLUME 255896.132 4088676.701 93.70
LOCATION L0005987 VOLUME 255880.437 4088662.750 93.67
LOCATION L0005988 VOLUME 255864.741 4088648.798 93.67
LOCATION L0005989 VOLUME 255849.046 4088634.846 93.71
LOCATION L0005990 VOLUME 255832.480 4088622.092 93.75
LOCATION L0005991 VOLUME 255814.364 4088611.472 93.68
LOCATION L0005992 VOLUME 255796.247 4088600.851 93.67
LOCATION L0005993 VOLUME 255778.130 4088590.231 93.70
LOCATION L0005994 VOLUME 255760.014 4088579.611 93.78
LOCATION L0005995 VOLUME 255740.366 4088572.263 93.72
LOCATION L0005996 VOLUME 255720.603 4088565.162 93.65
LOCATION L0005997 VOLUME 255700.840 4088558.061 93.66
LOCATION L0005998 VOLUME 255681.077 4088550.961 93.73
LOCATION L0005999 VOLUME 255661.314 4088543.860 93.76
LOCATION L0006000 VOLUME 255641.551 4088536.759 93.57
LOCATION L0006001 VOLUME 255621.788 4088529.658 93.52
LOCATION L0006002 VOLUME 255602.025 4088522.558 93.61
LOCATION L0006003 VOLUME 255582.262 4088515.457 93.55
LOCATION L0006004 VOLUME 255562.499 4088508.356 93.53
LOCATION L0006005 VOLUME 255542.736 4088501.255 93.60
LOCATION L0006006 VOLUME 255522.972 4088494.155 93.68
LOCATION L0006007 VOLUME 255503.209 4088487.054 93.72
LOCATION L0006008 VOLUME 255483.446 4088479.953 93.85
LOCATION L0006009 VOLUME 255463.703 4088472.798 94.11
LOCATION L0006010 VOLUME 255444.020 4088465.477 94.56
LOCATION L0006011 VOLUME 255424.338 4088458.157 94.82
LOCATION L0006012 VOLUME 255404.655 4088450.836 95.23
LOCATION L0006013 VOLUME 255384.973 4088443.515 95.97
LOCATION L0006014 VOLUME 255365.290 4088436.194 97.01
LOCATION L0006015 VOLUME 255345.608 4088428.873 97.66
LOCATION L0006016 VOLUME 255325.925 4088421.552 98.73
LOCATION L0006017 VOLUME 255306.242 4088414.231 99.95
LOCATION L0006018 VOLUME 255286.560 4088406.910 101.14
LOCATION L0006019 VOLUME 255266.958 4088399.406 102.01
LOCATION L0006020 VOLUME 255248.293 4088389.782 103.00
LOCATION L0006021 VOLUME 255229.628 4088380.158 104.12
LOCATION L0006022 VOLUME 255210.964 4088370.534 105.01
LOCATION L0006023 VOLUME 255192.299 4088360.909 105.89
LOCATION L0006024 VOLUME 255175.079 4088348.926 106.32
LOCATION L0006025 VOLUME 255158.027 4088336.670 106.96
LOCATION L0006026 VOLUME 255140.974 4088324.413 107.57
LOCATION L0006027 VOLUME 255123.922 4088312.157 108.12
LOCATION L0006028 VOLUME 255107.306 4088299.356 108.60
LOCATION L0006029 VOLUME 255091.630 4088285.383 109.03
LOCATION L0006030 VOLUME 255075.953 4088271.410 109.43
LOCATION L0006031 VOLUME 255060.276 4088257.437 109.76
LOCATION L0006032 VOLUME 255046.558 4088241.618 109.84

LOCATION L0006033 VOLUME 255033.537 4088225.143 109.98
LOCATION L0006034 VOLUME 255020.516 4088208.667 110.15
LOCATION L0006035 VOLUME 255007.495 4088192.191 110.30
LOCATION L0006036 VOLUME 254994.528 4088175.674 110.40
LOCATION L0006037 VOLUME 254981.873 4088158.915 110.61
LOCATION L0006038 VOLUME 254969.219 4088142.156 110.71
LOCATION L0006039 VOLUME 254956.564 4088125.397 110.82
LOCATION L0006040 VOLUME 254943.910 4088108.638 110.67
LOCATION L0006041 VOLUME 254931.255 4088091.879 110.85
LOCATION L0006042 VOLUME 254918.601 4088075.120 111.14
LOCATION L0006043 VOLUME 254905.946 4088058.361 111.40
LOCATION L0006044 VOLUME 254892.771 4088042.012 111.60
LOCATION L0006045 VOLUME 254879.421 4088025.802 111.66
LOCATION L0006046 VOLUME 254866.071 4088009.591 111.79
LOCATION L0006047 VOLUME 254851.615 4087994.385 111.88
LOCATION L0006048 VOLUME 254836.766 4087979.536 111.95
LOCATION L0006049 VOLUME 254820.153 4087966.691 112.02
LOCATION L0006050 VOLUME 254803.536 4087953.851 112.11
LOCATION L0006051 VOLUME 254786.919 4087941.010 112.12
LOCATION L0006052 VOLUME 254770.018 4087928.587 112.09
LOCATION L0006053 VOLUME 254751.961 4087917.866 112.10
LOCATION L0006054 VOLUME 254733.904 4087907.145 112.13
LOCATION L0006055 VOLUME 254715.848 4087896.423 112.14
LOCATION L0006056 VOLUME 254697.791 4087885.702 112.12
LOCATION L0006057 VOLUME 254679.692 4087875.053 112.09
LOCATION L0006058 VOLUME 254661.256 4087864.998 112.04
LOCATION L0006059 VOLUME 254642.821 4087854.942 112.01
LOCATION L0006060 VOLUME 254624.385 4087844.886 111.97
LOCATION L0006061 VOLUME 254605.949 4087834.830 111.94
LOCATION L0006062 VOLUME 254587.513 4087824.774 111.92
LOCATION L0006063 VOLUME 254569.077 4087814.718 111.90
LOCATION L0006064 VOLUME 254550.642 4087804.662 111.87
LOCATION L0006065 VOLUME 254532.206 4087794.606 111.85
LOCATION L0006066 VOLUME 254513.770 4087784.550 111.81
LOCATION L0006067 VOLUME 254495.334 4087774.495 111.77
LOCATION L0006068 VOLUME 254476.898 4087764.439 111.75
LOCATION L0006069 VOLUME 254458.463 4087754.383 111.73
LOCATION L0006070 VOLUME 254440.027 4087744.327 111.72
LOCATION L0006071 VOLUME 254421.591 4087734.271 111.69
LOCATION L0006072 VOLUME 254403.155 4087724.215 111.62
LOCATION L0006073 VOLUME 254384.625 4087714.335 111.57
LOCATION L0006074 VOLUME 254366.053 4087704.533 111.54
LOCATION L0006075 VOLUME 254347.481 4087694.731 111.49
LOCATION L0006076 VOLUME 254328.909 4087684.929 111.43
LOCATION L0006077 VOLUME 254310.337 4087675.127 111.38
LOCATION L0006078 VOLUME 254291.792 4087665.275 111.38
LOCATION L0006079 VOLUME 254273.435 4087655.076 111.35
LOCATION L0006080 VOLUME 254255.077 4087644.878 111.33
LOCATION L0006081 VOLUME 254236.720 4087634.679 111.30
LOCATION L0006082 VOLUME 254218.363 4087624.481 111.26
LOCATION L0006083 VOLUME 254200.005 4087614.282 111.27
LOCATION L0006084 VOLUME 254182.007 4087603.486 111.31
LOCATION L0006085 VOLUME 254164.370 4087592.088 111.36
** End of LINE VOLUME Source ID = SLINE4

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** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE5
** DESCRSRC
** PREFIX
** Length of Side = 21.00
** Configuration = Adjacent
** Emission Rate = 1.0
** Elevated
** Vertical Dimension = 6.80
** SZINIT = 1.58
** Nodes = 12
** 254113.825, 4087568.031, 111.43, 3.40, 9.77
** 254017.721, 4087512.485, 111.33, 3.40, 9.77
** 253954.240, 4087473.691, 111.25, 3.40, 9.77
** 253902.220, 4087431.370, 111.12, 3.40, 9.77
** 253856.373, 4087386.404, 111.08, 3.40, 9.77
** 253815.815, 4087338.793, 110.94, 3.40, 9.77
** 253789.364, 4087296.472, 110.83, 3.40, 9.77
** 253753.215, 4087234.754, 110.57, 3.40, 9.77
** 253677.365, 4087102.298, 110.26, 3.40, 9.77
** 253641.053, 4087036.045, 110.31, 3.40, 9.77
** 253601.905, 4086970.986, 110.03, 3.40, 9.77
** 253589.163, 4086944.753, 109.90, 3.40, 9.77
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LOCATION L0006086 VOLUME 254104.734 4087562.777 111.47
LOCATION L0006087 VOLUME 254086.552 4087552.268 111.53
LOCATION L0006088 VOLUME 254068.371 4087541.760 111.53
LOCATION L0006089 VOLUME 254050.189 4087531.251 111.49
LOCATION L0006090 VOLUME 254032.008 4087520.742 111.40
LOCATION L0006091 VOLUME 254013.882 4087510.139 111.34
LOCATION L0006092 VOLUME 253995.963 4087499.189 111.30
LOCATION L0006093 VOLUME 253978.044 4087488.238 111.30
LOCATION L0006094 VOLUME 253960.126 4087477.288 111.29
LOCATION L0006095 VOLUME 253943.301 4087464.791 111.25
LOCATION L0006096 VOLUME 253927.011 4087451.538 111.18
LOCATION L0006097 VOLUME 253910.721 4087438.285 111.16
LOCATION L0006098 VOLUME 253895.051 4087424.339 111.13
LOCATION L0006099 VOLUME 253880.058 4087409.634 111.11
LOCATION L0006100 VOLUME 253865.066 4087394.930 111.08
LOCATION L0006101 VOLUME 253850.651 4087379.687 111.02
LOCATION L0006102 VOLUME 253837.033 4087363.701 111.00
LOCATION L0006103 VOLUME 253823.415 4087347.715 110.96
LOCATION L0006104 VOLUME 253810.897 4087330.923 110.94
LOCATION L0006105 VOLUME 253799.767 4087313.115 110.88
LOCATION L0006106 VOLUME 253788.670 4087295.287 110.84
LOCATION L0006107 VOLUME 253778.057 4087277.166 110.74
LOCATION L0006108 VOLUME 253767.443 4087259.046 110.67
LOCATION L0006109 VOLUME 253756.830 4087240.925 110.54
LOCATION L0006110 VOLUME 253746.334 4087222.737 110.46
LOCATION L0006111 VOLUME 253735.898 4087204.513 110.44
LOCATION L0006112 VOLUME 253725.462 4087186.290 110.42
LOCATION L0006113 VOLUME 253715.027 4087168.066 110.37
LOCATION L0006114 VOLUME 253704.591 4087149.843 110.32

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  LOCATION L0006115     VOLUME   253694.155 4087131.619 110.32
  LOCATION L0006116     VOLUME   253683.720 4087113.396 110.33
  LOCATION L0006117     VOLUME   253673.418 4087095.097 110.31
  LOCATION L0006118     VOLUME   253663.325 4087076.682 110.31
  LOCATION L0006119     VOLUME   253653.232 4087058.266 110.34
  LOCATION L0006120     VOLUME   253643.139 4087039.851 110.30
  LOCATION L0006121     VOLUME   253632.463 4087021.770 110.21
  LOCATION L0006122     VOLUME   253621.636 4087003.776 110.11
  LOCATION L0006123     VOLUME   253610.809 4086985.783 110.05
  LOCATION L0006124     VOLUME   253600.275 4086967.630 109.96
  LOCATION L0006125     VOLUME   253591.100 4086948.740 109.90
** End of LINE VOLUME Source ID = SLINE5
** ----------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE6
** DESCRSRC
** PREFIX
** Length of Side = 21.00
** Configuration = Adjacent
** Emission Rate = 1.0
** Elevated
** Vertical Dimension = 6.80
** SZINIT = 1.58
** Nodes = 8
** 253578.769, 4086927.818, 109.86, 3.40, 9.77
** 253548.787, 4086875.791, 109.59, 3.40, 9.77
** 253526.742, 4086849.336, 109.44, 3.40, 9.77
** 253503.814, 4086824.645, 109.28, 3.40, 9.77
** 253473.833, 4086790.255, 109.08, 3.40, 9.77
** 253422.688, 4086754.982, 108.85, 3.40, 9.77
** 253373.306, 4086721.473, 108.67, 3.40, 9.77
** 253239.927, 4086666.439, 108.05, 3.40, 9.77
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  LOCATION L0006126     VOLUME   253573.526 4086918.720 109.85
  LOCATION L0006127     VOLUME   253563.041 4086900.525 109.77
  LOCATION L0006128     VOLUME   253552.555 4086882.330 109.65
  LOCATION L0006129     VOLUME   253540.175 4086865.456 109.45
  LOCATION L0006130     VOLUME   253526.730 4086849.324 109.33
  LOCATION L0006131     VOLUME   253512.441 4086833.935 109.25
  LOCATION L0006132     VOLUME   253498.345 4086818.372 109.23
  LOCATION L0006133     VOLUME   253484.546 4086802.543 109.15
  LOCATION L0006134     VOLUME   253469.966 4086787.588 109.10
  LOCATION L0006135     VOLUME   253452.678 4086775.665 108.97
  LOCATION L0006136     VOLUME   253435.391 4086763.743 108.86
  LOCATION L0006137     VOLUME   253418.079 4086751.855 108.82
  LOCATION L0006138     VOLUME   253400.702 4086740.064 108.80
  LOCATION L0006139     VOLUME   253383.325 4086728.272 108.75
  LOCATION L0006140     VOLUME   253365.087 4086718.082 108.67
  LOCATION L0006141     VOLUME   253345.674 4086710.072 108.63
  LOCATION L0006142     VOLUME   253326.262 4086702.062 108.60
  LOCATION L0006143     VOLUME   253306.849 4086694.052 108.47
  LOCATION L0006144     VOLUME   253287.437 4086686.043 108.29
  LOCATION L0006145     VOLUME   253268.024 4086678.033 108.30
  LOCATION L0006146     VOLUME   253248.612 4086670.023 108.26
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** End of LINE VOLUME Source ID = SLINE6
** ----------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE7
** DESCRSRC
** PREFIX
** Length of Side = 11.00
** Configuration = Adjacent
** Emission Rate = 1.0
** Elevated
** Vertical Dimension = 6.80
** SZINIT = 1.58
** Nodes = 46
** 256504.988, 4089610.019, 97.13, 3.40, 5.12
** 256531.229, 4089590.683, 98.45, 3.40, 5.12
** 256546.421, 4089563.521, 99.69, 3.40, 5.12
** 256560.232, 4089511.039, 102.67, 3.40, 5.12
** 256580.028, 4089453.953, 105.46, 3.40, 5.12
** 256607.189, 4089387.200, 107.36, 3.40, 5.12
** 256632.510, 4089324.590, 110.45, 3.40, 5.12
** 256654.607, 4089274.410, 111.73, 3.40, 5.12
** 256676.694, 4089214.883, 113.92, 3.40, 5.12
** 256713.067, 4089140.757, 117.37, 3.40, 5.12
** 256783.050, 4089066.631, 117.78, 3.40, 5.12
** 256849.349, 4088991.123, 118.88, 3.40, 5.12
** 256879.313, 4088950.679, 119.64, 3.40, 5.12
** 256920.100, 4088894.597, 119.79, 3.40, 5.12
** 256945.592, 4088837.877, 119.93, 3.40, 5.12
** 256964.711, 4088772.872, 119.48, 3.40, 5.12
** 256967.898, 4088726.987, 118.77, 3.40, 5.12
** 256968.727, 4088684.049, 118.93, 3.40, 5.12
** 256961.328, 4088643.884, 118.03, 3.40, 5.12
** 256942.302, 4088565.666, 116.73, 3.40, 5.12
** 256928.561, 4088509.646, 116.16, 3.40, 5.12
** 256911.649, 4088434.599, 115.71, 3.40, 5.12
** 256894.738, 4088382.806, 115.40, 3.40, 5.12
** 256865.142, 4088320.444, 115.19, 3.40, 5.12
** 256833.432, 4088274.993, 115.11, 3.40, 5.12
** 256778.702, 4088206.092, 114.87, 3.40, 5.12
** 256735.850, 4088156.748, 114.66, 3.40, 5.12
** 256660.690, 4088063.168, 115.09, 3.40, 5.12
** 256629.506, 4088023.849, 115.75, 3.40, 5.12
** 256615.948, 4088002.156, 116.21, 3.40, 5.12
** 256591.453, 4087954.038, 115.79, 3.40, 5.12
** 256572.228, 4087905.519, 115.85, 3.40, 5.12
** 256560.328, 4087835.030, 115.06, 3.40, 5.12
** 256563.074, 4087761.794, 115.55, 3.40, 5.12
** 256574.059, 4087700.459, 116.38, 3.40, 5.12
** 256600.607, 4087639.124, 117.07, 3.40, 5.12
** 256643.633, 4087564.057, 117.46, 3.40, 5.12
** 256692.819, 4087490.495, 117.62, 3.40, 5.12
** 256717.723, 4087443.801, 116.51, 3.40, 5.12
** 256736.555, 4087385.375, 117.56, 3.40, 5.12
** 256749.996, 4087318.171, 119.49, 3.40, 5.12

** 256749.996, 4087234.166, 119.32, 3.40, 5.12
** 256749.996, 4087116.560, 120.16, 3.40, 5.12
** 256746.635, 4086988.872, 120.19, 3.40, 5.12
** 256746.635, 4086901.507, 120.39, 3.40, 5.12
** 256736.555, 4086820.863, 120.30, 3.40, 5.12
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LOCATION L0006147 VOLUME 256509.415 4089606.756 97.31
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** LINE VOLUME Source ID = SLINE5
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  SRCPARAM L0006092        0.025    3.40    9.77    1.58
  SRCPARAM L0006093        0.025    3.40    9.77    1.58
  SRCPARAM L0006094        0.025    3.40    9.77    1.58
  SRCPARAM L0006095        0.025    3.40    9.77    1.58
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  SRCPARAM L0006097        0.025    3.40    9.77    1.58
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  SRCPARAM L0006146    0.0476190476     3.40     9.77     1.58
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  SRCPARAM VOL2              1.0     3.400     7.509     9.360
  SRCPARAM VOL3              1.0     3.400    11.495    11.500
  SRCPARAM VOL4              1.0     3.400     6.437     6.440
  SRCPARAM VOL5              1.0     3.400     8.540     8.540
  SRCPARAM VOL6              1.0     3.400    11.084    11.080
  SRCPARAM VOL7              1.0     3.400     8.047     9.590

** Variable Emissions Type: "By Hour-of-Day (HROFDY)"
** Variable Emission Scenario: "Scenario 2"
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EMISFACT L0006423 HROFDY 1.0 1.0 1.0 1.0 1.0 1.0

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  SRCGROUP VOL5     VOL5
  SRCGROUP VOL6     VOL6
  SRCGROUP VOL7     VOL7
  SRCGROUP ALL
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** AERMOD Receptor Pathway
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RE STARTING
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RE FINISHED
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** AERMOD Meteorology Pathway
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ME STARTING
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  UAIRDATA 23230 2018 OAKLAND/WSO_AP
  PROFBASE 100.0 METERS
ME FINISHED
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** AERMOD Output Pathway
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  RECTABLE 1 1ST
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  PLOTFILE PERIOD SLINE2 RealisticRoadSimulation.AD\PE00G002.PLT 48
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OU FINISHED
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** Project Parameters
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** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
```

** DATUM World Geodetic System 1984
** DTMRGN Global Definition
** UNITS m
** ZONE 11
** ZONEINX 0
**

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** MODEL SETUP OPTIONS SUMMARY ***

** Model Options Selected:
* Model Uses Regulatory DEFAULT Options
* Model Is Setup For Calculation of Average CONCentration Values.
* NO GAS DEPOSITION Data Provided.
* NO PARTICLE DEPOSITION Data Provided.
* Model Uses NO DRY DEPLETION. DDPLETE = F
* Model Uses NO WET DEPLETION. WETDPLT = F
* Stack-tip Downwash.
* Model Accounts for ELEVated Terrain Effects.
* Use Calms Processing Routine.
* Use Missing Data Processing Routine.
* No Exponential Decay.
* Model Uses RURAL Dispersion Only.
* ADJ_U* - Use ADJ_U* option for SBL in AERMET
* CCVR_Sub - Meteorological data includes CCVR substitutions
* TEMP_Sub - Meteorological data includes TEMP substitutions
* Model Assumes No FLAGPOLE Receptor Heights.
* The User Specified a Pollutant Type of: HRA

**Model Calculates 1 Short Term Average(s) of: 1-HR
and Calculates PERIOD Averages

**This Run Includes: 896 Source(s); 15 Source Group(s); and 4968 Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 896 VOLUME source(s)
and: 0 AREA type source(s)
and: 0 LINE source(s)
and: 0 RLINE/RLINEXT source(s)
and: 0 OPENPIT source(s)
and: 0 BUOYANT LINE source(s) with a total of 0 line(s)
and: 0 SWPOINT source(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 21112

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 100.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 7.7 MB of RAM.

**Input Runstream File: aermod.inp
**Output Print File: aermod.out

**File for Saving Result Arrays: RealisticRoadSimulation.sv1
**Detailed Error/Message File: RealisticRoadSimulation.err
**File for Summary of Results: RealisticRoadSimulation.sum

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

1 1 1

Profile file: ..\CancerBurden\Fresno_18-22.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 93193 Upper air station no.: 23230
Name: FRESNO/AIR_TERMINAL Name: OAKLAND/WSO_AP
Year: 2018 Year: 2018

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
18	01	01	1	01	-6.0	0.108	-9.000	-9.000	-999.	85.	18.7	0.17	1.06	1.00	1.20	347.	10.0	280.9	2.0
18	01	01	1	02	-2.0	0.062	-9.000	-9.000	-999.	38.	10.9	0.02	1.06	1.00	0.91	174.	10.0	279.2	2.0
18	01	01	1	03	-3.4	0.076	-9.000	-9.000	-999.	50.	11.8	0.03	1.06	1.00	1.20	265.	10.0	279.2	2.0
18	01	01	1	04	-5.1	0.095	-9.000	-9.000	-999.	71.	15.2	0.06	1.06	1.00	1.35	316.	10.0	278.1	2.0
18	01	01	1	05	-8.8	0.123	-9.000	-9.000	-999.	104.	19.1	0.04	1.06	1.00	1.87	96.	10.0	277.0	2.0
18	01	01	1	06	-2.6	0.067	-9.000	-9.000	-999.	43.	10.7	0.02	1.06	1.00	1.08	177.	10.0	277.5	2.0
18	01	01	1	07	-3.7	0.078	-9.000	-9.000	-999.	52.	11.5	0.02	1.06	1.00	1.33	181.	10.0	277.5	2.0
18	01	01	1	08	-15.2	0.167	-9.000	-9.000	-999.	164.	30.7	0.06	1.06	0.65	2.32	76.	10.0	276.4	2.0
18	01	01	1	09	-3.5	0.149	-9.000	-9.000	-999.	139.	86.8	0.04	1.06	0.36	2.15	109.	10.0	278.1	2.0
18	01	01	1	10	56.2	0.204	0.651	0.006	177.	221.	-13.6	0.04	1.06	0.26	2.37	134.	10.0	281.4	2.0
18	01	01	1	11	92.0	0.233	1.067	0.016	477.	270.	-12.4	0.04	1.06	0.22	2.62	105.	10.0	283.1	2.0
18	01	01	1	12	116.8	0.202	1.234	0.018	581.	219.	-6.4	0.04	1.06	0.21	2.11	102.	10.0	285.9	2.0
18	01	01	1	13	112.5	0.144	1.280	0.019	673.	132.	-2.4	0.02	1.06	0.21	1.55	183.	10.0	287.5	2.0
18	01	01	1	14	84.0	0.122	1.190	0.019	723.	103.	-2.0	0.02	1.06	0.22	1.28	200.	10.0	289.2	2.0
18	01	01	1	15	57.9	0.161	1.059	0.019	738.	155.	-6.5	0.03	1.06	0.26	1.81	262.	10.0	290.4	2.0
18	01	01	1	16	16.8	0.124	0.702	0.019	742.	105.	-10.3	0.03	1.06	0.35	1.47	259.	10.0	289.9	2.0
18	01	01	1	17	-2.5	0.068	-9.000	-9.000	-999.	44.	11.3	0.02	1.06	0.62	1.14	297.	10.0	287.5	2.0
18	01	01	1	18	-7.4	0.111	-9.000	-9.000	-999.	89.	16.9	0.03	1.06	1.00	1.84	239.	10.0	286.4	2.0
18	01	01	1	19	-4.0	0.085	-9.000	-9.000	-999.	60.	13.8	0.06	1.06	1.00	1.21	83.	10.0	284.9	2.0
18	01	01	1	20	-10.4	0.137	-9.000	-9.000	-999.	122.	22.3	0.06	1.06	1.00	1.93	76.	10.0	283.8	2.0
18	01	01	1	21	-4.7	0.090	-9.000	-9.000	-999.	65.	14.0	0.04	1.06	1.00	1.38	109.	10.0	283.1	2.0
18	01	01	1	22	-4.1	0.084	-9.000	-9.000	-999.	58.	13.0	0.04	1.06	1.00	1.30	127.	10.0	281.4	2.0
18	01	01	1	23	-11.7	0.145	-9.000	-9.000	-999.	133.	23.6	0.06	1.06	1.00	2.04	70.	10.0	280.9	2.0
18	01	01	1	24	-3.4	0.079	-9.000	-9.000	-999.	54.	13.0	0.06	1.06	1.00	1.09	80.	10.0	281.4	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
18	01	01	01	10.0	1	347.	1.20	281.0	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF HRA IN MICROGRAMS/M**3 **

NETWORK

GROUP ID AVERAGE CONC RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID

- -

SLINE1 1ST HIGHEST VALUE IS 16.95866 AT (257159.50, 4093836.73, 99.65, 100.81, 0.00) DC
2ND HIGHEST VALUE IS 16.68317 AT (257211.72, 4093832.56, 99.54, 130.22, 0.00) DC
3RD HIGHEST VALUE IS 16.67892 AT (257504.83, 4095489.52, 101.58, 120.56, 0.00) DC
4TH HIGHEST VALUE IS 16.58100 AT (257762.12, 4095741.31, 104.01, 104.01, 0.00) DC
5TH HIGHEST VALUE IS 16.57903 AT (258120.74, 4096231.87, 104.14, 104.14, 0.00) DC
6TH HIGHEST VALUE IS 16.57663 AT (257135.09, 4094170.63, 98.58, 131.74, 0.00) DC
7TH HIGHEST VALUE IS 16.50083 AT (257563.01, 4095546.84, 102.00, 115.51, 0.00) DC
8TH HIGHEST VALUE IS 16.44726 AT (257703.74, 4095683.94, 103.36, 103.36, 0.00) DC
9TH HIGHEST VALUE IS 16.38933 AT (257126.43, 4094702.00, 99.61, 131.63, 0.00) DC
10TH HIGHEST VALUE IS 16.38252 AT (257852.70, 4095829.88, 105.56, 113.03, 0.00) DC

SLINE2 1ST HIGHEST VALUE IS 22.75765 AT (257069.33, 4092737.83, 97.55, 102.78, 0.00) DC
2ND HIGHEST VALUE IS 22.74352 AT (256875.57, 4091559.81, 95.81, 129.19, 0.00) DC
3RD HIGHEST VALUE IS 22.20964 AT (257029.98, 4092692.95, 97.98, 102.37, 0.00) DC
4TH HIGHEST VALUE IS 22.17380 AT (257143.96, 4092820.34, 98.50, 103.54, 0.00) DC
5TH HIGHEST VALUE IS 22.17184 AT (256858.73, 4090868.86, 95.28, 128.17, 0.00) DC
6TH HIGHEST VALUE IS 21.96791 AT (256828.30, 4091829.21, 96.30, 96.30, 0.00) DC
7TH HIGHEST VALUE IS 21.90032 AT (257264.90, 4093067.16, 99.90, 108.60, 0.00) DC
8TH HIGHEST VALUE IS 21.88847 AT (256992.69, 4092645.99, 98.30, 99.25, 0.00) DC
9TH HIGHEST VALUE IS 21.88408 AT (256892.57, 4092220.66, 96.01, 96.01, 0.00) DC
10TH HIGHEST VALUE IS 21.72787 AT (257199.74, 4092904.49, 99.18, 104.02, 0.00) DC

SLINE3 1ST HIGHEST VALUE IS 61.28193 AT (256552.35, 4089816.92, 96.49, 124.74, 0.00) DC
2ND HIGHEST VALUE IS 60.32665 AT (256613.93, 4090169.48, 98.91, 125.40, 0.00) DC
3RD HIGHEST VALUE IS 59.82973 AT (256558.24, 4089938.14, 97.06, 125.36, 0.00) DC
4TH HIGHEST VALUE IS 59.59863 AT (256567.42, 4090027.91, 98.43, 125.40, 0.00) DC
5TH HIGHEST VALUE IS 59.59399 AT (256651.83, 4090264.59, 97.66, 125.40, 0.00) DC
6TH HIGHEST VALUE IS 59.58237 AT (256602.05, 4090136.03, 99.53, 125.40, 0.00) DC
7TH HIGHEST VALUE IS 59.46550 AT (256550.37, 4089762.54, 96.69, 124.74, 0.00) DC
8TH HIGHEST VALUE IS 59.46098 AT (256682.30, 4090338.16, 97.41, 125.40, 0.00) DC
9TH HIGHEST VALUE IS 59.44789 AT (256577.90, 4090069.85, 99.01, 125.40, 0.00) DC
10TH HIGHEST VALUE IS 59.42760 AT (256559.55, 4089988.60, 97.21, 125.36, 0.00) DC

SLINE4 1ST HIGHEST VALUE IS 26.08382 AT (255463.97, 4088444.28, 96.77, 111.67, 0.00) DC
2ND HIGHEST VALUE IS 25.73896 AT (255353.43, 4088404.33, 99.93, 111.81, 0.00) DC
3RD HIGHEST VALUE IS 25.51897 AT (255611.79, 4088496.21, 95.68, 112.99, 0.00) DC
4TH HIGHEST VALUE IS 25.34813 AT (255723.66, 4088537.50, 94.25, 115.58, 0.00) DC
5TH HIGHEST VALUE IS 24.69985 AT (254407.74, 4087698.04, 111.61, 111.61, 0.00) DC
6TH HIGHEST VALUE IS 24.64346 AT (254539.57, 4087769.24, 111.87, 111.87, 0.00) DC
7TH HIGHEST VALUE IS 24.62337 AT (255261.55, 4088369.71, 103.19, 112.05, 0.00) DC
8TH HIGHEST VALUE IS 24.55826 AT (254460.67, 4087725.94, 111.74, 111.74, 0.00) DC
9TH HIGHEST VALUE IS 24.47686 AT (254500.12, 4087747.10, 111.81, 111.81, 0.00) DC
10TH HIGHEST VALUE IS 24.35303 AT (254688.72, 4087851.02, 112.32, 112.32, 0.00) DC

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF HRA IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	NETWORK RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE GRID-ID
SLINE5	1ST HIGHEST VALUE IS	83.40850 AT (253995.14, 4087469.99, 111.40, 111.40, 0.00)	DC
	2ND HIGHEST VALUE IS	83.37123 AT (253916.38, 4087411.28, 111.18, 111.18, 0.00)	DC
	3RD HIGHEST VALUE IS	82.67336 AT (253954.58, 4087441.38, 111.26, 111.26, 0.00)	DC
	4TH HIGHEST VALUE IS	81.70420 AT (253880.91, 4087375.82, 111.04, 111.04, 0.00)	DC
	5TH HIGHEST VALUE IS	81.13577 AT (253844.75, 4087336.18, 110.90, 110.90, 0.00)	DC
	6TH HIGHEST VALUE IS	79.52842 AT (253811.37, 4087284.72, 110.87, 110.87, 0.00)	DC
	7TH HIGHEST VALUE IS	79.17300 AT (254037.83, 4087494.33, 111.43, 111.43, 0.00)	DC
	8TH HIGHEST VALUE IS	78.92957 AT (253784.94, 4087239.53, 110.89, 110.89, 0.00)	DC
	9TH HIGHEST VALUE IS	77.88532 AT (253760.60, 4087195.71, 111.00, 111.00, 0.00)	DC
	10TH HIGHEST VALUE IS	77.12956 AT (253681.33, 4087058.03, 110.95, 110.95, 0.00)	DC
SLINE6	1ST HIGHEST VALUE IS	161.07805 AT (253334.78, 4086677.17, 109.13, 109.13, 0.00)	DC
	2ND HIGHEST VALUE IS	159.29941 AT (253301.34, 4086664.63, 108.85, 108.85, 0.00)	DC
	3RD HIGHEST VALUE IS	157.33519 AT (253389.13, 4086701.65, 109.63, 109.63, 0.00)	DC
	4TH HIGHEST VALUE IS	155.98761 AT (253362.25, 4086686.73, 109.56, 109.56, 0.00)	DC
	5TH HIGHEST VALUE IS	155.06018 AT (253413.01, 4086717.18, 109.68, 109.68, 0.00)	DC
	6TH HIGHEST VALUE IS	150.83533 AT (253442.28, 4086736.28, 109.85, 109.85, 0.00)	DC
	7TH HIGHEST VALUE IS	146.66677 AT (253472.13, 4086756.59, 110.08, 110.08, 0.00)	DC
	8TH HIGHEST VALUE IS	143.85734 AT (253501.39, 4086783.46, 110.28, 110.28, 0.00)	DC
	9TH HIGHEST VALUE IS	139.32092 AT (253521.70, 4086804.96, 110.34, 110.34, 0.00)	DC
	10TH HIGHEST VALUE IS	139.10433 AT (253356.35, 4086742.64, 109.47, 109.47, 0.00)	DC
SLINE7	1ST HIGHEST VALUE IS	35.74234 AT (256769.64, 4089064.77, 119.31, 119.68, 0.00)	DC
	2ND HIGHEST VALUE IS	35.19367 AT (256811.68, 4089016.79, 121.16, 122.49, 0.00)	DC
	3RD HIGHEST VALUE IS	34.24341 AT (256845.11, 4088978.52, 120.20, 120.20, 0.00)	DC
	4TH HIGHEST VALUE IS	33.05628 AT (256739.98, 4089097.11, 116.81, 122.17, 0.00)	DC
	5TH HIGHEST VALUE IS	32.24854 AT (256877.99, 4088933.24, 120.53, 120.53, 0.00)	DC
	6TH HIGHEST VALUE IS	31.33152 AT (256910.47, 4088888.38, 121.03, 121.03, 0.00)	DC
	7TH HIGHEST VALUE IS	30.60561 AT (256960.28, 4088849.76, 119.62, 119.62, 0.00)	DC
	8TH HIGHEST VALUE IS	30.24566 AT (256747.77, 4087409.09, 118.44, 118.44, 0.00)	DC
	9TH HIGHEST VALUE IS	29.82193 AT (256725.43, 4087467.22, 118.08, 118.08, 0.00)	DC
	10TH HIGHEST VALUE IS	29.73259 AT (256973.29, 4088809.37, 119.55, 119.55, 0.00)	DC
VOL1	1ST HIGHEST VALUE IS	582.33766 AT (254154.67, 4087563.32, 111.30, 111.30, 0.00)	DC
	2ND HIGHEST VALUE IS	457.13930 AT (254161.27, 4087549.85, 111.10, 111.10, 0.00)	DC
	3RD HIGHEST VALUE IS	349.99065 AT (254146.90, 4087540.22, 111.14, 111.14, 0.00)	DC
	4TH HIGHEST VALUE IS	329.00460 AT (254167.88, 4087536.38, 110.90, 110.90, 0.00)	DC
	5TH HIGHEST VALUE IS	262.03349 AT (254177.63, 4087557.87, 111.27, 111.27, 0.00)	DC
	6TH HIGHEST VALUE IS	254.19186 AT (254184.23, 4087544.40, 111.14, 111.14, 0.00)	DC
	7TH HIGHEST VALUE IS	246.58000 AT (254155.16, 4087527.70, 111.03, 111.03, 0.00)	DC
	8TH HIGHEST VALUE IS	210.93626 AT (254095.81, 4087602.86, 110.27, 110.27, 0.00)	DC
	9TH HIGHEST VALUE IS	188.21544 AT (254074.82, 4087591.20, 110.52, 110.52, 0.00)	DC
	10TH HIGHEST VALUE IS	181.95941 AT (254197.44, 4087517.47, 111.07, 111.07, 0.00)	DC

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF HRA IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE	NETWORK GRID-ID
VOL2	1ST HIGHEST VALUE IS	442.43699 AT (253597.19, 4086909.92, 110.43, 110.43, 0.00)	DC
	2ND HIGHEST VALUE IS	380.41442 AT (253554.40, 4086939.39, 110.00, 110.00, 0.00)	DC
	3RD HIGHEST VALUE IS	357.74264 AT (253610.08, 4086902.24, 110.52, 110.52, 0.00)	DC
	4TH HIGHEST VALUE IS	351.41557 AT (253619.81, 4086918.58, 110.48, 110.48, 0.00)	DC
	5TH HIGHEST VALUE IS	279.92363 AT (253622.96, 4086894.57, 110.49, 110.49, 0.00)	DC
	6TH HIGHEST VALUE IS	254.34379 AT (253632.70, 4086910.91, 110.44, 110.44, 0.00)	DC
	7TH HIGHEST VALUE IS	241.06139 AT (253541.56, 4086947.15, 110.03, 110.03, 0.00)	DC
	8TH HIGHEST VALUE IS	186.58387 AT (253529.05, 4086926.44, 110.04, 110.04, 0.00)	DC
	9TH HIGHEST VALUE IS	178.20304 AT (253614.53, 4086878.94, 110.53, 110.53, 0.00)	DC
	10TH HIGHEST VALUE IS	175.34046 AT (253601.34, 4086886.09, 110.70, 110.70, 0.00)	DC
VOL3	1ST HIGHEST VALUE IS	277.84613 AT (256503.76, 4089597.82, 97.11, 124.74, 0.00)	DC
	2ND HIGHEST VALUE IS	257.45805 AT (256510.28, 4089593.81, 97.27, 124.74, 0.00)	DC
	3RD HIGHEST VALUE IS	212.70646 AT (256540.13, 4089611.07, 98.16, 124.74, 0.00)	DC
	4TH HIGHEST VALUE IS	190.96921 AT (256524.34, 4089580.25, 97.51, 124.74, 0.00)	DC
	5TH HIGHEST VALUE IS	185.08326 AT (256550.15, 4089591.02, 99.09, 124.74, 0.00)	DC
	6TH HIGHEST VALUE IS	165.50601 AT (256446.33, 4089644.00, 93.27, 124.74, 0.00)	DC
	7TH HIGHEST VALUE IS	163.68313 AT (256526.98, 4089573.65, 97.42, 124.74, 0.00)	DC
	8TH HIGHEST VALUE IS	162.84966 AT (256555.84, 4089582.17, 99.73, 124.74, 0.00)	DC
	9TH HIGHEST VALUE IS	158.83522 AT (256512.85, 4089578.71, 96.73, 124.74, 0.00)	DC
	10TH HIGHEST VALUE IS	157.30756 AT (256467.18, 4089659.60, 93.63, 124.74, 0.00)	DC
VOL4	1ST HIGHEST VALUE IS	654.54281 AT (256720.86, 4086817.49, 120.18, 120.18, 0.00)	DC
	2ND HIGHEST VALUE IS	461.99419 AT (256707.06, 4086837.28, 120.07, 120.07, 0.00)	DC
	3RD HIGHEST VALUE IS	454.66326 AT (256773.38, 4086806.45, 120.04, 120.04, 0.00)	DC
	4TH HIGHEST VALUE IS	373.43596 AT (256773.68, 4086789.01, 119.95, 119.95, 0.00)	DC
	5TH HIGHEST VALUE IS	373.42852 AT (256706.24, 4086814.14, 120.02, 120.02, 0.00)	DC
	6TH HIGHEST VALUE IS	360.23581 AT (256758.68, 4086788.76, 120.06, 120.06, 0.00)	DC
	7TH HIGHEST VALUE IS	295.32766 AT (256692.09, 4086838.22, 119.91, 119.91, 0.00)	DC
	8TH HIGHEST VALUE IS	294.52703 AT (256788.68, 4086789.26, 119.93, 119.93, 0.00)	DC
	9TH HIGHEST VALUE IS	292.59200 AT (256773.09, 4086823.88, 120.27, 120.27, 0.00)	DC
	10TH HIGHEST VALUE IS	277.99316 AT (256788.38, 4086806.70, 120.04, 120.04, 0.00)	DC
VOL5	1ST HIGHEST VALUE IS	375.63391 AT (256813.47, 4090613.82, 97.52, 128.33, 0.00)	DC
	2ND HIGHEST VALUE IS	269.07219 AT (256736.96, 4090650.46, 95.26, 128.00, 0.00)	DC
	3RD HIGHEST VALUE IS	225.04803 AT (256827.24, 4090607.85, 102.10, 128.17, 0.00)	DC
	4TH HIGHEST VALUE IS	215.65726 AT (256745.99, 4090670.38, 95.09, 128.17, 0.00)	DC
	5TH HIGHEST VALUE IS	208.65370 AT (256823.13, 4090636.11, 98.53, 128.33, 0.00)	DC
	6TH HIGHEST VALUE IS	203.28469 AT (256727.94, 4090630.54, 95.30, 127.98, 0.00)	DC
	7TH HIGHEST VALUE IS	198.72923 AT (256803.81, 4090591.53, 97.57, 128.33, 0.00)	DC

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF HRA IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE	NETWORK GRID-ID
VOL6	1ST HIGHEST VALUE IS	268.71016 AT (257287.25, 4093511.29, 98.11, 129.21, 0.00) DC	
	2ND HIGHEST VALUE IS	232.56731 AT (257208.84, 4093526.91, 96.20, 99.85, 0.00) DC	
	3RD HIGHEST VALUE IS	211.04979 AT (257205.23, 4093547.72, 97.85, 99.90, 0.00) DC	
	4TH HIGHEST VALUE IS	186.26628 AT (257303.55, 4093490.44, 97.88, 129.27, 0.00) DC	
	5TH HIGHEST VALUE IS	173.70227 AT (257301.95, 4093514.26, 97.57, 132.73, 0.00) DC	
	6TH HIGHEST VALUE IS	163.30916 AT (257194.06, 4093524.34, 96.02, 99.85, 0.00) DC	
	7TH HIGHEST VALUE IS	152.78775 AT (257190.45, 4093545.16, 95.68, 99.90, 0.00) DC	
	8TH HIGHEST VALUE IS	147.70494 AT (257212.45, 4093506.09, 96.08, 96.08, 0.00) DC	
	9TH HIGHEST VALUE IS	145.33805 AT (257304.88, 4093468.67, 97.93, 129.27, 0.00) DC	
	10TH HIGHEST VALUE IS	144.99128 AT (257318.52, 4093491.35, 97.78, 133.38, 0.00) DC	
VOL7	1ST HIGHEST VALUE IS	540.63439 AT (258705.79, 4097225.67, 104.13, 206.53, 0.00) DC	
	2ND HIGHEST VALUE IS	390.52753 AT (258720.01, 4097220.89, 104.85, 206.53, 0.00) DC	
	3RD HIGHEST VALUE IS	364.65466 AT (258668.52, 4097262.06, 103.01, 206.53, 0.00) DC	
	4TH HIGHEST VALUE IS	275.46204 AT (258734.23, 4097216.11, 105.18, 206.53, 0.00) DC	
	5TH HIGHEST VALUE IS	246.99553 AT (258647.89, 4097252.96, 101.80, 206.53, 0.00) DC	
	6TH HIGHEST VALUE IS	225.17798 AT (258654.87, 4097268.28, 102.40, 206.53, 0.00) DC	
	7TH HIGHEST VALUE IS	210.68529 AT (258727.27, 4097242.50, 105.05, 206.53, 0.00) DC	
	8TH HIGHEST VALUE IS	198.68106 AT (258640.92, 4097237.64, 101.23, 206.53, 0.00) DC	
	9TH HIGHEST VALUE IS	198.17044 AT (258724.72, 4097192.12, 105.45, 206.53, 0.00) DC	
	10TH HIGHEST VALUE IS	195.77330 AT (258710.78, 4097197.67, 105.17, 206.53, 0.00) DC	
ALL	1ST HIGHEST VALUE IS	667.97558 AT (256720.86, 4086817.49, 120.18, 120.18, 0.00) DC	
	2ND HIGHEST VALUE IS	612.08962 AT (254154.67, 4087563.32, 111.30, 111.30, 0.00) DC	
	3RD HIGHEST VALUE IS	546.23541 AT (253597.19, 4086909.92, 110.43, 110.43, 0.00) DC	
	4TH HIGHEST VALUE IS	544.19889 AT (258705.79, 4097225.67, 104.13, 206.53, 0.00) DC	
	5TH HIGHEST VALUE IS	486.88815 AT (254161.27, 4087549.85, 111.10, 111.10, 0.00) DC	
	6TH HIGHEST VALUE IS	477.61105 AT (256707.06, 4086837.28, 120.07, 120.07, 0.00) DC	
	7TH HIGHEST VALUE IS	472.79876 AT (253554.40, 4086939.39, 110.00, 110.00, 0.00) DC	
	8TH HIGHEST VALUE IS	469.78270 AT (256773.38, 4086806.45, 120.04, 120.04, 0.00) DC	
	9TH HIGHEST VALUE IS	445.01910 AT (253610.08, 4086902.24, 110.52, 110.52, 0.00) DC	
	10TH HIGHEST VALUE IS	427.16681 AT (253619.81, 4086918.58, 110.48, 110.48, 0.00) DC	

*** RECEPTOR TYPES: GC = GRIDCART

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF HRA IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	NETWORK RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
SLINE1	1ST HIGH VALUE IS	262.76786	ON 22012101: AT (258629.07, 4097037.62, 103.98, 116.89, 0.00)	DC	
SLINE2	1ST HIGH VALUE IS	389.96554	ON 21120308: AT (256881.79, 4092560.71, 97.41, 97.41, 0.00)	DC	
SLINE3	1ST HIGH VALUE IS	756.42346	ON 19010218: AT (256768.68, 4090684.11, 95.11, 128.17, 0.00)	DC	
SLINE4	1ST HIGH VALUE IS	318.52698	ON 19022108: AT (256257.68, 4089027.56, 94.95, 121.74, 0.00)	DC	
SLINE5	1ST HIGH VALUE IS	1037.23821	ON 22121606: AT (253990.59, 4087523.74, 110.68, 110.68, 0.00)	DC	
SLINE6	1ST HIGH VALUE IS	1852.61494	ON 19022108: AT (253579.11, 4086876.54, 110.64, 110.64, 0.00)	DC	
SLINE7	1ST HIGH VALUE IS	393.12031	ON 18100107: AT (256553.76, 4087729.88, 117.24, 122.37, 0.00)	DC	
VOL1	1ST HIGH VALUE IS	4952.30013	ON 22121323: AT (254154.67, 4087563.32, 111.30, 111.30, 0.00)	DC	
VOL2	1ST HIGH VALUE IS	4235.23117	ON 21021908: AT (253554.40, 4086939.39, 110.00, 110.00, 0.00)	DC	
VOL3	1ST HIGH VALUE IS	2527.58740	ON 22010205: AT (256531.77, 4089636.14, 97.39, 124.74, 0.00)	DC	
VOL4	1ST HIGH VALUE IS	7215.98650	ON 20120708: AT (256720.86, 4086817.49, 120.18, 120.18, 0.00)	DC	
VOL5	1ST HIGH VALUE IS	3686.88890	ON 19012308: AT (256768.68, 4090684.11, 95.11, 128.17, 0.00)	DC	

VOL6 HIGH 1ST HIGH VALUE IS 2567.31284 ON 22010517: AT (257205.23, 4093547.72, 97.85, 99.90, 0.00) DC

VOL7 HIGH 1ST HIGH VALUE IS 4259.02930 ON 18121809: AT (258668.52, 4097262.06, 103.01, 206.53, 0.00) DC

ALL HIGH 1ST HIGH VALUE IS 7298.72702 ON 20120708: AT (256720.86, 4086817.49, 120.18, 120.18, 0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
*** AERMOD - VERSION 24142 *** ***
C:\z_AERMOD\CEMEX\RealisticRoadSimulation\RealisticRoadSimulation.is *** 01/03/26
*** AERMET - VERSION 21112 *** *** *** 14:17:07
PAGE 9
*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 4 Warning Message(s)
A Total of 1361 Informational Message(s)

A Total of 43824 Hours Were Processed

A Total of 750 Calm Hours Identified

A Total of 611 Missing Hours Identified (1.39 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
ME W186 5891 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used 0.50
ME W187 5891 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
MX W420 7582 METQA: Wind Speed Out-of-Range. KURDAT = 18111222
MX W420 7588 METQA: Wind Speed Out-of-Range. KURDAT = 18111304

REC	GRP	NETID	X	Y	RISK_SUM	SCENARIO	INH_RISK	SOIL_RISK	DERMAL_RISK	MMILK_RISK	WATER_RISK
4568	ALL		256875.6	4091560	3.19E-06	70YrCancerDerived_Inh_FAH16to70	3.19E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4571	ALL		256858.7	4090869	3.12E-06	70YrCancerDerived_Inh_FAH16to70	3.12E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4556	ALL		257069.3	4092738	3.10E-06	70YrCancerDerived_Inh_FAH16to70	3.10E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4547	ALL		257287.2	4093281	3.10E-06	70YrCancerDerived_Inh_FAH16to70	3.10E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4546	ALL		257289.2	4093372	3.08E-06	70YrCancerDerived_Inh_FAH16to70	3.08E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4567	ALL		256892.6	4092221	3.07E-06	70YrCancerDerived_Inh_FAH16to70	3.07E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4551	ALL		257264.9	4093067	3.01E-06	70YrCancerDerived_Inh_FAH16to70	3.01E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4572	ALL		256854.9	4090809	3.01E-06	70YrCancerDerived_Inh_FAH16to70	3.01E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4558	ALL		256992.7	4092646	3.00E-06	70YrCancerDerived_Inh_FAH16to70	3.00E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4548	ALL		257285.8	4093204	3.00E-06	70YrCancerDerived_Inh_FAH16to70	3.00E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4910	ALL		256828.3	4091829	3.00E-06	70YrCancerDerived_Inh_FAH16to70	3.00E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4557	ALL		257030	4092693	3.00E-06	70YrCancerDerived_Inh_FAH16to70	3.00E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4564	ALL		256896	4092404	2.99E-06	70YrCancerDerived_Inh_FAH16to70	2.99E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4912	ALL		256842.6	4092303	2.99E-06	70YrCancerDerived_Inh_FAH16to70	2.99E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4569	ALL		256872.7	4091321	2.99E-06	70YrCancerDerived_Inh_FAH16to70	2.99E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4566	ALL		256894.6	4092279	2.99E-06	70YrCancerDerived_Inh_FAH16to70	2.99E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4565	ALL		256896	4092334	2.96E-06	70YrCancerDerived_Inh_FAH16to70	2.96E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4908	ALL		256815.8	4091264	2.96E-06	70YrCancerDerived_Inh_FAH16to70	2.96E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4921	ALL		257232.8	4093221	2.94E-06	70YrCancerDerived_Inh_FAH16to70	2.94E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4911	ALL		256839	4092183	2.93E-06	70YrCancerDerived_Inh_FAH16to70	2.93E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4555	ALL		257144	4092820	2.91E-06	70YrCancerDerived_Inh_FAH16to70	2.91E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4553	ALL		257199.7	4092904	2.90E-06	70YrCancerDerived_Inh_FAH16to70	2.90E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4550	ALL		257273.6	4093096	2.90E-06	70YrCancerDerived_Inh_FAH16to70	2.90E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4909	ALL		256821.2	4091532	2.90E-06	70YrCancerDerived_Inh_FAH16to70	2.90E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4570	ALL		256861.7	4090934	2.89E-06	70YrCancerDerived_Inh_FAH16to70	2.89E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4574	ALL		256837.6	4090718	2.89E-06	70YrCancerDerived_Inh_FAH16to70	2.89E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4549	ALL		257282.6	4093148	2.87E-06	70YrCancerDerived_Inh_FAH16to70	2.87E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4907	ALL		256811.1	4091100	2.84E-06	70YrCancerDerived_Inh_FAH16to70	2.84E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4573	ALL		256851.2	4090774	2.83E-06	70YrCancerDerived_Inh_FAH16to70	2.83E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4561	ALL		256927.1	4092515	2.83E-06	70YrCancerDerived_Inh_FAH16to70	2.83E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00

REC	FISH_RISK	CROP_RISK	BEEF_RISK	DAIRY_RISK	PIG_RISK	CHICKEN_RISK	EGG_RISK
4568	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4571	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4556	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4547	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4546	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4567	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4551	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4572	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4558	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4548	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4910	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4557	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4564	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4912	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4569	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4566	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4565	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4908	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4921	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4911	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4555	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4553	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4550	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4909	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4570	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4574	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4549	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4907	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4573	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4561	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

REC	GRP	NETID	X	Y	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE
4568	ALL		256875.6	4091560	NonCancerChronicDerived_Inh	1.98E-04	2.18E-03	0.00E+00	3.77E-04	9.27E-09	2.97E-04	8.88E-03	1.98E-04	0.00E+00
4571	ALL		256858.7	4090869	NonCancerChronicDerived_Inh	1.93E-04	2.13E-03	0.00E+00	3.68E-04	9.05E-09	2.90E-04	8.67E-03	1.93E-04	0.00E+00
4556	ALL		257069.3	4092738	NonCancerChronicDerived_Inh	1.92E-04	2.12E-03	0.00E+00	3.66E-04	9.01E-09	2.88E-04	8.63E-03	1.92E-04	0.00E+00
4547	ALL		257287.2	4093281	NonCancerChronicDerived_Inh	1.92E-04	2.12E-03	0.00E+00	3.66E-04	9.00E-09	2.88E-04	8.62E-03	1.92E-04	0.00E+00
4546	ALL		257289.2	4093372	NonCancerChronicDerived_Inh	1.91E-04	2.10E-03	0.00E+00	3.63E-04	8.93E-09	2.86E-04	8.56E-03	1.91E-04	0.00E+00
4567	ALL		256892.6	4092221	NonCancerChronicDerived_Inh	1.91E-04	2.10E-03	0.00E+00	3.63E-04	8.93E-09	2.86E-04	8.56E-03	1.91E-04	0.00E+00
4551	ALL		257264.9	4093067	NonCancerChronicDerived_Inh	1.87E-04	2.06E-03	0.00E+00	3.56E-04	8.74E-09	2.80E-04	8.38E-03	1.87E-04	0.00E+00
4558	ALL		256992.7	4092646	NonCancerChronicDerived_Inh	1.86E-04	2.05E-03	0.00E+00	3.55E-04	8.73E-09	2.79E-04	8.36E-03	1.86E-04	0.00E+00
4557	ALL		257030	4092693	NonCancerChronicDerived_Inh	1.86E-04	2.05E-03	0.00E+00	3.55E-04	8.72E-09	2.79E-04	8.35E-03	1.86E-04	0.00E+00
4910	ALL		256828.3	4091829	NonCancerChronicDerived_Inh	1.86E-04	2.05E-03	0.00E+00	3.55E-04	8.72E-09	2.79E-04	8.35E-03	1.86E-04	0.00E+00
4548	ALL		257285.8	4093204	NonCancerChronicDerived_Inh	1.86E-04	2.05E-03	0.00E+00	3.55E-04	8.72E-09	2.79E-04	8.35E-03	1.86E-04	0.00E+00
4572	ALL		256854.9	4090809	NonCancerChronicDerived_Inh	1.86E-04	2.05E-03	0.00E+00	3.54E-04	8.71E-09	2.79E-04	8.35E-03	1.86E-04	0.00E+00
4564	ALL		256896	4092404	NonCancerChronicDerived_Inh	1.86E-04	2.05E-03	0.00E+00	3.54E-04	8.71E-09	2.79E-04	8.34E-03	1.86E-04	0.00E+00
4912	ALL		256842.6	4092303	NonCancerChronicDerived_Inh	1.86E-04	2.05E-03	0.00E+00	3.54E-04	8.70E-09	2.78E-04	8.33E-03	1.86E-04	0.00E+00
4566	ALL		256894.6	4092279	NonCancerChronicDerived_Inh	1.85E-04	2.05E-03	0.00E+00	3.54E-04	8.69E-09	2.78E-04	8.33E-03	1.85E-04	0.00E+00
4569	ALL		256872.7	4091321	NonCancerChronicDerived_Inh	1.85E-04	2.04E-03	0.00E+00	3.53E-04	8.69E-09	2.78E-04	8.32E-03	1.85E-04	0.00E+00
4565	ALL		256896	4092334	NonCancerChronicDerived_Inh	1.84E-04	2.02E-03	0.00E+00	3.50E-04	8.60E-09	2.75E-04	8.24E-03	1.84E-04	0.00E+00
4908	ALL		256815.8	4091264	NonCancerChronicDerived_Inh	1.83E-04	2.02E-03	0.00E+00	3.49E-04	8.59E-09	2.75E-04	8.23E-03	1.83E-04	0.00E+00
4921	ALL		257232.8	4093221	NonCancerChronicDerived_Inh	1.82E-04	2.01E-03	0.00E+00	3.47E-04	8.54E-09	2.73E-04	8.18E-03	1.82E-04	0.00E+00
4911	ALL		256839	4092183	NonCancerChronicDerived_Inh	1.82E-04	2.00E-03	0.00E+00	3.46E-04	8.52E-09	2.73E-04	8.16E-03	1.82E-04	0.00E+00
4555	ALL		257144	4092820	NonCancerChronicDerived_Inh	1.81E-04	1.99E-03	0.00E+00	3.44E-04	8.46E-09	2.71E-04	8.11E-03	1.81E-04	0.00E+00
4553	ALL		257199.7	4092904	NonCancerChronicDerived_Inh	1.80E-04	1.98E-03	0.00E+00	3.43E-04	8.43E-09	2.70E-04	8.07E-03	1.80E-04	0.00E+00
4550	ALL		257273.6	4093096	NonCancerChronicDerived_Inh	1.80E-04	1.98E-03	0.00E+00	3.43E-04	8.43E-09	2.70E-04	8.07E-03	1.80E-04	0.00E+00
4909	ALL		256821.2	4091532	NonCancerChronicDerived_Inh	1.80E-04	1.98E-03	0.00E+00	3.42E-04	8.42E-09	2.69E-04	8.06E-03	1.80E-04	0.00E+00
4570	ALL		256861.7	4090934	NonCancerChronicDerived_Inh	1.79E-04	1.98E-03	0.00E+00	3.42E-04	8.40E-09	2.69E-04	8.05E-03	1.79E-04	0.00E+00
4574	ALL		256837.6	4090718	NonCancerChronicDerived_Inh	1.78E-04	1.97E-03	0.00E+00	3.40E-04	8.35E-09	2.67E-04	8.00E-03	1.78E-04	0.00E+00
4549	ALL		257282.6	4093148	NonCancerChronicDerived_Inh	1.78E-04	1.96E-03	0.00E+00	3.39E-04	8.33E-09	2.66E-04	7.98E-03	1.78E-04	0.00E+00
4907	ALL		256811.1	4091100	NonCancerChronicDerived_Inh	1.76E-04	1.94E-03	0.00E+00	3.35E-04	8.25E-09	2.64E-04	7.90E-03	1.76E-04	0.00E+00
4561	ALL		256927.1	4092515	NonCancerChronicDerived_Inh	1.76E-04	1.94E-03	0.00E+00	3.35E-04	8.23E-09	2.63E-04	7.89E-03	1.76E-04	0.00E+00
4559	ALL		256976.8	4092615	NonCancerChronicDerived_Inh	1.76E-04	1.94E-03	0.00E+00	3.35E-04	8.23E-09	2.63E-04	7.88E-03	1.76E-04	0.00E+00

REC	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL	MAXHI
4568	0.00E+00	0.00E+00	1.07E-03	0.00E+00	0.00E+00	8.88E-03
4571	0.00E+00	0.00E+00	1.05E-03	0.00E+00	0.00E+00	8.67E-03
4556	0.00E+00	0.00E+00	1.04E-03	0.00E+00	0.00E+00	8.63E-03
4547	0.00E+00	0.00E+00	1.04E-03	0.00E+00	0.00E+00	8.62E-03
4546	0.00E+00	0.00E+00	1.03E-03	0.00E+00	0.00E+00	8.56E-03
4567	0.00E+00	0.00E+00	1.03E-03	0.00E+00	0.00E+00	8.56E-03
4551	0.00E+00	0.00E+00	1.01E-03	0.00E+00	0.00E+00	8.38E-03
4558	0.00E+00	0.00E+00	1.01E-03	0.00E+00	0.00E+00	8.36E-03
4557	0.00E+00	0.00E+00	1.01E-03	0.00E+00	0.00E+00	8.35E-03
4910	0.00E+00	0.00E+00	1.01E-03	0.00E+00	0.00E+00	8.35E-03
4548	0.00E+00	0.00E+00	1.01E-03	0.00E+00	0.00E+00	8.35E-03
4572	0.00E+00	0.00E+00	1.01E-03	0.00E+00	0.00E+00	8.35E-03
4564	0.00E+00	0.00E+00	1.01E-03	0.00E+00	0.00E+00	8.34E-03
4912	0.00E+00	0.00E+00	1.01E-03	0.00E+00	0.00E+00	8.33E-03
4566	0.00E+00	0.00E+00	1.01E-03	0.00E+00	0.00E+00	8.33E-03
4569	0.00E+00	0.00E+00	1.01E-03	0.00E+00	0.00E+00	8.32E-03
4565	0.00E+00	0.00E+00	9.96E-04	0.00E+00	0.00E+00	8.24E-03
4908	0.00E+00	0.00E+00	9.94E-04	0.00E+00	0.00E+00	8.23E-03
4921	0.00E+00	0.00E+00	9.89E-04	0.00E+00	0.00E+00	8.18E-03
4911	0.00E+00	0.00E+00	9.86E-04	0.00E+00	0.00E+00	8.16E-03
4555	0.00E+00	0.00E+00	9.79E-04	0.00E+00	0.00E+00	8.11E-03
4553	0.00E+00	0.00E+00	9.75E-04	0.00E+00	0.00E+00	8.07E-03
4550	0.00E+00	0.00E+00	9.75E-04	0.00E+00	0.00E+00	8.07E-03
4909	0.00E+00	0.00E+00	9.74E-04	0.00E+00	0.00E+00	8.06E-03
4570	0.00E+00	0.00E+00	9.72E-04	0.00E+00	0.00E+00	8.05E-03
4574	0.00E+00	0.00E+00	9.66E-04	0.00E+00	0.00E+00	8.00E-03
4549	0.00E+00	0.00E+00	9.64E-04	0.00E+00	0.00E+00	7.98E-03
4907	0.00E+00	0.00E+00	9.54E-04	0.00E+00	0.00E+00	7.90E-03
4561	0.00E+00	0.00E+00	9.53E-04	0.00E+00	0.00E+00	7.89E-03
4559	0.00E+00	0.00E+00	9.52E-04	0.00E+00	0.00E+00	7.88E-03

REC	GRP	NETID	X	Y	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE
4914	ALL		256881.8	4092561	NonCancerAcute	1.34E-03	1.79E-03	6.79E-03	0.00E+00	0.00E+00	1.79E-03	7.86E-04	0.00E+00	7.50E-04
4575	ALL		256819	4090664	NonCancerAcute	1.32E-03	1.76E-03	6.67E-03	0.00E+00	0.00E+00	1.76E-03	7.71E-04	0.00E+00	7.37E-04
4548	ALL		257285.8	4093204	NonCancerAcute	1.23E-03	1.63E-03	6.20E-03	0.00E+00	0.00E+00	1.63E-03	7.18E-04	0.00E+00	6.85E-04
3765	ALL		256889.1	4092609	NonCancerAcute	1.22E-03	1.63E-03	6.17E-03	0.00E+00	0.00E+00	1.63E-03	7.14E-04	0.00E+00	6.82E-04
4574	ALL		256837.6	4090718	NonCancerAcute	1.21E-03	1.61E-03	6.13E-03	0.00E+00	0.00E+00	1.61E-03	7.09E-04	0.00E+00	6.77E-04
3764	ALL		256878.7	4092588	NonCancerAcute	1.20E-03	1.60E-03	6.08E-03	0.00E+00	0.00E+00	1.60E-03	7.04E-04	0.00E+00	6.72E-04
3766	ALL		256899.5	4092630	NonCancerAcute	1.20E-03	1.59E-03	6.05E-03	0.00E+00	0.00E+00	1.59E-03	7.00E-04	0.00E+00	6.69E-04
4544	ALL		257287.3	4093511	NonCancerAcute	1.17E-03	1.55E-03	5.90E-03	0.00E+00	0.00E+00	1.55E-03	6.83E-04	0.00E+00	6.52E-04
4547	ALL		257287.2	4093281	NonCancerAcute	1.16E-03	1.55E-03	5.89E-03	0.00E+00	0.00E+00	1.55E-03	6.81E-04	0.00E+00	6.50E-04
4915	ALL		256933.6	4092666	NonCancerAcute	1.16E-03	1.55E-03	5.88E-03	0.00E+00	0.00E+00	1.55E-03	6.80E-04	0.00E+00	6.50E-04
4546	ALL		257289.2	4093372	NonCancerAcute	1.15E-03	1.53E-03	5.80E-03	0.00E+00	0.00E+00	1.53E-03	6.71E-04	0.00E+00	6.41E-04
3767	ALL		256909.8	4092651	NonCancerAcute	1.14E-03	1.52E-03	5.79E-03	0.00E+00	0.00E+00	1.52E-03	6.70E-04	0.00E+00	6.40E-04
3750	ALL		256867.3	4092565	NonCancerAcute	1.14E-03	1.52E-03	5.78E-03	0.00E+00	0.00E+00	1.52E-03	6.69E-04	0.00E+00	6.39E-04
4549	ALL		257282.6	4093148	NonCancerAcute	1.11E-03	1.48E-03	5.63E-03	0.00E+00	0.00E+00	1.48E-03	6.51E-04	0.00E+00	6.22E-04
3749	ALL		256861	4092541	NonCancerAcute	1.10E-03	1.47E-03	5.59E-03	0.00E+00	0.00E+00	1.47E-03	6.47E-04	0.00E+00	6.18E-04
3779	ALL		256938.8	4092694	NonCancerAcute	1.10E-03	1.47E-03	5.59E-03	0.00E+00	0.00E+00	1.47E-03	6.47E-04	0.00E+00	6.18E-04
3768	ALL		256920.2	4092672	NonCancerAcute	1.10E-03	1.47E-03	5.58E-03	0.00E+00	0.00E+00	1.47E-03	6.45E-04	0.00E+00	6.17E-04
4545	ALL		257292.6	4093424	NonCancerAcute	1.10E-03	1.47E-03	5.57E-03	0.00E+00	0.00E+00	1.47E-03	6.45E-04	0.00E+00	6.16E-04
3771	ALL		256886	4092637	NonCancerAcute	1.10E-03	1.46E-03	5.56E-03	0.00E+00	0.00E+00	1.46E-03	6.43E-04	0.00E+00	6.14E-04
4576	ALL		256780.4	4090575	NonCancerAcute	1.10E-03	1.46E-03	5.55E-03	0.00E+00	0.00E+00	1.46E-03	6.42E-04	0.00E+00	6.13E-04
3772	ALL		256896.4	4092658	NonCancerAcute	1.09E-03	1.45E-03	5.52E-03	0.00E+00	0.00E+00	1.45E-03	6.38E-04	0.00E+00	6.10E-04
621	ALL		257301.5	4093242	NonCancerAcute	1.09E-03	1.45E-03	5.51E-03	0.00E+00	0.00E+00	1.45E-03	6.38E-04	0.00E+00	6.09E-04
620	ALL		257301.8	4093262	NonCancerAcute	1.09E-03	1.45E-03	5.50E-03	0.00E+00	0.00E+00	1.45E-03	6.37E-04	0.00E+00	6.08E-04
611	ALL		257302.2	4093281	NonCancerAcute	1.08E-03	1.44E-03	5.46E-03	0.00E+00	0.00E+00	1.44E-03	6.32E-04	0.00E+00	6.03E-04
4902	ALL		256789.8	4090748	NonCancerAcute	1.08E-03	1.44E-03	5.46E-03	0.00E+00	0.00E+00	1.44E-03	6.31E-04	0.00E+00	6.03E-04
622	ALL		257301.1	4093223	NonCancerAcute	1.08E-03	1.44E-03	5.45E-03	0.00E+00	0.00E+00	1.44E-03	6.31E-04	0.00E+00	6.02E-04
4564	ALL		256896	4092404	NonCancerAcute	1.07E-03	1.43E-03	5.43E-03	0.00E+00	0.00E+00	1.43E-03	6.29E-04	0.00E+00	6.00E-04
995	ALL		256813.5	4090614	NonCancerAcute	1.07E-03	1.42E-03	5.40E-03	0.00E+00	0.00E+00	1.42E-03	6.25E-04	0.00E+00	5.97E-04
3784	ALL		256927.5	4092704	NonCancerAcute	1.07E-03	1.42E-03	5.39E-03	0.00E+00	0.00E+00	1.42E-03	6.24E-04	0.00E+00	5.96E-04
4568	ALL		256875.6	4091560	NonCancerAcute	1.06E-03	1.42E-03	5.39E-03	0.00E+00	0.00E+00	1.42E-03	6.24E-04	0.00E+00	5.96E-04

REC	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL	MAXHI
4914	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.79E-03
4575	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.67E-03
4548	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-03
3765	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.17E-03
4574	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.13E-03
3764	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.08E-03
3766	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.05E-03
4544	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.90E-03
4547	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.89E-03
4915	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.88E-03
4546	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.80E-03
3767	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.79E-03
3750	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.78E-03
4549	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.63E-03
3749	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.59E-03
3779	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.59E-03
3768	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.58E-03
4545	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.57E-03
3771	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.56E-03
4576	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.55E-03
3772	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.52E-03
621	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.51E-03
620	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.50E-03
611	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.46E-03
4902	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.46E-03
622	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.45E-03
4564	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.43E-03
995	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.40E-03
3784	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.39E-03
4568	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.39E-03

REC	GRP	NETID	X	Y	RISK_SUM	SCENARIO	INH_RISK	SOIL_RISK	DERMAL_RISK	MMILK_RISK	WATER_RISK
4568	ALL		256875.6	4091560	3.86E-06	70YrCancerDerived_Inh_FAH16to70	3.86E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4571	ALL		256858.7	4090869	3.79E-06	70YrCancerDerived_Inh_FAH16to70	3.79E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4547	ALL		257287.2	4093281	3.76E-06	70YrCancerDerived_Inh_FAH16to70	3.76E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4556	ALL		257069.3	4092738	3.75E-06	70YrCancerDerived_Inh_FAH16to70	3.75E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4546	ALL		257289.2	4093372	3.73E-06	70YrCancerDerived_Inh_FAH16to70	3.73E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4567	ALL		256892.6	4092221	3.72E-06	70YrCancerDerived_Inh_FAH16to70	3.72E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4572	ALL		256854.9	4090809	3.66E-06	70YrCancerDerived_Inh_FAH16to70	3.66E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4551	ALL		257264.9	4093067	3.65E-06	70YrCancerDerived_Inh_FAH16to70	3.65E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4558	ALL		256992.7	4092646	3.64E-06	70YrCancerDerived_Inh_FAH16to70	3.64E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4548	ALL		257285.8	4093204	3.64E-06	70YrCancerDerived_Inh_FAH16to70	3.64E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4910	ALL		256828.3	4091829	3.64E-06	70YrCancerDerived_Inh_FAH16to70	3.64E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4557	ALL		257030	4092693	3.63E-06	70YrCancerDerived_Inh_FAH16to70	3.63E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4564	ALL		256896	4092404	3.63E-06	70YrCancerDerived_Inh_FAH16to70	3.63E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4569	ALL		256872.7	4091321	3.63E-06	70YrCancerDerived_Inh_FAH16to70	3.63E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4912	ALL		256842.6	4092303	3.62E-06	70YrCancerDerived_Inh_FAH16to70	3.62E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4566	ALL		256894.6	4092279	3.62E-06	70YrCancerDerived_Inh_FAH16to70	3.62E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4908	ALL		256815.8	4091264	3.59E-06	70YrCancerDerived_Inh_FAH16to70	3.59E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4565	ALL		256896	4092334	3.59E-06	70YrCancerDerived_Inh_FAH16to70	3.59E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4921	ALL		257232.8	4093221	3.56E-06	70YrCancerDerived_Inh_FAH16to70	3.56E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4911	ALL		256839	4092183	3.55E-06	70YrCancerDerived_Inh_FAH16to70	3.55E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4574	ALL		256837.6	4090718	3.53E-06	70YrCancerDerived_Inh_FAH16to70	3.53E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4555	ALL		257144	4092820	3.53E-06	70YrCancerDerived_Inh_FAH16to70	3.53E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4570	ALL		256861.7	4090934	3.52E-06	70YrCancerDerived_Inh_FAH16to70	3.52E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4550	ALL		257273.6	4093096	3.51E-06	70YrCancerDerived_Inh_FAH16to70	3.51E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4553	ALL		257199.7	4092904	3.51E-06	70YrCancerDerived_Inh_FAH16to70	3.51E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4909	ALL		256821.2	4091532	3.51E-06	70YrCancerDerived_Inh_FAH16to70	3.51E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4549	ALL		257282.6	4093148	3.47E-06	70YrCancerDerived_Inh_FAH16to70	3.47E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4573	ALL		256851.2	4090774	3.45E-06	70YrCancerDerived_Inh_FAH16to70	3.45E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4907	ALL		256811.1	4091100	3.45E-06	70YrCancerDerived_Inh_FAH16to70	3.45E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4902	ALL		256789.8	4090748	3.44E-06	70YrCancerDerived_Inh_FAH16to70	3.44E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00

REC	FISH_RISK	CROP_RISK	BEEF_RISK	DAIRY_RISK	PIG_RISK	CHICKEN_RISK	EGG_RISK
4568	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4571	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4547	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4556	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4546	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4567	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4572	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4551	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4558	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4548	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4910	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4557	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4564	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4569	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4912	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4566	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4908	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4565	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4921	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4911	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4574	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4555	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4570	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4550	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4553	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4909	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4549	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4573	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4907	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4902	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

REC	GRP	NETID	X	Y	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE
4587	ALL		256552.4	4089817	NonCancerChronicDerived_Inh	2.97E-04	3.27E-03	0.00E+00	5.65E-04	1.39E-08	4.45E-04	1.30E-02	2.97E-04	0.00E+00
4568	ALL		256875.6	4091560	NonCancerChronicDerived_Inh	2.92E-04	3.22E-03	0.00E+00	5.57E-04	1.37E-08	4.38E-04	1.29E-02	2.92E-04	0.00E+00
4571	ALL		256858.7	4090869	NonCancerChronicDerived_Inh	2.88E-04	3.18E-03	0.00E+00	5.49E-04	1.35E-08	4.32E-04	1.28E-02	2.88E-04	0.00E+00
4584	ALL		256559.6	4089989	NonCancerChronicDerived_Inh	2.90E-04	3.20E-03	0.00E+00	5.53E-04	1.36E-08	4.35E-04	1.27E-02	2.90E-04	0.00E+00
4547	ALL		257287.2	4093281	NonCancerChronicDerived_Inh	2.84E-04	3.14E-03	0.00E+00	5.42E-04	1.33E-08	4.27E-04	1.26E-02	2.84E-04	0.00E+00
4586	ALL		256555.6	4089888	NonCancerChronicDerived_Inh	2.88E-04	3.17E-03	0.00E+00	5.48E-04	1.35E-08	4.31E-04	1.26E-02	2.88E-04	0.00E+00
4556	ALL		257069.3	4092738	NonCancerChronicDerived_Inh	2.84E-04	3.13E-03	0.00E+00	5.41E-04	1.33E-08	4.25E-04	1.26E-02	2.84E-04	0.00E+00
4585	ALL		256558.2	4089938	NonCancerChronicDerived_Inh	2.87E-04	3.17E-03	0.00E+00	5.47E-04	1.35E-08	4.31E-04	1.25E-02	2.87E-04	0.00E+00
4588	ALL		256550.4	4089763	NonCancerChronicDerived_Inh	2.87E-04	3.17E-03	0.00E+00	5.47E-04	1.35E-08	4.31E-04	1.25E-02	2.87E-04	0.00E+00
4546	ALL		257289.2	4093372	NonCancerChronicDerived_Inh	2.83E-04	3.12E-03	0.00E+00	5.40E-04	1.33E-08	4.25E-04	1.25E-02	2.83E-04	0.00E+00
4580	ALL		256613.9	4090169	NonCancerChronicDerived_Inh	2.86E-04	3.15E-03	0.00E+00	5.45E-04	1.34E-08	4.29E-04	1.25E-02	2.86E-04	0.00E+00
4567	ALL		256892.6	4092221	NonCancerChronicDerived_Inh	2.81E-04	3.10E-03	0.00E+00	5.36E-04	1.32E-08	4.22E-04	1.25E-02	2.81E-04	0.00E+00
4578	ALL		256682.3	4090338	NonCancerChronicDerived_Inh	2.84E-04	3.13E-03	0.00E+00	5.41E-04	1.33E-08	4.26E-04	1.24E-02	2.84E-04	0.00E+00
4579	ALL		256651.8	4090265	NonCancerChronicDerived_Inh	2.83E-04	3.12E-03	0.00E+00	5.40E-04	1.33E-08	4.25E-04	1.24E-02	2.83E-04	0.00E+00
4576	ALL		256780.4	4090575	NonCancerChronicDerived_Inh	2.82E-04	3.11E-03	0.00E+00	5.38E-04	1.32E-08	4.23E-04	1.23E-02	2.82E-04	0.00E+00
4583	ALL		256567.4	4090028	NonCancerChronicDerived_Inh	2.82E-04	3.11E-03	0.00E+00	5.38E-04	1.32E-08	4.23E-04	1.23E-02	2.82E-04	0.00E+00
4572	ALL		256854.9	4090809	NonCancerChronicDerived_Inh	2.78E-04	3.07E-03	0.00E+00	5.31E-04	1.30E-08	4.17E-04	1.23E-02	2.78E-04	0.00E+00
4589	ALL		256545.8	4089732	NonCancerChronicDerived_Inh	2.82E-04	3.11E-03	0.00E+00	5.37E-04	1.32E-08	4.23E-04	1.23E-02	2.82E-04	0.00E+00
4577	ALL		256727.6	4090443	NonCancerChronicDerived_Inh	2.81E-04	3.09E-03	0.00E+00	5.35E-04	1.32E-08	4.21E-04	1.23E-02	2.81E-04	0.00E+00
4590	ALL		256535.3	4089691	NonCancerChronicDerived_Inh	2.80E-04	3.08E-03	0.00E+00	5.33E-04	1.31E-08	4.19E-04	1.22E-02	2.80E-04	0.00E+00
4551	ALL		257264.9	4093067	NonCancerChronicDerived_Inh	2.76E-04	3.04E-03	0.00E+00	5.25E-04	1.29E-08	4.13E-04	1.22E-02	2.76E-04	0.00E+00
4548	ALL		257285.8	4093204	NonCancerChronicDerived_Inh	2.75E-04	3.04E-03	0.00E+00	5.25E-04	1.29E-08	4.13E-04	1.22E-02	2.75E-04	0.00E+00
4582	ALL		256577.9	4090070	NonCancerChronicDerived_Inh	2.79E-04	3.08E-03	0.00E+00	5.31E-04	1.31E-08	4.18E-04	1.22E-02	2.79E-04	0.00E+00
4558	ALL		256992.7	4092646	NonCancerChronicDerived_Inh	2.75E-04	3.03E-03	0.00E+00	5.24E-04	1.29E-08	4.12E-04	1.22E-02	2.75E-04	0.00E+00
4910	ALL		256828.3	4091829	NonCancerChronicDerived_Inh	2.75E-04	3.03E-03	0.00E+00	5.24E-04	1.29E-08	4.12E-04	1.22E-02	2.75E-04	0.00E+00
4557	ALL		257030	4092693	NonCancerChronicDerived_Inh	2.75E-04	3.03E-03	0.00E+00	5.23E-04	1.29E-08	4.12E-04	1.22E-02	2.75E-04	0.00E+00
4569	ALL		256872.7	4091321	NonCancerChronicDerived_Inh	2.74E-04	3.03E-03	0.00E+00	5.23E-04	1.29E-08	4.12E-04	1.22E-02	2.74E-04	0.00E+00
4564	ALL		256896	4092404	NonCancerChronicDerived_Inh	2.74E-04	3.02E-03	0.00E+00	5.23E-04	1.29E-08	4.11E-04	1.21E-02	2.74E-04	0.00E+00
4581	ALL		256602.1	4090136	NonCancerChronicDerived_Inh	2.78E-04	3.06E-03	0.00E+00	5.30E-04	1.30E-08	4.17E-04	1.21E-02	2.78E-04	0.00E+00
4912	ALL		256842.6	4092303	NonCancerChronicDerived_Inh	2.74E-04	3.02E-03	0.00E+00	5.22E-04	1.28E-08	4.11E-04	1.21E-02	2.74E-04	0.00E+00

REC	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL	MAXHI
4587	0.00E+00	0.00E+00	1.61E-03	0.00E+00	0.00E+00	1.30E-02
4568	0.00E+00	0.00E+00	1.58E-03	0.00E+00	0.00E+00	1.29E-02
4571	0.00E+00	0.00E+00	1.56E-03	0.00E+00	0.00E+00	1.28E-02
4584	0.00E+00	0.00E+00	1.57E-03	0.00E+00	0.00E+00	1.27E-02
4547	0.00E+00	0.00E+00	1.54E-03	0.00E+00	0.00E+00	1.26E-02
4586	0.00E+00	0.00E+00	1.56E-03	0.00E+00	0.00E+00	1.26E-02
4556	0.00E+00	0.00E+00	1.54E-03	0.00E+00	0.00E+00	1.26E-02
4585	0.00E+00	0.00E+00	1.56E-03	0.00E+00	0.00E+00	1.25E-02
4588	0.00E+00	0.00E+00	1.56E-03	0.00E+00	0.00E+00	1.25E-02
4546	0.00E+00	0.00E+00	1.54E-03	0.00E+00	0.00E+00	1.25E-02
4580	0.00E+00	0.00E+00	1.55E-03	0.00E+00	0.00E+00	1.25E-02
4567	0.00E+00	0.00E+00	1.53E-03	0.00E+00	0.00E+00	1.25E-02
4578	0.00E+00	0.00E+00	1.54E-03	0.00E+00	0.00E+00	1.24E-02
4579	0.00E+00	0.00E+00	1.54E-03	0.00E+00	0.00E+00	1.24E-02
4576	0.00E+00	0.00E+00	1.53E-03	0.00E+00	0.00E+00	1.23E-02
4583	0.00E+00	0.00E+00	1.53E-03	0.00E+00	0.00E+00	1.23E-02
4572	0.00E+00	0.00E+00	1.51E-03	0.00E+00	0.00E+00	1.23E-02
4589	0.00E+00	0.00E+00	1.53E-03	0.00E+00	0.00E+00	1.23E-02
4577	0.00E+00	0.00E+00	1.52E-03	0.00E+00	0.00E+00	1.23E-02
4590	0.00E+00	0.00E+00	1.52E-03	0.00E+00	0.00E+00	1.22E-02
4551	0.00E+00	0.00E+00	1.49E-03	0.00E+00	0.00E+00	1.22E-02
4548	0.00E+00	0.00E+00	1.49E-03	0.00E+00	0.00E+00	1.22E-02
4582	0.00E+00	0.00E+00	1.51E-03	0.00E+00	0.00E+00	1.22E-02
4558	0.00E+00	0.00E+00	1.49E-03	0.00E+00	0.00E+00	1.22E-02
4910	0.00E+00	0.00E+00	1.49E-03	0.00E+00	0.00E+00	1.22E-02
4557	0.00E+00	0.00E+00	1.49E-03	0.00E+00	0.00E+00	1.22E-02
4569	0.00E+00	0.00E+00	1.49E-03	0.00E+00	0.00E+00	1.22E-02
4564	0.00E+00	0.00E+00	1.49E-03	0.00E+00	0.00E+00	1.21E-02
4581	0.00E+00	0.00E+00	1.51E-03	0.00E+00	0.00E+00	1.21E-02
4912	0.00E+00	0.00E+00	1.49E-03	0.00E+00	0.00E+00	1.21E-02

REC	GRP	NETID	X	Y	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE
4575	ALL		256819	4090664	NonCancerAcute	2.53E-03	3.37E-03	1.28E-02	0.00E+00	0.00E+00	3.37E-03	1.48E-03	0.00E+00	1.41E-03
4732	ALL		256503.8	4089598	NonCancerAcute	2.48E-03	3.31E-03	1.26E-02	0.00E+00	0.00E+00	3.31E-03	1.45E-03	0.00E+00	1.39E-03
4733	ALL		256498.7	4089584	NonCancerAcute	2.36E-03	3.15E-03	1.20E-02	0.00E+00	0.00E+00	3.15E-03	1.38E-03	0.00E+00	1.32E-03
4574	ALL		256837.6	4090718	NonCancerAcute	2.35E-03	3.13E-03	1.19E-02	0.00E+00	0.00E+00	3.13E-03	1.38E-03	0.00E+00	1.31E-03
2048	ALL		256499.9	4089583	NonCancerAcute	2.33E-03	3.10E-03	1.18E-02	0.00E+00	0.00E+00	3.10E-03	1.36E-03	0.00E+00	1.30E-03
4591	ALL		256531.4	4089667	NonCancerAcute	2.25E-03	2.99E-03	1.14E-02	0.00E+00	0.00E+00	2.99E-03	1.32E-03	0.00E+00	1.26E-03
4731	ALL		256510.3	4089594	NonCancerAcute	2.24E-03	2.99E-03	1.13E-02	0.00E+00	0.00E+00	2.99E-03	1.31E-03	0.00E+00	1.25E-03
4576	ALL		256780.4	4090575	NonCancerAcute	2.24E-03	2.98E-03	1.13E-02	0.00E+00	0.00E+00	2.98E-03	1.31E-03	0.00E+00	1.25E-03
4592	ALL		256530.1	4089655	NonCancerAcute	2.22E-03	2.96E-03	1.12E-02	0.00E+00	0.00E+00	2.96E-03	1.30E-03	0.00E+00	1.24E-03
4901	ALL		256768.7	4090684	NonCancerAcute	2.22E-03	2.96E-03	1.12E-02	0.00E+00	0.00E+00	2.96E-03	1.30E-03	0.00E+00	1.24E-03
2049	ALL		256494.6	4089568	NonCancerAcute	2.21E-03	2.95E-03	1.12E-02	0.00E+00	0.00E+00	2.95E-03	1.30E-03	0.00E+00	1.24E-03
4590	ALL		256535.3	4089691	NonCancerAcute	2.21E-03	2.94E-03	1.12E-02	0.00E+00	0.00E+00	2.94E-03	1.29E-03	0.00E+00	1.23E-03
4902	ALL		256789.8	4090748	NonCancerAcute	2.15E-03	2.87E-03	1.09E-02	0.00E+00	0.00E+00	2.87E-03	1.26E-03	0.00E+00	1.20E-03
4914	ALL		256881.8	4092561	NonCancerAcute	2.09E-03	2.78E-03	1.06E-02	0.00E+00	0.00E+00	2.78E-03	1.22E-03	0.00E+00	1.17E-03
2050	ALL		256512.9	4089579	NonCancerAcute	2.09E-03	2.78E-03	1.06E-02	0.00E+00	0.00E+00	2.78E-03	1.22E-03	0.00E+00	1.17E-03
4573	ALL		256851.2	4090774	NonCancerAcute	2.08E-03	2.77E-03	1.05E-02	0.00E+00	0.00E+00	2.77E-03	1.22E-03	0.00E+00	1.16E-03
995	ALL		256813.5	4090614	NonCancerAcute	2.05E-03	2.73E-03	1.04E-02	0.00E+00	0.00E+00	2.73E-03	1.20E-03	0.00E+00	1.14E-03
4593	ALL		256531.8	4089636	NonCancerAcute	2.02E-03	2.69E-03	1.02E-02	0.00E+00	0.00E+00	2.69E-03	1.18E-03	0.00E+00	1.13E-03
4786	ALL		254154.7	4087563	NonCancerAcute	2.02E-03	2.69E-03	1.02E-02	0.00E+00	0.00E+00	2.69E-03	1.18E-03	0.00E+00	1.13E-03
996	ALL		256803.8	4090592	NonCancerAcute	2.01E-03	2.68E-03	1.02E-02	0.00E+00	0.00E+00	2.68E-03	1.18E-03	0.00E+00	1.13E-03
994	ALL		256823.1	4090636	NonCancerAcute	2.01E-03	2.68E-03	1.02E-02	0.00E+00	0.00E+00	2.68E-03	1.18E-03	0.00E+00	1.12E-03
4900	ALL		256732.6	4090604	NonCancerAcute	2.01E-03	2.67E-03	1.02E-02	0.00E+00	0.00E+00	2.67E-03	1.17E-03	0.00E+00	1.12E-03
2047	ALL		256504.6	4089558	NonCancerAcute	2.00E-03	2.66E-03	1.01E-02	0.00E+00	0.00E+00	2.66E-03	1.17E-03	0.00E+00	1.12E-03
4903	ALL		256799.8	4090815	NonCancerAcute	1.96E-03	2.61E-03	9.92E-03	0.00E+00	0.00E+00	2.61E-03	1.15E-03	0.00E+00	1.10E-03
987	ALL		256833.2	4090659	NonCancerAcute	1.95E-03	2.60E-03	9.88E-03	0.00E+00	0.00E+00	2.60E-03	1.14E-03	0.00E+00	1.09E-03
4589	ALL		256545.8	4089732	NonCancerAcute	1.95E-03	2.59E-03	9.85E-03	0.00E+00	0.00E+00	2.59E-03	1.14E-03	0.00E+00	1.09E-03
4840	ALL		254061.1	4087566	NonCancerAcute	1.94E-03	2.59E-03	9.84E-03	0.00E+00	0.00E+00	2.59E-03	1.14E-03	0.00E+00	1.09E-03
1000	ALL		256817.6	4090586	NonCancerAcute	1.94E-03	2.59E-03	9.84E-03	0.00E+00	0.00E+00	2.59E-03	1.14E-03	0.00E+00	1.09E-03
4730	ALL		256524.3	4089580	NonCancerAcute	1.94E-03	2.59E-03	9.82E-03	0.00E+00	0.00E+00	2.59E-03	1.14E-03	0.00E+00	1.09E-03
1001	ALL		256807.9	4090563	NonCancerAcute	1.94E-03	2.58E-03	9.81E-03	0.00E+00	0.00E+00	2.58E-03	1.13E-03	0.00E+00	1.08E-03

REC	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL	MAXHI
4575	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.28E-02
4732	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.26E-02
4733	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-02
4574	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.19E-02
2048	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E-02
4591	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-02
4731	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E-02
4576	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E-02
4592	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-02
4901	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-02
2049	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-02
4590	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-02
4902	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.09E-02
4914	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.06E-02
2050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.06E-02
4573	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-02
995	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.04E-02
4593	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-02
4786	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-02
996	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-02
994	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-02
4900	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-02
2047	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-02
4903	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.92E-03
987	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.88E-03
4589	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.85E-03
4840	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.84E-03
1000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.84E-03
4730	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.82E-03
1001	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.81E-03

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<!--Created 2026/04/29 15:46:06-->
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  <AERMODMode>Y</AERMODMode><!--Read AERMOD plot file (Y) or read CSV file (N)-->
  <GLCList>C:\HARP2\Rockfield\CEMEX_FRIANT_ROAD\hra\Phase_1_Ind_GLCList.csv</GLCList>
  <PollutantList>C:\HARP2\Rockfield\CEMEX_FRIANT_ROAD\hra\Phase_1_Ind_PolDB.csv</PollutantList>

<PathwayRecConc>C:\HARP2\Rockfield\CEMEX_FRIANT_ROAD\hra\Phase_1_Ind_PathwayRec.csv</PathwayRec
Conc>
  <Output>C:\HARP2\Rockfield\CEMEX_FRIANT_ROAD\hra</Output>
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  <Append>N</Append>
  <ReceptorIndex>NA</ReceptorIndex>
  <SourceName>NA</SourceName>
  <RiskScenario>
      <ReceptorType>Resident</ReceptorType><!--Residential, Population, School, or Worker-->
      <UDEDOn>N</UDEDOn><!--Y or N-->
      <ExposureDuration>70</ExposureDuration><!--years-->
      <Scenario>NCAcute</Scenario><!--Cancer, NCChronic, NCChronic8HR, NCAcute, All-->
      <StartAge>-0.25</StartAge><!--years-->
      <WorkerExposureFrequency>250</WorkerExposureFrequency><!--days/year-->
      <WorkerNote>NA</WorkerNote>
      <Tier2On>N</Tier2On>
      <IntakeRatePercentile>Derived</IntakeRatePercentile><!--HighEnd, Mean, Derived-->
  </RiskScenario>
<Pathways>
  <Type>1</Type>
  <PathwaysEnabled><!--Y or N-->
      <Inhalation>Y</Inhalation>
      <Soil>N</Soil>
      <Dermal>N</Dermal>
      <MothersMilk>N</MothersMilk>
      <Water>N</Water>
      <Fish>N</Fish>
      <HomegrownCrop>N</HomegrownCrop>
      <Beef>N</Beef>
      <Dairy>N</Dairy>
      <Pig>N</Pig>
      <Chicken>N</Chicken>
      <Egg>N</Egg>
  </PathwaysEnabled>
  <Inhalation>
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      <FAH16to70>Y</FAH16to70><!--Y or N-->
      <DBRType>LongTerm24HR</DBRType><!--LongTerm24HR, RMP, SedentaryPassive8HR, Light8HR, or
Moderate8HR-->
      <GLCAdjustmentFactor>1</GLCAdjustmentFactor>
      <UseAdj>N</UseAdj><!--Y or N-->
      <USEPOSTFILE8REL>N</USEPOSTFILE8REL><!--Y or N-->
      <USEPOSTFILECAN>N</USEPOSTFILECAN><!--Y or N-->
```

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  <Deposition>0.05</Deposition>
  <SoilMixingRate>0.01</SoilMixingRate>
  <DermalClimate>Mixed</DermalClimate><!--Cold, Mixed, or Warm-->
  <HumanWater>
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      <WaterVolume>0</WaterVolume><!--kg-->
      <VolumeChangesPerYear>0</VolumeChangesPerYear>
      <FractionFromContamSource>0</FractionFromContamSource>
      <RecPhysicallyActiveLivesWorkHotClimates>N</RecPhysicallyActiveLivesWorkHotClimates><!--Y or N-->
  </HumanWater>
  <Homegrown>
      <HouseholdType>HouseholdsthatGarden</HouseholdType><!--HouseholdsthatGarden, HouseholdsthatFarm, or
UserDefined-->
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      <Exposed>0.137</Exposed>
      <Protected>0.137</Protected>
      <Root>0.137</Root>
  </Homegrown>
  <Fish>
      <SurfaceArea>0</SurfaceArea><!--m^2-->
      <WaterVolume>0</WaterVolume><!--kg-->
      <VolumeChangesPerYear>0</VolumeChangesPerYear>
      <FractionFromContamSource>0</FractionFromContamSource>
  </Fish>
  <AnimalFractions>
      <HouseholdTypeBD>RaiseHunt</HouseholdTypeBD><!--RaiseHunt, Farm, or UserDefined-->
      <HouseholdTypePCE>RaiseHunt</HouseholdTypePCE><!--RaiseHunt, Farm, or UserDefined-->
      <Beef>0.485</Beef>
      <Pork>0.242</Pork>
      <Poultry>0.156</Poultry>
      <Eggs>0.146</Eggs>
      <Dairy>0.207</Dairy>
  </AnimalFractions>
  <BeefDairyWater>
      <SurfaceArea>0</SurfaceArea><!--m^2-->
      <WaterVolume>0</WaterVolume><!--kg-->
      <VolumeChangesPerYear>0</VolumeChangesPerYear>
      <FractionFromContamSourceBeef>0</FractionFromContamSourceBeef>
      <FractionFromContamSourceDairy>0</FractionFromContamSourceDairy>
  </BeefDairyWater>
  <BeefFractionFromGrazing>0.5</BeefFractionFromGrazing>
  <DairyFractionFromGrazing>0.5</DairyFractionFromGrazing>
  <PigChickenEggsWater>
      <SurfaceArea>0</SurfaceArea><!--m^2-->
      <WaterVolume>0</WaterVolume><!--kg-->
      <VolumeChangesPerYear>0</VolumeChangesPerYear>
      <FractionFromContamSourcePig>0</FractionFromContamSourcePig>
      <FractionFromContamSourceChicken>0</FractionFromContamSourceChicken>
      <FractionFromContamSourceEggs>0</FractionFromContamSourceEggs>
  </PigChickenEggsWater>
  <Pig>
      <FractionEatenOffGround>0</FractionEatenOffGround>
      <FractionFeedOnsiteContaminated>0.1</FractionFeedOnsiteContaminated>
```

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      <Leafy>0.25</Leafy>
      <Exposed>0.25</Exposed>
      <Protected>0.25</Protected>
      <Root>0.25</Root>
   </Pig>
   <Chicken>
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      <FractionFeedOnsiteContaminated>0.05</FractionFeedOnsiteContaminated>
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      <Exposed>0.25</Exposed>
      <Protected>0.25</Protected>
      <Root>0.25</Root>
   </Chicken>
   <Egg>
      <FractionEatenOffGround>0.05</FractionEatenOffGround>
      <FractionFeedOnsiteContaminated>0</FractionFeedOnsiteContaminated>
      <Leafy>0.25</Leafy>
      <Exposed>0.25</Exposed>
      <Protected>0.25</Protected>
      <Root>0.25</Root>
   </Egg>
</Pathways>
<Tier2>
      <EFOn>N</EFOn><!--Y or N-->
      <EF>350</EF>
      <Inhalation>
            <IROn>N</IROn><!--Y or N-->
            <Mean>225,658,535,452,210,185</Mean>
            <HighEnd>361,1090,861,745,335,290</HighEnd>
            <FAHOn>N</FAHOn><!--Y or N-->
            <FAH>0.85,0.85,0.72,0.72,0.73,0.73</FAH>
      </Inhalation>
      <Soil>
            <IROn>N</IROn><!--Y or N-->
            <Mean>0.7,20,5,3,0.7,0.6</Mean>
            <HighEnd>3,40,20,10,3,3</HighEnd>
            <TfOn>N</TfOn><!--Y or N-->
            <Tf>25550</Tf>
      </Soil>
      <Dermal>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>1100,2200,6600,5700,1100,1100</Mean>
            <HighEnd>2400,2900,8700,8100,2400,2400</HighEnd>
      </Dermal>
      <MothersMilk>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>101</Mean>
            <HighEnd>139</HighEnd>
      </MothersMilk>
      <Water>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>18,113,26,24,18,18</Mean>
            <HighEnd>47,196,66,61,47,45</HighEnd>
      </Water>
```

```
    <Fish>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>0.38,0.18,0.36,0.36,0.38,0.36</Mean>
        <HighEnd>1.22,0.58,1.16,1.16,1.22,1.16</HighEnd>
    </Fish>
    <CropIROn>N</CropIROn><!--Y or N-->
    <BDIROn>N</BDIROn><!--Y or N-->
    <PCEIROn>N</PCEIROn><!--Y or N-->
    <Leafy>
        <Mean>0.9,3.8,2.5,1.7,0.9,1.1</Mean>
        <HighEnd>3.2,10.8,7.9,5.8,3.2,3.4</HighEnd>
    </Leafy>
    <Exposed>
        <Mean>1.9,11.7,7.4,5.5,1.9,1.8</Mean>
        <HighEnd>5.9,30.2,21.7,16.6,5.9,5.6</HighEnd>
    </Exposed>
    <Protected>
        <Mean>1.7,5.9,4.7,3.6,1.7,1.6</Mean>
        <HighEnd>5.8,17.5,13.3,10.6,5.8,5.2</HighEnd>
    </Protected>
    <Root>
        <Mean>1.7,5.7,3.9,3.0,1.7,1.5</Mean>
        <HighEnd>4.6,15.3,10.8,8.7,4.6,4.2</HighEnd>
    </Root>
    <Beef>
        <Mean>2,3.9,3.5,3,2,1.7</Mean>
        <HighEnd>4.8,11.3,8.6,7.6,4.8,4.4</HighEnd>
    </Beef>
    <Dairy>
        <Mean>5.4,50.9,23.3,16.5,5.4,4.3</Mean>
        <HighEnd>15.9,116.1,61.4,48.4,15.9,13.2</HighEnd>
    </Dairy>
    <Pig>
        <Mean>0.9,2.9,2.2,1.8,0.9,0.9</Mean>
        <HighEnd>2.9,10.5,7.8,5.7,2.9,2.8</HighEnd>
    </Pig>
    <Chicken>
        <Mean>1.8,4.5,3.7,3.0,1.8,1.5</Mean>
        <HighEnd>4.7,11.4,9,7.5,4.7,3.8</HighEnd>
    </Chicken>
    <Egg>
        <Mean>1.6,6.1,3.9,3.1,1.6,1.3</Mean>
        <HighEnd>4.2,15,9.4,8.1,4.2,3.4</HighEnd>
    </Egg>
    <WhatWasChanged>NA</WhatWasChanged>
</Tier2>
</HRA>
```

HARP2 - HRACalc (dated 22118) 4/29/2026 3:46:07 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCAcute
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
TIER 2 SETTINGS
Tier2 not used.

****

Calculating acute risk

Acute risk breakdown by pollutant and receptor saved to:
C:\HARP2\Rockfield\CEMEX_FRIANT_ROAD\hra\Phase_1_Ind_NCAcuteRisk.csv
Acute risk total by receptor saved to:
C:\HARP2\Rockfield\CEMEX_FRIANT_ROAD\hra\Phase_1_Ind_NCAcuteRiskSumByRec.csv
HRA ran successfully

```
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<!--Created 2026/04/29 15:53:41-->
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  <PollutantList>C:\HARP2\Rockfield\CEMEX_FRIANT_ROAD\hra\Phase_2_Ind_PolDB.csv</PollutantList>

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Conc>
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      <UDEDOn>N</UDEDOn><!--Y or N-->
      <ExposureDuration>70</ExposureDuration><!--years-->
      <Scenario>NCAcute</Scenario><!--Cancer, NCChronic, NCChronic8HR, NCAcute, All-->
      <StartAge>-0.25</StartAge><!--years-->
      <WorkerExposureFrequency>250</WorkerExposureFrequency><!--days/year-->
      <WorkerNote>NA</WorkerNote>
      <Tier2On>N</Tier2On>
      <IntakeRatePercentile>Derived</IntakeRatePercentile><!--HighEnd, Mean, Derived-->
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  <PathwaysEnabled><!--Y or N-->
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      <Soil>N</Soil>
      <Dermal>N</Dermal>
      <MothersMilk>N</MothersMilk>
      <Water>N</Water>
      <Fish>N</Fish>
      <HomegrownCrop>N</HomegrownCrop>
      <Beef>N</Beef>
      <Dairy>N</Dairy>
      <Pig>N</Pig>
      <Chicken>N</Chicken>
      <Egg>N</Egg>
  </PathwaysEnabled>
  <Inhalation>
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      <FAH16to70>Y</FAH16to70><!--Y or N-->
      <DBRType>LongTerm24HR</DBRType><!--LongTerm24HR, RMP, SedentaryPassive8HR, Light8HR, or
Moderate8HR-->
      <GLCAdjustmentFactor>1</GLCAdjustmentFactor>
      <UseAdj>N</UseAdj><!--Y or N-->
      <USEPOSTFILE8REL>N</USEPOSTFILE8REL><!--Y or N-->
      <USEPOSTFILECAN>N</USEPOSTFILECAN><!--Y or N-->
```

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  <DermalClimate>Mixed</DermalClimate><!--Cold, Mixed, or Warm-->
  <HumanWater>
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      <WaterVolume>0</WaterVolume><!--kg-->
      <VolumeChangesPerYear>0</VolumeChangesPerYear>
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      <RecPhysicallyActiveLivesWorkHotClimates>N</RecPhysicallyActiveLivesWorkHotClimates><!--Y or N-->
  </HumanWater>
  <Homegrown>
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      <Protected>0.137</Protected>
      <Root>0.137</Root>
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      <VolumeChangesPerYear>0</VolumeChangesPerYear>
      <FractionFromContamSource>0</FractionFromContamSource>
  </Fish>
  <AnimalFractions>
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      <HouseholdTypePCE>RaiseHunt</HouseholdTypePCE><!--RaiseHunt, Farm, or UserDefined-->
      <Beef>0.485</Beef>
      <Pork>0.242</Pork>
      <Poultry>0.156</Poultry>
      <Eggs>0.146</Eggs>
      <Dairy>0.207</Dairy>
  </AnimalFractions>
  <BeefDairyWater>
      <SurfaceArea>0</SurfaceArea><!--m^2-->
      <WaterVolume>0</WaterVolume><!--kg-->
      <VolumeChangesPerYear>0</VolumeChangesPerYear>
      <FractionFromContamSourceBeef>0</FractionFromContamSourceBeef>
      <FractionFromContamSourceDairy>0</FractionFromContamSourceDairy>
  </BeefDairyWater>
  <BeefFractionFromGrazing>0.5</BeefFractionFromGrazing>
  <DairyFractionFromGrazing>0.5</DairyFractionFromGrazing>
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      <VolumeChangesPerYear>0</VolumeChangesPerYear>
      <FractionFromContamSourcePig>0</FractionFromContamSourcePig>
      <FractionFromContamSourceChicken>0</FractionFromContamSourceChicken>
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  </PigChickenEggsWater>
  <Pig>
      <FractionEatenOffGround>0</FractionEatenOffGround>
      <FractionFeedOnsiteContaminated>0.1</FractionFeedOnsiteContaminated>
```

```
      <Leafy>0.25</Leafy>
      <Exposed>0.25</Exposed>
      <Protected>0.25</Protected>
      <Root>0.25</Root>
   </Pig>
   <Chicken>
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      <FractionFeedOnsiteContaminated>0.05</FractionFeedOnsiteContaminated>
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      <Exposed>0.25</Exposed>
      <Protected>0.25</Protected>
      <Root>0.25</Root>
   </Chicken>
   <Egg>
      <FractionEatenOffGround>0.05</FractionEatenOffGround>
      <FractionFeedOnsiteContaminated>0</FractionFeedOnsiteContaminated>
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      <Exposed>0.25</Exposed>
      <Protected>0.25</Protected>
      <Root>0.25</Root>
   </Egg>
</Pathways>
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      <EF>350</EF>
      <Inhalation>
            <IROn>N</IROn><!--Y or N-->
            <Mean>225,658,535,452,210,185</Mean>
            <HighEnd>361,1090,861,745,335,290</HighEnd>
            <FAHOn>N</FAHOn><!--Y or N-->
            <FAH>0.85,0.85,0.72,0.72,0.73,0.73</FAH>
      </Inhalation>
      <Soil>
            <IROn>N</IROn><!--Y or N-->
            <Mean>0.7,20,5,3,0.7,0.6</Mean>
            <HighEnd>3,40,20,10,3,3</HighEnd>
            <TfOn>N</TfOn><!--Y or N-->
            <Tf>25550</Tf>
      </Soil>
      <Dermal>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>1100,2200,6600,5700,1100,1100</Mean>
            <HighEnd>2400,2900,8700,8100,2400,2400</HighEnd>
      </Dermal>
      <MothersMilk>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>101</Mean>
            <HighEnd>139</HighEnd>
      </MothersMilk>
      <Water>
            <TfOn>N</TfOn><!--Y or N-->
            <Mean>18,113,26,24,18,18</Mean>
            <HighEnd>47,196,66,61,47,45</HighEnd>
      </Water>
```

```
    <Fish>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>0.38,0.18,0.36,0.36,0.38,0.36</Mean>
        <HighEnd>1.22,0.58,1.16,1.16,1.22,1.16</HighEnd>
    </Fish>
    <CropIROn>N</CropIROn><!--Y or N-->
    <BDIROn>N</BDIROn><!--Y or N-->
    <PCEIROn>N</PCEIROn><!--Y or N-->
    <Leafy>
        <Mean>0.9,3.8,2.5,1.7,0.9,1.1</Mean>
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    </Leafy>
    <Exposed>
        <Mean>1.9,11.7,7.4,5.5,1.9,1.8</Mean>
        <HighEnd>5.9,30.2,21.7,16.6,5.9,5.6</HighEnd>
    </Exposed>
    <Protected>
        <Mean>1.7,5.9,4.7,3.6,1.7,1.6</Mean>
        <HighEnd>5.8,17.5,13.3,10.6,5.8,5.2</HighEnd>
    </Protected>
    <Root>
        <Mean>1.7,5.7,3.9,3.0,1.7,1.5</Mean>
        <HighEnd>4.6,15.3,10.8,8.7,4.6,4.2</HighEnd>
    </Root>
    <Beef>
        <Mean>2,3.9,3.5,3,2,1.7</Mean>
        <HighEnd>4.8,11.3,8.6,7.6,4.8,4.4</HighEnd>
    </Beef>
    <Dairy>
        <Mean>5.4,50.9,23.3,16.5,5.4,4.3</Mean>
        <HighEnd>15.9,116.1,61.4,48.4,15.9,13.2</HighEnd>
    </Dairy>
    <Pig>
        <Mean>0.9,2.9,2.2,1.8,0.9,0.9</Mean>
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    </Pig>
    <Chicken>
        <Mean>1.8,4.5,3.7,3.0,1.8,1.5</Mean>
        <HighEnd>4.7,11.4,9,7.5,4.7,3.8</HighEnd>
    </Chicken>
    <Egg>
        <Mean>1.6,6.1,3.9,3.1,1.6,1.3</Mean>
        <HighEnd>4.2,15,9.4,8.1,4.2,3.4</HighEnd>
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    <WhatWasChanged>NA</WhatWasChanged>
</Tier2>
</HRA>
```

HARP2 - HRACalc (dated 22118) 4/29/2026 3:53:42 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCAcute
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
TIER 2 SETTINGS
Tier2 not used.

****

Calculating acute risk

Acute risk breakdown by pollutant and receptor saved to:
C:\HARP2\Rockfield\CEMEX_FRIANT_ROAD\hra\Phase_2_Ind_NCAcuteRisk.csv
Acute risk total by receptor saved to:
C:\HARP2\Rockfield\CEMEX_FRIANT_ROAD\hra\Phase_2_Ind_NCAcuteRiskSumByRec.csv
HRA ran successfully

APPENDIX I15 MITIGATED HRA
MODELING FILES

Phase 1 (30 yr)
Phase 2 (40 yr)

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<?xml version="1.0" encoding="UTF-8"?>
<!--HARP RISK INPUT FILE-->
<!--Created 2026/04/23 15:29:37-->
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  <HRAVERSION>22118</HRAVERSION>
  <Title>0_30_MIT_</Title>
  <AERMODMode>Y</AERMODMode><!--Read AERMOD plot file (Y) or read CSV file (N)-->
  <GLCList>C:\Z_HARPRUN\Rockfield HRA
v0.8\ROCK_MIT_0_30_CAN\hra\0_30_MIT_GLCList.csv</GLCList>
  <PollutantList>C:\Z_HARPRUN\Rockfield HRA
v0.8\ROCK_MIT_0_30_CAN\hra\0_30_MIT_PolDB.csv</PollutantList>
  <PathwayRecConc>C:\Z_HARPRUN\Rockfield HRA
v0.8\ROCK_MIT_0_30_CAN\hra\0_30_MIT_PathwayRec.csv</PathwayRecConc>
  <Output>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCK_MIT_0_30_CAN\hra</Output>
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  <SourceName>NA</SourceName>
  <RiskScenario>
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Worker-->
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        <ExposureDuration>30</ExposureDuration><!--years-->
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All-->
        <StartAge>-0.25</StartAge><!--years-->
        <WorkerExposureFrequency>250</WorkerExposureFrequency><!--days/year-->
        <WorkerNote>NA</WorkerNote>
        <Tier2On>N</Tier2On>
        <IntakeRatePercentile>Derived</IntakeRatePercentile><!--HighEnd, Mean,
Derived-->
  </RiskScenario>
<Pathways>
  <Type>4</Type>
  <PathwaysEnabled><!--Y or N-->
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        <Soil>Y</Soil>
        <Dermal>Y</Dermal>
        <MothersMilk>Y</MothersMilk>
        <Water>N</Water>
        <Fish>N</Fish>
        <HomegrownCrop>Y</HomegrownCrop>
        <Beef>N</Beef>
        <Dairy>N</Dairy>
        <Pig>N</Pig>
        <Chicken>N</Chicken>
        <Egg>N</Egg>
  </PathwaysEnabled>
  <Inhalation>
        <FAH3rdTrito16>N</FAH3rdTrito16><!--Y or N-->
```

```
        <FAH16to70>N</FAH16to70><!--Y or N-->
        <DBRType>LongTerm24HR</DBRType><!--LongTerm24HR, RMP, SedentaryPassive8HR,
Light8HR, or Moderate8HR-->
        <GLCAdjustmentFactor>2.33</GLCAdjustmentFactor>
        <UseAdj>N</UseAdj><!--Y or N-->
        <USEPOSTFILE8REL>N</USEPOSTFILE8REL><!--Y or N-->
        <USEPOSTFILECAN>N</USEPOSTFILECAN><!--Y or N-->
  </Inhalation>
  <Deposition>0.02</Deposition>
  <SoilMixingRate>0.01</SoilMixingRate>
  <DermalClimate>Mixed</DermalClimate><!--Cold, Mixed, or Warm-->
  <HumanWater>
        <SurfaceArea>0</SurfaceArea><!--m^2-->
        <WaterVolume>0</WaterVolume><!--kg-->
        <VolumeChangesPerYear>0</VolumeChangesPerYear>
        <FractionFromContamSource>0</FractionFromContamSource>

<RecPhysicallyActiveLivesWorkHotClimates>N</RecPhysicallyActiveLivesWorkHotClimates>
<!--Y or N-->
  </HumanWater>
  <Homegrown>
        <HouseholdType>HouseholdsthatGarden</HouseholdType><!--HouseholdsthatGarden,
HouseholdsthatFarm, or UserDefined-->
        <Leafy>0.137</Leafy>
        <Exposed>0.137</Exposed>
        <Protected>0.137</Protected>
        <Root>0.137</Root>
  </Homegrown>
  <Fish>
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        <WaterVolume>0</WaterVolume><!--kg-->
        <VolumeChangesPerYear>0</VolumeChangesPerYear>
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  </Fish>
  <AnimalFractions>
        <HouseholdTypeBD>RaiseHunt</HouseholdTypeBD><!--RaiseHunt, Farm, or
UserDefined-->
        <HouseholdTypePCE>RaiseHunt</HouseholdTypePCE><!--RaiseHunt, Farm, or
UserDefined-->
        <Beef>0.485</Beef>
        <Pork>0.242</Pork>
        <Poultry>0.156</Poultry>
        <Eggs>0.146</Eggs>
        <Dairy>0.207</Dairy>
  </AnimalFractions>
  <BeefDairyWater>
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        <WaterVolume>0</WaterVolume><!--kg-->
        <VolumeChangesPerYear>0</VolumeChangesPerYear>
        <FractionFromContamSourceBeef>0</FractionFromContamSourceBeef>
```

```
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    </BeefDairyWater>
    <BeefFractionFromGrazing>0.5</BeefFractionFromGrazing>
    <DairyFractionFromGrazing>0.5</DairyFractionFromGrazing>
    <PigChickenEggsWater>
        <SurfaceArea>0</SurfaceArea><!--m^2-->
        <WaterVolume>0</WaterVolume><!--kg-->
        <VolumeChangesPerYear>0</VolumeChangesPerYear>
        <FractionFromContamSourcePig>0</FractionFromContamSourcePig>
        <FractionFromContamSourceChicken>0</FractionFromContamSourceChicken>
        <FractionFromContamSourceEggs>0</FractionFromContamSourceEggs>
    </PigChickenEggsWater>
    <Pig>
        <FractionEatenOffGround>0</FractionEatenOffGround>
        <FractionFeedOnsiteContaminated>0.1</FractionFeedOnsiteContaminated>
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        <Exposed>0.25</Exposed>
        <Protected>0.25</Protected>
        <Root>0.25</Root>
    </Pig>
    <Chicken>
        <FractionEatenOffGround>0</FractionEatenOffGround>
        <FractionFeedOnsiteContaminated>0.05</FractionFeedOnsiteContaminated>
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        <Exposed>0.25</Exposed>
        <Protected>0.25</Protected>
        <Root>0.25</Root>
    </Chicken>
    <Egg>
        <FractionEatenOffGround>0.05</FractionEatenOffGround>
        <FractionFeedOnsiteContaminated>0</FractionFeedOnsiteContaminated>
        <Leafy>0.25</Leafy>
        <Exposed>0.25</Exposed>
        <Protected>0.25</Protected>
        <Root>0.25</Root>
    </Egg>
</Pathways>
<Tier2>
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        <EF>350</EF>
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                <Mean>225,658,535,452,210,185</Mean>
                <HighEnd>361,1090,861,745,335,290</HighEnd>
                <FAHOn>N</FAHOn><!--Y or N-->
                <FAH>0.85,0.85,0.72,0.72,0.73,0.73</FAH>
        </Inhalation>
        <Soil>
                <IROn>N</IROn><!--Y or N-->
                <Mean>0.7,20,5,3,0.7,0.6</Mean>
```

```
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</Soil>
<Dermal>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>1100,2200,6600,5700,1100,1100</Mean>
        <HighEnd>2400,2900,8700,8100,2400,2400</HighEnd>
</Dermal>
<MothersMilk>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>101</Mean>
        <HighEnd>139</HighEnd>
</MothersMilk>
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        <TfOn>N</TfOn><!--Y or N-->
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        <HighEnd>47,196,66,61,47,45</HighEnd>
</Water>
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</Fish>
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<PCEIROn>N</PCEIROn><!--Y or N-->
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<Protected>
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        <HighEnd>5.8,17.5,13.3,10.6,5.8,5.2</HighEnd>
</Protected>
<Root>
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        <HighEnd>4.6,15.3,10.8,8.7,4.6,4.2</HighEnd>
</Root>
<Beef>
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        <HighEnd>4.8,11.3,8.6,7.6,4.8,4.4</HighEnd>
</Beef>
<Dairy>
        <Mean>5.4,50.9,23.3,16.5,5.4,4.3</Mean>
        <HighEnd>15.9,116.1,61.4,48.4,15.9,13.2</HighEnd>
```

```
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        <Pig>
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                <HighEnd>2.9,10.5,7.8,5.7,2.9,2.8</HighEnd>
        </Pig>
        <Chicken>
                <Mean>1.8,4.5,3.7,3.0,1.8,1.5</Mean>
                <HighEnd>4.7,11.4,9,7.5,4.7,3.8</HighEnd>
        </Chicken>
        <Egg>
                <Mean>1.6,6.1,3.9,3.1,1.6,1.3</Mean>
                <HighEnd>4.2,15,9.4,8.1,4.2,3.4</HighEnd>
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</HRA>
```

HARP2 - HRACalc (dated 22118) 4/23/2026 3:29:38 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCChronic
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: True
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
SOIL & DERMAL PATHWAY SETTINGS

```
Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

**********
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

**********
TIER 2 SETTINGS
Tier2 not used.

**********

Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: C:\Z_HARPRUN\Rockfield
HRA v0.8\ROCK_MIT_0_30_CAN\hra\0_30_MIT_NCChronicRisk.csv
Chronic risk total by receptor saved to: C:\Z_HARPRUN\Rockfield HRA
v0.8\ROCK_MIT_0_30_CAN\hra\0_30_MIT_NCChronicRiskSumByRec.csv
HRA ran successfully
```

```
<?xml version="1.0" encoding="UTF-8"?>
<!--HARP RISK INPUT FILE-->
<!--Created 2026/04/23 21:20:32-->
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  <HRAVERSION>22118</HRAVERSION>
  <Title>31_70_MIT_</Title>
  <AERMODMode>Y</AERMODMode><!--Read AERMOD plot file (Y) or read CSV file (N)-->
  <GLCList>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD MIT 31-70
V0.2\hra\31_70_MIT_GLCList.csv</GLCList>
  <PollutantList>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD MIT 31-70
V0.2\hra\31_70_MIT_PolDB.csv</PollutantList>
  <PathwayRecConc>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD MIT 31-70
V0.2\hra\31_70_MIT_PathwayRec.csv</PathwayRecConc>
  <Output>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD MIT 31-70 V0.2\hra</Output>
  <PollutantNum>64</PollutantNum>
  <Append>N</Append>
  <ReceptorIndex>NA</ReceptorIndex>
  <SourceName>NA</SourceName>
  <RiskScenario>
        <ReceptorType>Resident</ReceptorType><!--Residential, Population, School, or
Worker-->
        <UDEDOn>Y</UDEDOn><!--Y or N-->
        <ExposureDuration>40</ExposureDuration><!--years-->
        <Scenario>NCChronic</Scenario><!--Cancer, NCChronic, NCChronic8HR, NCAcute,
All-->
        <StartAge>-0.25</StartAge><!--years-->
        <WorkerExposureFrequency>250</WorkerExposureFrequency><!--days/year-->
        <WorkerNote>NA</WorkerNote>
        <Tier2On>Y</Tier2On>
        <IntakeRatePercentile>Derived</IntakeRatePercentile><!--HighEnd, Mean,
Derived-->
  </RiskScenario>
<Pathways>
  <Type>4</Type>
  <PathwaysEnabled><!--Y or N-->
        <Inhalation>Y</Inhalation>
        <Soil>Y</Soil>
        <Dermal>Y</Dermal>
        <MothersMilk>Y</MothersMilk>
        <Water>N</Water>
        <Fish>N</Fish>
        <HomegrownCrop>Y</HomegrownCrop>
        <Beef>N</Beef>
        <Dairy>N</Dairy>
        <Pig>N</Pig>
        <Chicken>N</Chicken>
        <Egg>N</Egg>
  </PathwaysEnabled>
  <Inhalation>
        <FAH3rdTrito16>N</FAH3rdTrito16><!--Y or N-->
```

```
        <FAH16to70>N</FAH16to70><!--Y or N-->
        <DBRType>LongTerm24HR</DBRType><!--LongTerm24HR, RMP, SedentaryPassive8HR,
Light8HR, or Moderate8HR-->
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        <UseAdj>N</UseAdj><!--Y or N-->
        <USEPOSTFILE8REL>N</USEPOSTFILE8REL><!--Y or N-->
        <USEPOSTFILECAN>N</USEPOSTFILECAN><!--Y or N-->
  </Inhalation>
  <Deposition>0.02</Deposition>
  <SoilMixingRate>0.01</SoilMixingRate>
  <DermalClimate>Mixed</DermalClimate><!--Cold, Mixed, or Warm-->
  <HumanWater>
        <SurfaceArea>0</SurfaceArea><!--m^2-->
        <WaterVolume>0</WaterVolume><!--kg-->
        <VolumeChangesPerYear>0</VolumeChangesPerYear>
        <FractionFromContamSource>0</FractionFromContamSource>

<RecPhysicallyActiveLivesWorkHotClimates>N</RecPhysicallyActiveLivesWorkHotClimates>
<!--Y or N-->
  </HumanWater>
  <Homegrown>
        <HouseholdType>HouseholdsthatGarden</HouseholdType><!--HouseholdsthatGarden,
HouseholdsthatFarm, or UserDefined-->
        <Leafy>0.137</Leafy>
        <Exposed>0.137</Exposed>
        <Protected>0.137</Protected>
        <Root>0.137</Root>
  </Homegrown>
  <Fish>
        <SurfaceArea>0</SurfaceArea><!--m^2-->
        <WaterVolume>0</WaterVolume><!--kg-->
        <VolumeChangesPerYear>0</VolumeChangesPerYear>
        <FractionFromContamSource>0</FractionFromContamSource>
  </Fish>
  <AnimalFractions>
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UserDefined-->
        <HouseholdTypePCE>RaiseHunt</HouseholdTypePCE><!--RaiseHunt, Farm, or
UserDefined-->
        <Beef>0.485</Beef>
        <Pork>0.242</Pork>
        <Poultry>0.156</Poultry>
        <Eggs>0.146</Eggs>
        <Dairy>0.207</Dairy>
  </AnimalFractions>
  <BeefDairyWater>
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        <WaterVolume>0</WaterVolume><!--kg-->
        <VolumeChangesPerYear>0</VolumeChangesPerYear>
        <FractionFromContamSourceBeef>0</FractionFromContamSourceBeef>
```

```
        <FractionFromContamSourceDairy>0</FractionFromContamSourceDairy>
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    <BeefFractionFromGrazing>0.5</BeefFractionFromGrazing>
    <DairyFractionFromGrazing>0.5</DairyFractionFromGrazing>
    <PigChickenEggsWater>
        <SurfaceArea>0</SurfaceArea><!--m^2-->
        <WaterVolume>0</WaterVolume><!--kg-->
        <VolumeChangesPerYear>0</VolumeChangesPerYear>
        <FractionFromContamSourcePig>0</FractionFromContamSourcePig>
        <FractionFromContamSourceChicken>0</FractionFromContamSourceChicken>
        <FractionFromContamSourceEggs>0</FractionFromContamSourceEggs>
    </PigChickenEggsWater>
    <Pig>
        <FractionEatenOffGround>0</FractionEatenOffGround>
        <FractionFeedOnsiteContaminated>0.1</FractionFeedOnsiteContaminated>
        <Leafy>0.25</Leafy>
        <Exposed>0.25</Exposed>
        <Protected>0.25</Protected>
        <Root>0.25</Root>
    </Pig>
    <Chicken>
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        <Exposed>0.25</Exposed>
        <Protected>0.25</Protected>
        <Root>0.25</Root>
    </Chicken>
    <Egg>
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        <FractionFeedOnsiteContaminated>0</FractionFeedOnsiteContaminated>
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        <Exposed>0.25</Exposed>
        <Protected>0.25</Protected>
        <Root>0.25</Root>
    </Egg>
</Pathways>
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        <EFOn>N</EFOn><!--Y or N-->
        <EF>350</EF>
        <Inhalation>
                <IROn>N</IROn><!--Y or N-->
                <Mean>225,658,535,452,210,185</Mean>
                <HighEnd>361,1090,861,745,335,290</HighEnd>
                <FAHOn>N</FAHOn><!--Y or N-->
                <FAH>0.85,0.85,0.72,0.72,0.73,0.73</FAH>
        </Inhalation>
        <Soil>
                <IROn>N</IROn><!--Y or N-->
                <Mean>0.7,20,5,3,0.7,0.6</Mean>
```

```
        <HighEnd>3,40,20,10,3,3</HighEnd>
        <TfOn>N</TfOn><!--Y or N-->
        <Tf>25550</Tf>
</Soil>
<Dermal>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>1100,2200,6600,5700,1100,1100</Mean>
        <HighEnd>2400,2900,8700,8100,2400,2400</HighEnd>
</Dermal>
<MothersMilk>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>101</Mean>
        <HighEnd>139</HighEnd>
</MothersMilk>
<Water>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>18,113,26,24,18,18</Mean>
        <HighEnd>47,196,66,61,47,45</HighEnd>
</Water>
<Fish>
        <TfOn>N</TfOn><!--Y or N-->
        <Mean>0.38,0.18,0.36,0.36,0.38,0.36</Mean>
        <HighEnd>1.22,0.58,1.16,1.16,1.22,1.16</HighEnd>
</Fish>
<CropIROn>N</CropIROn><!--Y or N-->
<BDIROn>N</BDIROn><!--Y or N-->
<PCEIROn>N</PCEIROn><!--Y or N-->
<Leafy>
        <Mean>0.9,3.8,2.5,1.7,0.9,1.1</Mean>
        <HighEnd>3.2,10.8,7.9,5.8,3.2,3.4</HighEnd>
</Leafy>
<Exposed>
        <Mean>1.9,11.7,7.4,5.5,1.9,1.8</Mean>
        <HighEnd>5.9,30.2,21.7,16.6,5.9,5.6</HighEnd>
</Exposed>
<Protected>
        <Mean>1.7,5.9,4.7,3.6,1.7,1.6</Mean>
        <HighEnd>5.8,17.5,13.3,10.6,5.8,5.2</HighEnd>
</Protected>
<Root>
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        <HighEnd>4.6,15.3,10.8,8.7,4.6,4.2</HighEnd>
</Root>
<Beef>
        <Mean>2,3.9,3.5,3,2,1.7</Mean>
        <HighEnd>4.8,11.3,8.6,7.6,4.8,4.4</HighEnd>
</Beef>
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        <HighEnd>15.9,116.1,61.4,48.4,15.9,13.2</HighEnd>
```

```
        </Dairy>
        <Pig>
                <Mean>0.9,2.9,2.2,1.8,0.9,0.9</Mean>
                <HighEnd>2.9,10.5,7.8,5.7,2.9,2.8</HighEnd>
        </Pig>
        <Chicken>
                <Mean>1.8,4.5,3.7,3.0,1.8,1.5</Mean>
                <HighEnd>4.7,11.4,9,7.5,4.7,3.8</HighEnd>
        </Chicken>
        <Egg>
                <Mean>1.6,6.1,3.9,3.1,1.6,1.3</Mean>
                <HighEnd>4.2,15,9.4,8.1,4.2,3.4</HighEnd>
        </Egg>
        <WhatWasChanged>ED or start age changed|</WhatWasChanged>
</Tier2>
</HRA>
```

HARP2 - HRACalc (dated 22118) 4/23/2026 9:20:34 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCChronic
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: True
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD MIT 31-70 V0.2\hra\31_70_MIT_NCChronicRisk.csv
Chronic risk total by receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD MIT 31-70 V0.2\hra\31_70_MIT_NCChronicRiskSumByRec.csv
HRA ran successfully

APPENDIX I16 MITIGATED HRA
MODELING FILES

Phase 1 (30 yr)
Phase 2 (40 yr)

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```
<?xml version="1.0" encoding="UTF-8"?>
<!--HARP RISK INPUT FILE-->
<!--Created 2026/04/23 22:38:04-->
<HRA>
  <HRAVERSION>22118</HRAVERSION>
  <Title>31_100_MIT_</Title>
  <AERMODMode>Y</AERMODMode><!--Read AERMOD plot file (Y) or read CSV file (N)-->
  <GLCList>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD MIT 31-100
V0.2\hra\31_100_MIT_GLCList.csv</GLCList>
  <PollutantList>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD MIT 31-100
V0.2\hra\31_100_MIT_PolDB.csv</PollutantList>
  <PathwayRecConc>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD MIT 31-100
V0.2\hra\31_100_MIT_PathwayRec.csv</PathwayRecConc>
  <Output>C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD MIT 31-100 V0.2\hra</Output>
  <PollutantNum>64</PollutantNum>
  <Append>N</Append>
  <ReceptorIndex>NA</ReceptorIndex>
  <SourceName>NA</SourceName>
  <RiskScenario>
        <ReceptorType>Resident</ReceptorType><!--Residential, Population, School, or
Worker-->
        <UDEDOn>N</UDEDOn><!--Y or N-->
        <ExposureDuration>30</ExposureDuration><!--years-->
        <Scenario>NCChronic</Scenario><!--Cancer, NCChronic, NCChronic8HR, NCAcute,
All-->
        <StartAge>-0.25</StartAge><!--years-->
        <WorkerExposureFrequency>250</WorkerExposureFrequency><!--days/year-->
        <WorkerNote>NA</WorkerNote>
        <Tier2On>N</Tier2On>
        <IntakeRatePercentile>Derived</IntakeRatePercentile><!--HighEnd, Mean,
Derived-->
  </RiskScenario>
<Pathways>
  <Type>4</Type>
  <PathwaysEnabled><!--Y or N-->
        <Inhalation>Y</Inhalation>
        <Soil>Y</Soil>
        <Dermal>Y</Dermal>
        <MothersMilk>Y</MothersMilk>
        <Water>N</Water>
        <Fish>N</Fish>
        <HomegrownCrop>Y</HomegrownCrop>
        <Beef>N</Beef>
        <Dairy>N</Dairy>
        <Pig>N</Pig>
        <Chicken>N</Chicken>
        <Egg>N</Egg>
  </PathwaysEnabled>
  <Inhalation>
        <FAH3rdTrito16>N</FAH3rdTrito16><!--Y or N-->
```

```
        <FAH16to70>N</FAH16to70><!--Y or N-->
        <DBRType>LongTerm24HR</DBRType><!--LongTerm24HR, RMP, SedentaryPassive8HR,
Light8HR, or Moderate8HR-->
        <GLCAdjustmentFactor>2.33</GLCAdjustmentFactor>
        <UseAdj>N</UseAdj><!--Y or N-->
        <USEPOSTFILE8REL>N</USEPOSTFILE8REL><!--Y or N-->
        <USEPOSTFILECAN>N</USEPOSTFILECAN><!--Y or N-->
  </Inhalation>
  <Deposition>0.02</Deposition>
  <SoilMixingRate>0.01</SoilMixingRate>
  <DermalClimate>Mixed</DermalClimate><!--Cold, Mixed, or Warm-->
  <HumanWater>
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        <WaterVolume>0</WaterVolume><!--kg-->
        <VolumeChangesPerYear>0</VolumeChangesPerYear>
        <FractionFromContamSource>0</FractionFromContamSource>

<RecPhysicallyActiveLivesWorkHotClimates>N</RecPhysicallyActiveLivesWorkHotClimates>
<!--Y or N-->
  </HumanWater>
  <Homegrown>
        <HouseholdType>HouseholdsthatGarden</HouseholdType><!--HouseholdsthatGarden,
HouseholdsthatFarm, or UserDefined-->
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        <Exposed>0.137</Exposed>
        <Protected>0.137</Protected>
        <Root>0.137</Root>
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  <Fish>
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        <WaterVolume>0</WaterVolume><!--kg-->
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  </Fish>
  <AnimalFractions>
        <HouseholdTypeBD>RaiseHunt</HouseholdTypeBD><!--RaiseHunt, Farm, or
UserDefined-->
        <HouseholdTypePCE>RaiseHunt</HouseholdTypePCE><!--RaiseHunt, Farm, or
UserDefined-->
        <Beef>0.485</Beef>
        <Pork>0.242</Pork>
        <Poultry>0.156</Poultry>
        <Eggs>0.146</Eggs>
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  <BeefDairyWater>
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        <WaterVolume>0</WaterVolume><!--kg-->
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```

```
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    </BeefDairyWater>
    <BeefFractionFromGrazing>0.5</BeefFractionFromGrazing>
    <DairyFractionFromGrazing>0.5</DairyFractionFromGrazing>
    <PigChickenEggsWater>
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        <WaterVolume>0</WaterVolume><!--kg-->
        <VolumeChangesPerYear>0</VolumeChangesPerYear>
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    </PigChickenEggsWater>
    <Pig>
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        <Exposed>0.25</Exposed>
        <Protected>0.25</Protected>
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    </Pig>
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        <FractionFeedOnsiteContaminated>0.05</FractionFeedOnsiteContaminated>
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        <Exposed>0.25</Exposed>
        <Protected>0.25</Protected>
        <Root>0.25</Root>
    </Chicken>
    <Egg>
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        <FractionFeedOnsiteContaminated>0</FractionFeedOnsiteContaminated>
        <Leafy>0.25</Leafy>
        <Exposed>0.25</Exposed>
        <Protected>0.25</Protected>
        <Root>0.25</Root>
    </Egg>
</Pathways>
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        <EF>350</EF>
        <Inhalation>
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                <Mean>225,658,535,452,210,185</Mean>
                <HighEnd>361,1090,861,745,335,290</HighEnd>
                <FAHOn>N</FAHOn><!--Y or N-->
                <FAH>0.85,0.85,0.72,0.72,0.73,0.73</FAH>
        </Inhalation>
        <Soil>
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```

```
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</Soil>
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        <TfOn>N</TfOn><!--Y or N-->
        <Mean>1100,2200,6600,5700,1100,1100</Mean>
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</Dermal>
<MothersMilk>
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        <HighEnd>139</HighEnd>
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</Water>
<Fish>
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</Fish>
<CropIROn>N</CropIROn><!--Y or N-->
<BDIROn>N</BDIROn><!--Y or N-->
<PCEIROn>N</PCEIROn><!--Y or N-->
<Leafy>
        <Mean>0.9,3.8,2.5,1.7,0.9,1.1</Mean>
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        <HighEnd>5.8,17.5,13.3,10.6,5.8,5.2</HighEnd>
</Protected>
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</Root>
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</Beef>
<Dairy>
        <Mean>5.4,50.9,23.3,16.5,5.4,4.3</Mean>
        <HighEnd>15.9,116.1,61.4,48.4,15.9,13.2</HighEnd>
```

```
        </Dairy>
        <Pig>
                <Mean>0.9,2.9,2.2,1.8,0.9,0.9</Mean>
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        </Pig>
        <Chicken>
                <Mean>1.8,4.5,3.7,3.0,1.8,1.5</Mean>
                <HighEnd>4.7,11.4,9,7.5,4.7,3.8</HighEnd>
        </Chicken>
        <Egg>
                <Mean>1.6,6.1,3.9,3.1,1.6,1.3</Mean>
                <HighEnd>4.2,15,9.4,8.1,4.2,3.4</HighEnd>
        </Egg>
        <WhatWasChanged>NA</WhatWasChanged>
</Tier2>
</HRA>
```

HARP2 - HRACalc (dated 22118) 4/23/2026 10:38:06 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCChronic
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: True
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
SOIL & DERMAL PATHWAY SETTINGS

```
Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

**********
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

**********
TIER 2 SETTINGS
Tier2 not used.

**********

Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: C:\Z_HARPRUN\Rockfield
HRA v0.8\ROCKFIELD MIT 31-100 V0.2\hra\31_100_MIT_NCChronicRisk.csv
Chronic risk total by receptor saved to: C:\Z_HARPRUN\Rockfield HRA v0.8\ROCKFIELD
MIT 31-100 V0.2\hra\31_100_MIT_NCChronicRiskSumByRec.csv
HRA ran successfully
```

APPENDIX I17 CANCER BURDEN

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Cancer Burden Formula

Definition:	Source:
"Cancer Burden" – The estimated increase in the occurrence of cancer cases in a population resulting from exposure to carcinogenic air contaminants. The cancer burden can be calculated by multiplying the cancer risk at a census block centroid by the number of people who live in the census block, and adding up the estimated number of potential cancer cases across the zone of impact. The result of this calculation is a single number that is intended to estimate of the number of potential cancer cases within the population that was exposed to the emissions for a lifetime (70 years). The cancer burden is calculated on the basis of lifetime (70 year) risks (whereas individual cancer risk at the MEIR is based on 30-year 1320-2 MDAQMD Rule 1320 NSR for Toxic Air Contaminants residential exposure). Cancer burden is independent of how many people move in or out of the vicinity of an individual facility. For example, if 10,000 people are exposed to a carcinogen at a concentration with a 1×10-5 cancer risk for a lifetime the cancer burden is 0.1, and if 100,000 people are exposed to a 1 × 10-5 risk the cancer burden is 1	Rule 1320: New Source Review For Toxic Air Contaminants

Formula:	$Total\ Cancer\ Burden = \sum_{i=1}^{N} (Cancer\ Risk_i * Population_i)$

*Where *i* is the specific census block and *N* is the total number of census blocks used for the analysis

For this analysis, *N* is the number of receptors in the tables and *i* is the individual receptor

Total Project Cancer Burden	**-2.63E-01**
Total Mitigated Project Cancer Burden	**-2.63E-01**

Figure Note: A figure was not developed to showcase cancer burden results do to all cancer risk values being below 0 (negative).

REC	GRP	NETID	X	Y	RISK_SUM	SCENARIO	INH_RISK	SOIL_RISK	DERMAL_RISK	MMILK_RISK
3552	ALL		256231.95	4092916.83	-8.15E-05	70YrCancerDer	-8.14E-05	-1.08E-08	-1.49E-09	4.23E-13
2105	ALL		256651.59	4094273.25	-6.88E-05	70YrCancerDer	-6.92E-05	1.19E-07	6.62E-09	4.80E-10
3541	ALL		255399.53	4093581.83	-5.84E-05	70YrCancerDer	-5.84E-05	-6.39E-09	-8.82E-10	2.76E-11
3542	ALL		255391.62	4093483.55	-4.87E-05	70YrCancerDer	-4.87E-05	-5.45E-09	-7.51E-10	3.27E-11
3540	ALL		255068.3	4094028.31	-3.56E-05	70YrCancerDer	-3.56E-05	-3.89E-09	-5.36E-10	5.06E-11
3537	ALL		254233.99	4094409.08	-2.20E-05	70YrCancerDer	-2.20E-05	-1.63E-09	-2.28E-10	3.49E-11
3551	ALL		255036.28	4093583.33	-1.54E-05	70YrCancerDer	-1.54E-05	-1.76E-09	-2.42E-10	3.48E-11
3549	ALL		255680.08	4091931.5	-1.52E-05	70YrCancerDer	-1.51E-05	-6.24E-09	-8.38E-10	-1.82E-12
2136	ALL		256220.6	4091640.75	-1.51E-05	70YrCancerDer	-1.50E-05	-8.24E-09	-1.10E-09	-6.14E-12
3535	ALL		256291.86	4095678.82	-1.41E-05	70YrCancerDer	-1.41E-05	3.12E-09	1.80E-10	3.79E-11
1570	ALL		255832.63	4090587.62	-1.41E-05	70YrCancerDer	-1.39E-05	-7.86E-08	-1.03E-08	-1.50E-10
3538	ALL		253235.84	4094437.63	-1.23E-05	70YrCancerDer	-1.23E-05	-9.43E-10	-1.32E-10	2.60E-11
3543	ALL		253152.53	4093731.25	-1.21E-05	70YrCancerDer	-1.21E-05	-1.27E-09	-1.76E-10	1.85E-11
2115	ALL		260229.85	4091431.99	-1.18E-05	70YrCancerDer	-1.18E-05	1.23E-09	7.50E-11	4.19E-11
2137	ALL		255766.81	4091104.17	-1.18E-05	70YrCancerDer	-1.17E-05	-3.22E-08	-4.22E-09	-5.62E-11
3347	ALL		253062.33	4094667.36	-1.06E-05	70YrCancerDer	-1.06E-05	-7.28E-10	-1.03E-10	2.83E-11
2117	ALL		258652.73	4090243.09	-1.02E-05	70YrCancerDer	-1.02E-05	-1.92E-09	-2.63E-10	1.71E-11
3345	ALL		255447.03	4095830	-9.76E-06	70YrCancerDer	-9.78E-06	3.16E-09	1.82E-10	4.96E-11
3346	ALL		252656.83	4094578.68	-9.70E-06	70YrCancerDer	-9.70E-06	-7.17E-10	-1.01E-10	2.34E-11
3397	ALL		251171.55	4096852.9	-9.45E-06	70YrCancerDer	-9.46E-06	-3.42E-10	-5.04E-11	2.45E-11
2106	ALL		258569.87	4093402.57	-9.25E-06	70YrCancerDer	-9.28E-06	6.52E-09	3.70E-10	6.75E-11
3376	ALL		251240.72	4097227.04	-8.78E-06	70YrCancerDer	-8.78E-06	2.38E-11	-1.17E-12	2.74E-11
2111	ALL		260485.14	4091885.77	-8.70E-06	70YrCancerDer	-8.72E-06	3.77E-09	2.15E-10	4.41E-11
3377	ALL		251249.29	4096232.42	-8.54E-06	70YrCancerDer	-8.54E-06	-3.93E-10	-5.66E-11	2.30E-11
3398	ALL		250632.42	4095903.03	-8.23E-06	70YrCancerDer	-8.24E-06	-6.99E-10	-9.78E-11	1.67E-11
2116	ALL		260170.59	4089741.74	-8.04E-06	70YrCancerDer	-8.04E-06	-6.53E-11	-1.35E-11	2.74E-11
3553	ALL		254155.09	4091588.73	-7.76E-06	70YrCancerDer	-7.75E-06	-4.07E-09	-5.48E-10	4.24E-12
3539	ALL		251766.75	4094654.45	-7.64E-06	70YrCancerDer	-7.64E-06	-7.86E-10	-1.09E-10	1.83E-11
3623	ALL		251559.69	4093847.75	-7.63E-06	70YrCancerDer	-7.63E-06	-1.39E-09	-1.90E-10	1.30E-11
3544	ALL		251715.05	4093725.91	-7.38E-06	70YrCancerDer	-7.38E-06	-1.40E-09	-1.91E-10	1.37E-11

REC	WATER_RISK	FISH_RISK	CROP_RISK	BEEF_RISK	DAIRY_RISK	PIG_RISK	CHICKEN_RISK	EGG_RISK	Population	Cancer Burden
3552	0.00E+00	0.00E+00	1.45E-09	0.00E+00	0.00E+00	-5.49E-12	-1.62E-12	-1.81E-12	0	0.00E+00
2105	0.00E+00	0.00E+00	2.86E-07	0.00E+00	0.00E+00	2.51E-11	3.58E-12	3.05E-12	1	-6.88E-05
3541	0.00E+00	0.00E+00	8.52E-09	0.00E+00	0.00E+00	-3.13E-12	-9.77E-13	-1.08E-12	0	0.00E+00
3542	0.00E+00	0.00E+00	7.29E-09	0.00E+00	0.00E+00	-2.62E-12	-8.36E-13	-9.19E-13	0	0.00E+00
3540	0.00E+00	0.00E+00	1.03E-08	0.00E+00	0.00E+00	-1.76E-12	-6.14E-13	-6.64E-13	19	-6.77E-04
3537	0.00E+00	0.00E+00	8.73E-09	0.00E+00	0.00E+00	-7.01E-13	-2.69E-13	-2.89E-13	0	0.00E+00
3551	0.00E+00	0.00E+00	6.67E-09	0.00E+00	0.00E+00	-7.46E-13	-2.84E-13	-3.04E-13	0	0.00E+00
3549	0.00E+00	0.00E+00	-7.42E-09	0.00E+00	0.00E+00	-3.07E-12	-8.92E-13	-1.00E-12	0	0.00E+00
2136	0.00E+00	0.00E+00	-1.05E-08	0.00E+00	0.00E+00	-4.03E-12	-1.17E-12	-1.31E-12	4	-6.02E-05
3535	0.00E+00	0.00E+00	1.58E-08	0.00E+00	0.00E+00	7.95E-13	7.84E-14	7.86E-14	0	0.00E+00
1570	0.00E+00	0.00E+00	-1.19E-07	0.00E+00	0.00E+00	-3.79E-11	-1.08E-11	-1.22E-11	2	-2.81E-05
3538	0.00E+00	0.00E+00	6.02E-09	0.00E+00	0.00E+00	-3.83E-13	-1.59E-13	-1.69E-13	0	0.00E+00
3543	0.00E+00	0.00E+00	3.73E-09	0.00E+00	0.00E+00	-5.73E-13	-2.01E-13	-2.19E-13	8	-9.67E-05
2115	0.00E+00	0.00E+00	1.35E-08	0.00E+00	0.00E+00	4.36E-13	2.17E-14	2.89E-14	2	-2.36E-05
2137	0.00E+00	0.00E+00	-4.77E-08	0.00E+00	0.00E+00	-1.55E-11	-4.44E-12	-5.00E-12	0	0.00E+00
3347	0.00E+00	0.00E+00	6.43E-09	0.00E+00	0.00E+00	-2.66E-13	-1.28E-13	-1.34E-13	0	0.00E+00
2117	0.00E+00	0.00E+00	1.78E-09	0.00E+00	0.00E+00	-8.94E-13	-2.92E-13	-3.22E-13	16	-1.63E-04
3345	0.00E+00	0.00E+00	1.67E-08	0.00E+00	0.00E+00	8.39E-13	8.30E-14	7.88E-14	0	0.00E+00
3346	0.00E+00	0.00E+00	5.29E-09	0.00E+00	0.00E+00	-2.77E-13	-1.23E-13	-1.30E-13	0	0.00E+00
3397	0.00E+00	0.00E+00	6.45E-09	0.00E+00	0.00E+00	-8.83E-14	-7.02E-14	-7.00E-14	0	0.00E+00
2106	0.00E+00	0.00E+00	2.35E-08	0.00E+00	0.00E+00	1.57E-12	1.84E-13	1.65E-13	79	-7.30E-04
3376	0.00E+00	0.00E+00	7.64E-09	0.00E+00	0.00E+00	1.02E-13	-1.88E-14	-1.20E-14	0	0.00E+00
2111	0.00E+00	0.00E+00	1.63E-08	0.00E+00	0.00E+00	9.26E-13	1.05E-13	9.48E-14	0	0.00E+00
3377	0.00E+00	0.00E+00	5.70E-09	0.00E+00	0.00E+00	-1.16E-13	-7.61E-14	-7.67E-14	0	0.00E+00
3398	0.00E+00	0.00E+00	3.80E-09	0.00E+00	0.00E+00	-2.92E-13	-1.16E-13	-1.24E-13	0	0.00E+00
2116	0.00E+00	0.00E+00	7.24E-09	0.00E+00	0.00E+00	5.56E-14	-3.03E-14	-2.65E-14	79	-6.35E-04
3553	0.00E+00	0.00E+00	-4.72E-09	0.00E+00	0.00E+00	-1.98E-12	-5.84E-13	-6.56E-13	0	0.00E+00
3539	0.00E+00	0.00E+00	3.65E-09	0.00E+00	0.00E+00	-3.27E-13	-1.29E-13	-1.38E-13	0	0.00E+00
3623	0.00E+00	0.00E+00	1.35E-09	0.00E+00	0.00E+00	-6.45E-13	-2.12E-13	-2.33E-13	0	0.00E+00
3544	0.00E+00	0.00E+00	1.32E-09	0.00E+00	0.00E+00	-6.45E-13	-2.13E-13	-2.34E-13	1	-7.38E-06

REC	GRP	NETID	X	Y	RISK_SUM	SCENARIO	INH_RISK	SOIL_RISK	DERMAL_RI	MMILK_RISI
3552	ALL		256232	4092917	-8.16E-05	70YrCancer	-8.15E-05	-2.03E-08	-2.75E-09	-2.15E-11
2105	ALL		256651.6	4094273	-6.91E-05	70YrCancer	-6.94E-05	4.66E-08	2.67E-09	2.61E-10
3541	ALL		255399.5	4093582	-5.85E-05	70YrCancer	-5.84E-05	-1.30E-08	-1.78E-09	1.22E-11
3542	ALL		255391.6	4093484	-4.88E-05	70YrCancer	-4.88E-05	-1.11E-08	-1.51E-09	1.97E-11
3540	ALL		255068.3	4094028	-3.57E-05	70YrCancer	-3.57E-05	-7.85E-09	-1.07E-09	4.15E-11
3537	ALL		254234	4094409	-2.20E-05	70YrCancer	-2.20E-05	-4.68E-09	-6.39E-10	2.79E-11
3551	ALL		255036.3	4093583	-1.54E-05	70YrCancer	-1.54E-05	-3.51E-09	-4.78E-10	3.07E-11
3549	ALL		255680.1	4091932	-1.52E-05	70YrCancer	-1.52E-05	-8.72E-09	-1.16E-09	-7.39E-12
2136	ALL		256220.6	4091641	-1.51E-05	70YrCancer	-1.51E-05	-1.04E-08	-1.38E-09	-1.10E-11
3535	ALL		256291.9	4095679	-1.42E-05	70YrCancer	-1.42E-05	-1.60E-09	-2.20E-10	2.81E-11
1570	ALL		255832.6	4090588	-1.41E-05	70YrCancer	-1.39E-05	-7.96E-08	-1.04E-08	-1.52E-10
3538	ALL		253235.8	4094438	-1.23E-05	70YrCancer	-1.23E-05	-2.80E-09	-3.82E-10	2.17E-11
3543	ALL		253152.5	4093731	-1.21E-05	70YrCancer	-1.21E-05	-3.14E-09	-4.27E-10	1.43E-11
2115	ALL		260229.9	4091432	-1.18E-05	70YrCancer	-1.19E-05	-1.69E-09	-2.34E-10	3.66E-11
2137	ALL		255766.8	4091104	-1.18E-05	70YrCancer	-1.17E-05	-3.36E-08	-4.40E-09	-5.93E-11
3347	ALL		253062.3	4094667	-1.07E-05	70YrCancer	-1.07E-05	-2.34E-09	-3.20E-10	2.46E-11
2117	ALL		258652.7	4090243	-1.02E-05	70YrCancer	-1.02E-05	-3.36E-09	-4.57E-10	1.38E-11
3345	ALL		255447	4095830	-9.79E-06	70YrCancer	-9.80E-06	-7.02E-10	-9.99E-11	4.10E-11
3346	ALL		252656.8	4094579	-9.71E-06	70YrCancer	-9.71E-06	-2.22E-09	-3.03E-10	2.00E-11
3397	ALL		251171.6	4096853	-9.47E-06	70YrCancer	-9.47E-06	-1.81E-09	-2.47E-10	2.12E-11
2106	ALL		258569.9	4093403	-9.29E-06	70YrCancer	-9.30E-06	1.25E-10	8.15E-12	5.19E-11
3376	ALL		251240.7	4097227	-8.79E-06	70YrCancer	-8.80E-06	-1.45E-09	-1.99E-10	2.40E-11
2111	ALL		260485.1	4091886	-8.74E-06	70YrCancer	-8.74E-06	-5.52E-10	-7.90E-11	3.37E-11
3377	ALL		251249.3	4096232	-8.55E-06	70YrCancer	-8.55E-06	-1.71E-09	-2.34E-10	2.00E-11
3398	ALL		250632.4	4095903	-8.25E-06	70YrCancer	-8.25E-06	-1.95E-09	-2.66E-10	1.39E-11
2116	ALL		260170.6	4089742	-8.05E-06	70YrCancer	-8.06E-06	-1.55E-09	-2.12E-10	2.40E-11
3553	ALL		254155.1	4091589	-7.78E-06	70YrCancer	-7.77E-06	-5.38E-09	-7.20E-10	1.29E-12
3539	ALL		251766.8	4094654	-7.65E-06	70YrCancer	-7.65E-06	-2.01E-09	-2.74E-10	1.55E-11
3623	ALL		251559.7	4093848	-7.65E-06	70YrCancer	-7.64E-06	-2.57E-09	-3.49E-10	1.03E-11
3544	ALL		251715.1	4093726	-7.39E-06	70YrCancer	-7.39E-06	-2.55E-09	-3.47E-10	1.11E-11

REC	WATER_RIS	FISH_RISK	CROP_RISK	BEEF_RISK	DAIRY_RISI	PIG_RISK	CHICKEN_F	EGG_RISK	Population	Cancer Burden
3552	0.00E+00	0.00E+00	-1.99E-08	0.00E+00	0.00E+00	-1.01E-11	-2.98E-12	-3.31E-12	0	0.00E+00
2105	0.00E+00	0.00E+00	1.75E-07	0.00E+00	0.00E+00	1.06E-11	1.22E-12	1.20E-12	1	-6.91E-05
3541	0.00E+00	0.00E+00	-5.73E-09	0.00E+00	0.00E+00	-6.43E-12	-1.94E-12	-2.14E-12	0	0.00E+00
3542	0.00E+00	0.00E+00	-4.56E-09	0.00E+00	0.00E+00	-5.44E-12	-1.66E-12	-1.83E-12	0	0.00E+00
3540	0.00E+00	0.00E+00	1.93E-09	0.00E+00	0.00E+00	-3.73E-12	-1.19E-12	-1.30E-12	19	-6.78E-04
3537	0.00E+00	0.00E+00	2.36E-09	0.00E+00	0.00E+00	-2.22E-12	-7.11E-13	-7.79E-13	0	0.00E+00
3551	0.00E+00	0.00E+00	3.01E-09	0.00E+00	0.00E+00	-1.62E-12	-5.38E-13	-5.86E-13	0	0.00E+00
3549	0.00E+00	0.00E+00	-1.08E-08	0.00E+00	0.00E+00	-4.26E-12	-1.24E-12	-1.39E-12	0	0.00E+00
2136	0.00E+00	0.00E+00	-1.34E-08	0.00E+00	0.00E+00	-5.08E-12	-1.47E-12	-1.65E-12	4	-6.03E-05
3535	0.00E+00	0.00E+00	7.47E-09	0.00E+00	0.00E+00	-6.80E-13	-2.67E-13	-2.77E-13	0	0.00E+00
1570	0.00E+00	0.00E+00	-1.20E-07	0.00E+00	0.00E+00	-3.84E-11	-1.09E-11	-1.23E-11	2	-2.81E-05
3538	0.00E+00	0.00E+00	2.14E-09	0.00E+00	0.00E+00	-1.30E-12	-4.27E-13	-4.67E-13	0	0.00E+00
3543	0.00E+00	0.00E+00	-9.97E-11	0.00E+00	0.00E+00	-1.50E-12	-4.72E-13	-5.19E-13	8	-9.69E-05
2115	0.00E+00	0.00E+00	7.71E-09	0.00E+00	0.00E+00	-7.03E-13	-2.78E-13	-2.95E-13	2	-2.37E-05
2137	0.00E+00	0.00E+00	-4.96E-08	0.00E+00	0.00E+00	-1.62E-11	-4.63E-12	-5.22E-12	0	0.00E+00
3347	0.00E+00	0.00E+00	3.04E-09	0.00E+00	0.00E+00	-1.07E-12	-3.62E-13	-3.94E-13	0	0.00E+00
2117	0.00E+00	0.00E+00	-1.30E-09	0.00E+00	0.00E+00	-1.61E-12	-5.01E-13	-5.54E-13	16	-1.63E-04
3345	0.00E+00	0.00E+00	9.94E-09	0.00E+00	0.00E+00	-1.98E-13	-1.37E-13	-1.36E-13	0	0.00E+00
3346	0.00E+00	0.00E+00	2.16E-09	0.00E+00	0.00E+00	-1.02E-12	-3.40E-13	-3.71E-13	0	0.00E+00
3397	0.00E+00	0.00E+00	3.39E-09	0.00E+00	0.00E+00	-8.16E-13	-2.82E-13	-3.05E-13	0	0.00E+00
2106	0.00E+00	0.00E+00	1.33E-08	0.00E+00	0.00E+00	2.46E-13	-3.17E-14	-1.21E-14	79	-7.34E-04
3376	0.00E+00	0.00E+00	4.56E-09	0.00E+00	0.00E+00	-6.29E-13	-2.32E-13	-2.49E-13	0	0.00E+00
2111	0.00E+00	0.00E+00	8.85E-09	0.00E+00	0.00E+00	-1.51E-13	-1.11E-13	-1.08E-13	0	0.00E+00
3377	0.00E+00	0.00E+00	2.97E-09	0.00E+00	0.00E+00	-7.69E-13	-2.67E-13	-2.88E-13	0	0.00E+00
3398	0.00E+00	0.00E+00	1.20E-09	0.00E+00	0.00E+00	-9.13E-13	-2.97E-13	-3.25E-13	0	0.00E+00
2116	0.00E+00	0.00E+00	4.08E-09	0.00E+00	0.00E+00	-6.79E-13	-2.45E-13	-2.64E-13	79	-6.36E-04
3553	0.00E+00	0.00E+00	-6.50E-09	0.00E+00	0.00E+00	-2.62E-12	-7.70E-13	-8.61E-13	0	0.00E+00
3539	0.00E+00	0.00E+00	1.11E-09	0.00E+00	0.00E+00	-9.35E-13	-3.06E-13	-3.35E-13	0	0.00E+00
3623	0.00E+00	0.00E+00	-1.11E-09	0.00E+00	0.00E+00	-1.23E-12	-3.83E-13	-4.23E-13	0	0.00E+00
3544	0.00E+00	0.00E+00	-1.07E-09	0.00E+00	0.00E+00	-1.22E-12	-3.81E-13	-4.20E-13	1	-7.39E-06

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HARP2 - HRACalc (dated 22118) 4/24/2026 4:34:02 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Population
Scenario: Cancer
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 70

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 0
2<16 Years Bin: 14
16<30 Years Bin: 0
16 to 70 Years Bin: 54

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: True
Fish: True
Homegrown crops: True
Beef: True
Dairy: True
Pig: True
Chicken: True
Egg: True

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
NOTE: The worker adjustment factors below are only used for cancer assessments. However, the GLC adjustment factor is also applied to 8-hr noncancer chronic assessments.

Worker adjustments factors enabled: YES
GLC adjustment factor: 2
Exposure frequency: 250

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: OFF

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
WATER PATHWAY SETTINGS

Surface area (m^2): 0
Volume (kg): 0
Volume changes per year: 0
Fraction from contaminated source: 0

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

****
FISH PATHWAY SETTINGS

Surface area (m^2): 0
Volume (kg): 0
Volume changes per year: 0
Fraction from contaminated source: 0

****
BEEF & DAIRY PATHWAY SETTINGS

Surface area (m^2): 0
Volume (kg): 0
Volume changes per year: 0

Beef
Fraction consumed from contaminated water source: 0
Fraction consumed of contaminated grazing: 0.5

Dairy
Fraction consumed from contaminated water source: 0
Fraction consumed of contaminated grazing: 0.5

****
PIG, CHICKEN, & EGG PATHWAY SETTINGS

Surface area (m^2): 0
Volume (kg): 0
Volume changes per year: 0

Pig
Fraction consumed from contaminated water source: 0
Fraction consumed of contaminated leafy crop: 0.25
Fraction consumed of contaminated exposed crop: 0.25
Fraction consumed of contaminated protected crop: 0.25
Fraction consumed of contaminated root crop: 0.25

Chicken
Fraction consumed from contaminated water source: 0
Fraction consumed of contaminated leafy crop: 0.25
Fraction consumed of contaminated exposed crop: 0.25
Fraction consumed of contaminated protected crop: 0.25
Fraction consumed of contaminated root crop: 0.25

Egg
Fraction consumed from contaminated water source: 0
Fraction consumed of contaminated leafy crop: 0.25
Fraction consumed of contaminated exposed crop: 0.25
Fraction consumed of contaminated protected crop: 0.25
Fraction consumed of contaminated root crop: 0.25

****
TIER 2 SETTINGS
Tier2 not used.

****

Calculating cancer risk
Cancer risk breakdown by pollutant and receptor saved to:
C:\HARP2\Rockfield\CANCERBURDEN\hra\Cancer_Burdenv0.5.3_Mitigated_CancerRisk.csv
Cancer risk total by receptor saved to:
C:\HARP2\Rockfield\CANCERBURDEN\hra\Cancer_Burdenv0.5.3_Mitigated_CancerRiskSumByRec.csv
HRA ran successfully

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<!--Created 2026/04/24 16:40:45-->
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Moderate8HR-->
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HARP2 - HRACalc (dated 22118) 4/24/2026 4:40:46 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Population
Scenario: Cancer
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 70

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 0
2<16 Years Bin: 14
16<30 Years Bin: 0
16 to 70 Years Bin: 54

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: True
Fish: True
Homegrown crops: True
Beef: True
Dairy: True
Pig: True
Chicken: True
Egg: True

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
NOTE: The worker adjustment factors below are only used for cancer assessments. However, the GLC adjustment factor is also applied to 8-hr noncancer chronic assessments.

Worker adjustments factors enabled: YES
GLC adjustment factor: 2
Exposure frequency: 250

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: OFF

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
WATER PATHWAY SETTINGS

Surface area (m^2): 0
Volume (kg): 0
Volume changes per year: 0
Fraction from contaminated source: 0

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

****
FISH PATHWAY SETTINGS

Surface area (m^2): 0
Volume (kg): 0
Volume changes per year: 0
Fraction from contaminated source: 0

****
BEEF & DAIRY PATHWAY SETTINGS

Surface area (m^2): 0
Volume (kg): 0
Volume changes per year: 0

Beef
Fraction consumed from contaminated water source: 0
Fraction consumed of contaminated grazing: 0.5

Dairy
Fraction consumed from contaminated water source: 0
Fraction consumed of contaminated grazing: 0.5

****
PIG, CHICKEN, & EGG PATHWAY SETTINGS

Surface area (m^2): 0
Volume (kg): 0
Volume changes per year: 0

Pig
Fraction consumed from contaminated water source: 0
Fraction consumed of contaminated leafy crop: 0.25
Fraction consumed of contaminated exposed crop: 0.25
Fraction consumed of contaminated protected crop: 0.25
Fraction consumed of contaminated root crop: 0.25

Chicken
Fraction consumed from contaminated water source: 0
Fraction consumed of contaminated leafy crop: 0.25
Fraction consumed of contaminated exposed crop: 0.25
Fraction consumed of contaminated protected crop: 0.25
Fraction consumed of contaminated root crop: 0.25

Egg
Fraction consumed from contaminated water source: 0
Fraction consumed of contaminated leafy crop: 0.25
Fraction consumed of contaminated exposed crop: 0.25
Fraction consumed of contaminated protected crop: 0.25
Fraction consumed of contaminated root crop: 0.25

****
TIER 2 SETTINGS
Tier2 not used.

****

Calculating cancer risk
Cancer risk breakdown by pollutant and receptor saved to:
C:\HARP2\Rockfield\CANCERBURDEN\hra\Cancer_Burdenv0.5.3_Project_CancerRisk.csv
Cancer risk total by receptor saved to:
C:\HARP2\Rockfield\CANCERBURDEN\hra\Cancer_Burdenv0.5.3_Project_CancerRiskSumByRec.csv
HRA ran successfully

APPENDIX I18 HARP EMISSION
ALLOCATIONS AND RESULTS

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Baseline Sink

	Timeframe	CAS#	Speciation	Baseline			
	Representing			NSNK		SSNK	
	Model Object Multiplier			-1		-1	
	Source Type			Quarry Site		Plant Site	
	Emission Type			(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Diesel	diesel PM10	9901	N/A	-5233.5	-0.8	-57.9	-0.1
Road Based Emissions	Aluminum	7429905	0.0150000	-1994.2	-0.7	-663.7	-0.6
	Arsenic	7440382	0.0000010	-0.1	-0.0	-0.0	-0.0
	Barium	7440393	0.0001450	-19.3	-0.0	-6.4	-0.0
	Beryllium	7440417	0.0000010	-0.1	-0.0	-0.0	-0.0
	Cadmium	7440439	0.0000010	-0.1	-0.0	-0.0	-0.0
	Chromium	7440473	0.0000250	-3.3	-0.0	-1.1	-0.0
	Copper	7440508	0.0000400	-5.3	-0.0	-1.8	-0.0
	Lead	7439921	0.0000300	-4.0	-0.0	-1.3	-0.0
	Manganese	7439965	0.0004900	-65.1	-0.0	-21.7	-0.0
	Nickel	7440020	0.0000207	-2.8	-0.0	-0.9	-0.0
	Selenium	7782492	0.0000010	-0.1	-0.0	-0.0	-0.0
	Silica, Crystalline	1175	0.1000000	-13294.5	-4.5	-4424.6	-3.9
	Zinc	7440666	0.0001120	-14.9	-0.0	-5.0	-0.0
Asphalt Plant Stack / Diesel Asphalt Plant Stack	PM10	85101	N/A	-	-	-	-
	CO	42101	N/A	-	-	-	-
	CO2	124389	N/A	-	-	-	-
	Nox	42603	N/A	-	-	-	-
	SO2	42401	N/A	-	-	-	-
	CH4	74828	N/A	-	-	-	-
	VOC	43104	N/A	-	-	-	-
	2-Methyl naphthalene	91576	N/A	-	-	-	-
	Acenaphthene	83329	N/A	-	-	-	-
	Acenaphthylene	208968	N/A	-	-	-	-
	Acetaldehyde	75070	N/A	-	-	-	-
	Anthracene	120127	N/A	-	-	-	-
	Arsenic	7440382	N/A	-	-	-	-
	Barium	7440393	N/A	-	-	-	-
	Benzene	71432	N/A	-	-	-	-
	Benzo(a)anthracene	56553	N/A	-	-	-	-
	Benzo(a)pyrene	50328	N/A	-	-	-	-
	Benzo(b)fluoranthene	205992	N/A	-	-	-	-
	Benzo(g,h,i)perylene	191242	N/A	-	-	-	-
	Benzo(k)fluoranthene	207089	N/A	-	-	-	-
	Beryllium	7440417	N/A	-	-	-	-
	Cadmium	7440439	N/A	-	-	-	-
	Chromium	7440473	N/A	-	-	-	-
	Chrysene	218019	N/A	-	-	-	-
	Copper	7440508	N/A	-	-	-	-
	Crotonaldehyde	4170303	N/A	-	-	-	-
	Dibenz(a,h)anthracene	53703	N/A	-	-	-	-

Table - Project Year 0 - 30 Future Source

	Timeframe	CAS#	Speciation						
	Model Object Multiplier			SRD1		SPLNT		SPILE	
	Representing			South Road		South Agg Plant		South Pile	
	Source Type								
	Emission Type		N/A	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Diesel	diesel PM10	9901	1	26.6	0.0				
Road Based Emissions	Aluminum	7429905	0.0150000	767.7	0.8				
	Arsenic	7440382	0.0000010	0.1	0.0				
	Barium	7440393	0.0001450	7.4	0.0				
	Beryllium	7440417	0.0000010	0.1	0.0				
	Cadmium	7440439	0.0000010	0.1	0.0				
	Chromium	7440473	0.0000250	1.3	0.0				
	Copper	7440508	0.0000400	2.0	0.0				
	Lead	7439921	0.0000300	1.5	0.0				
	Manganese	7439965	0.0004900	25.1	0.0				
	Nickel	7440020	0.0000207	1.1	0.0				
	Selenium	7782492	0.0000010	0.1	0.0				
	Silica, Crystalline	1175	0.1000000	5,117.8	5.4				
	Zinc	7440666	0.0001120	5.7	0.0				
Asphalt Plant Stack	PM10	85101	N/A						
	CO	42101	N/A						
	CO2	124389	N/A						
	Nox	42603	N/A						
	SO2	42401	N/A						
	CH4	74828	N/A						
	VOC	43104	N/A						
	2,2,4-Trimethylpentane	540841	N/A						
	2-Methyl naphthalene	91576	N/A						
	Acenaphthene	83329	N/A						
	Acenaphthylene	208968	N/A						
	Anthracene	120127	N/A						
	Antimony	7440360	N/A						
	Arsenic	7440382	N/A						
	Barium	7440393	N/A						
	Benzene	71432	N/A						
	Benzo(a)anthracene	56553	N/A						
	Benzo(a)pyrene	50328	N/A						
	Benzo(b)fluoranthene	205992	N/A						
	Benzo(g,h,i)perylene	191242	N/A						
	Benzo(k)fluoranthene	207089	N/A						
	Cadmium	7440439	N/A						
	Chromium	7440473	N/A						
	Chrysene	218019	N/A						
	Cobalt	7440484	N/A						
	Copper	7440508	N/A						
	Ethylbenzene	100414	N/A						

Baseline Sink

	Timeframe	CAS#	Speciation	Baseline			
	Representing			NSNK		SSNK	
	Model Object Multiplier			-1		-1	
	Source Type			Quarry Site		Plant Site	
	Emission Type			(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Baseline	Ethylbenzene	100414	N/A	-	-	-	-
	Fluorene	86737	N/A	-	-	-	-
	Fluoranthene	206440	N/A	-	-	-	-
	Formaldehyde	50000	N/A	-	-	-	-
	Hexvalent Chromium	18540299	N/A	-	-	-	-
	Indeno(1,2,3-cd)pyrene	193395	N/A	-	-	-	-
	Isobutyraldehyde	78842	N/A	-	-	-	-
	Lead	7439921	N/A	-	-	-	-
	Manganese	7439965	N/A	-	-	-	-
	Mercury	7439976	N/A	-	-	-	-
	Naphthalene	91203	N/A	-	-	-	-
	Nickel	7440020	N/A	-	-	-	-
	Phenanthrene	85018	N/A	-	-	-	-
	Pyrene	129000	N/A	-	-	-	-
	Quinone	106514	N/A	-	-	-	-
	Selenium	7782492	N/A	-	-	-	-
	Toluene	108883	N/A	-	-	-	-
	Xylene (mixed xylenes)	1330207	N/A	-	-	-	-
	Zinc	7440666	N/A	-	-	-	-
Cement Based Fugitive Emissions	Aluminum	7429905	0.0160000	-	-	-6.1	-0.0
	Arsenic	7440382	0.0000220	-	-	-0.0	-0.0
	Beryllium	7440417	0.0000010	-	-	-0.0	-0.0
	Cadmium	7440439	0.0000010	-	-	-0.0	-0.0
	Chromium total	7440473	0.0000580	-	-	-0.0	-0.0
	Copper	7440508	0.0000300	-	-	-0.0	-0.0
	Hexavalent Chromium	18540299	0.0000050	-	-	-0.0	-0.0
	Lead	7439921	0.0000120	-	-	-0.0	-0.0
	Manganese	7439965	0.0004000	-	-	-0.2	-0.0
	Nickel	7440020	0.0000250	-	-	-0.0	-0.0
	Selenium	7782492	0.0000010	-	-	-0.0	-0.0
	Zinc	7440666	0.0000920	-	-	-0.0	-0.0
Aggregates Processing Fugitive Emissions	Aluminum	7429905	0.0150000	-498.9	-0.1	-70.0	-0.0
	Arsenic	7440382	0.0000010	-0.0	-0.0	-0.0	-0.0
	Barium	7440393	0.0002250	-7.5	-0.0	-1.0	-0.0
	Beryllium	7440417	0.0000010	-0.0	-0.0	-0.0	-0.0
	Cadmium	7440439	0.0000010	-0.0	-0.0	-0.0	-0.0
	Chromium	7440473	0.0000280	-0.9	-0.0	-0.1	-0.0
	Cobalt	7440484	0.0000110	-0.4	-0.0	-0.1	-0.0
	Copper	7440508	0.0000370	-1.2	-0.0	-0.2	-0.0
	Hexavalent Chromium!	18540299	0.0000003	-0.0	-0.0	-0.0	-0.0
	Lead	7439921	0.0000500	-1.7	-0.0	-0.2	-0.0
	Manganese	7439965	0.0005300	-17.6	-0.0	-2.5	-0.0
	Nickel	7440020	0.0000207	-0.7	-0.0	-0.1	-0.0
	Respirable Silica*	1175	0.0638063	-2122.3	-0.6	-297.7	-0.1
	Selenium	7782492	0.0000010	-0.0	-0.0	-0.0	-0.0
	Zinc	7440666	0.0000990	-3.3	-0.0	-0.5	-0.0

Table - Project Year 0 - 30 Future Source

	Timeframe	CAS#	Speciation						
	Model Object Multiplier			SRD1		SPLNT		SPILE	
	Representing			South Road		South Agg Plant		South Pile	
	Source Type								
	Emission Type		N/A	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Future	Ethylene	74851	N/A						
	Fluorene	86737	N/A						
	Fluoranthene	206440	N/A						
	Formaldehyde	50000	N/A						
	Hexane	110543	N/A						
	Hexvalent Chromium	18540299	N/A						
	Indeno(1,2,3-cd)pyrene	193395	N/A						
	Lead	7439921	N/A						
	Manganese	7439965	N/A						
	Mercury	7439976	N/A						
	Methyl Chloroform	71556	N/A						
	Naphthalene	91203	N/A						
	Nickel	7440020	N/A						
	Perylene	198550	N/A						
	Phenanthrene	85018	N/A						
	Phosphorus	7723140	N/A						
	Pyrene	129000	N/A						
	Selenium	7782492	N/A						
	Silver	7440224	N/A						
	Thallium	7440280	N/A						
	Toluene	108883	N/A						
	Xylene (mixed xylenes)	1330207	N/A						
	Zinc	7440666	N/A						
Cement Based Fugitive Emissions	Aluminum	7429905	0.0160000						
	Arsenic	7440382	0.0000220						
	Beryllium	7440417	0.0000010						
	Cadmium	7440439	0.0000010						
	Chromium total	7440473	0.0000580						
	Copper	7440508	0.0000300						
	Hexavalent Chromium	18540299	0.0000050						
	Lead	7439921	0.0000120						
	Manganese	7439965	0.0004000						
	Nickel	7440020	0.0000250						
	Selenium	7782492	0.0000010						
	Zinc	7440666	0.0000920						
Aggregates Processing Fugitive Emissions	Aluminum	7429905	0.0150000			32.7	0.0		
	Arsenic	7440382	0.0000010			0.0	0.0		
	Barium	7440393	0.0002250			0.5	0.0		
	Beryllium	7440417	0.0000010			0.0	0.0		
	Cadmium	7440439	0.0000010			0.0	0.0		
	Chromium	7440473	0.0000280			0.1	0.0		
	Cobalt	7440484	0.0000110			0.0	0.0		
	Copper	7440508	0.0000370			0.1	0.0		
	Hexavalent Chromium!	18540299	0.0000003			0.0	0.0		
	Lead	7439921	0.0000500			0.1	0.0		
	Manganese	7439965	0.0005300			1.2	0.0		
	Nickel	7440020	0.0000207			0.0	0.0		
	Respirable Silica*	1175	0.0638063			138.9	0.1		
	Selenium	7782492	0.0000010			0.0	0.0		
	Zinc	7440666	0.0000990			0.2	0.0		

Baseline Sink

	Timeframe	CAS#	Speciation	Baseline			
	Representing			NSNK		SSNK	
	Model Object Multiplier			-1		-1	
	Source Type			Quarry Site		Plant Site	
	Emission Type			(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Asphalt Fugitive Emissions	Aluminum	7429905	0.1103920	0	0	-4.294	-0.03947
	Ammonia	7664417	0.0003390	0	0	-0.013	-0.00012
	Antimony	7440360	0.0001000	0	0	-0.004	-0.00004
	Barium	7440393	0.0009970	0	0	-0.039	-0.00036
	Bromine	7726956	0.0000210	0	0	-0.001	-0.00001
	Chlorine	7782505	0.0008610	0	0	-0.033	-0.00031
	Chromium	7440473	0.0000560	0	0	-0.002	-0.00002
	Copper	7440508	0.0000660	0	0	-0.003	-0.00002
	Hexavalent Chromium**	18540299	0.0000028	0	0	0.000	0.00000
	Lead	7439921	0.0000080	0	0	0.000	0.00000
	Manganese	7439965	0.0006620	0	0	-0.026	-0.00024
	Mercury	7439976	0.0000070	0	0	0.000	0.00000
	Nickel	7440020	0.0000170	0	0	-0.001	-0.00001
	Phosphorus	7723140	0.0011300	0	0	-0.044	-0.00040
	Selenium	7782492	0.0000020	0	0	0.000	0.00000
	Sulfates	9960	0.0021810	0	0	-0.085	-0.00078
	Thallium	7440280	0.0000130	0	0	-0.001	0.00000
	Vanadium	7440622	0.0000180	0	0	-0.001	-0.00001
	Zinc	7440666	0.0000560	0	0	-0.002	-0.00002
Storage Fugitive Emissions	Arsenic	7440382	0.0000010			-0.012	-0.000001
	Beryllium	7440417	0.0000010			-0.012	-0.000001
	Cadmium	7440439	0.0000010			-0.012	-0.000001
	Chromium	7440473	0.0000500			-0.577	-0.000066
	Copper	7440508	0.0001000			-1.154	-0.000132
	Hexavalent Chromium**	18540299	0.0000003			-0.003	0.000000
	Lead	7439921	0.0000500			-0.577	-0.000066
	Manganese	7439965	0.0005000			-5.771	-0.000659
	Nickel	7440020	0.0000207			-0.239	-0.000027
	Selenium	7782492	0.0000050			-0.058	-0.000007
	Zinc	7440666	0.0002000			-2.308	-0.000264

Table - Project Year 0 - 30 Future Source

	Timeframe	CAS#	Speciation						
	Model Object Multiplier			SRD1		SPLNT		SPILE	
	Representing			South Road		South Agg Plant		South Pile	
	Source Type								
	Emission Type		N/A	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Asphalt Fugitive Emissions	Aluminum	7429905	0.1103920						
	Ammonia	7664417	0.0003390						
	Antimony	7440360	0.0001000						
	Barium	7440393	0.0009970						
	Bromine	7726956	0.0000210						
	Chlorine	7782505	0.0008610						
	Chromium	7440473	0.0000560						
	Copper	7440508	0.0000660						
	Hexavalent Chromium**	18540299	0.0000028						
	Lead	7439921	0.0000080						
	Manganese	7439965	0.0006620						
	Mercury	7439976	0.0000070						
	Nickel	7440020	0.0000170						
	Phosphorus	7723140	0.0011300						
	Selenium	7782492	0.0000020						
	Sulfates	9960	0.0021810						
	Thallium	7440280	0.0000130						
	Vanadium	7440622	0.0000180						
	Zinc	7440666	0.0000560						
Storage Fugitive Emissions	Arsenic	7440382	0.0000010					0.0	0.0
	Beryllium	7440417	0.0000010					0.0	0.0
	Cadmium	7440439	0.0000010					0.0	0.0
	Chromium	7440473	0.0000500					0.1	0.0
	Copper	7440508	0.0001000					0.2	0.0
	Hexavalent Chromium**	18540299	0.0000003					0.0	0.0
	Lead	7439921	0.0000500					0.1	0.0
	Manganese	7439965	0.0005000					1.0	0.0
	Nickel	7440020	0.0000207					0.0	0.0
	Selenium	7782492	0.0000050					0.0	0.0
	Zinc	7440666	0.0002000					0.4	0.0

a - Mine emissions are split into multiple mine volume sources. See report Table 16.

Road Dust Emissions From San Diego Air Pollution Control District "Haul Roads, Mineral Industry Sites, Paved and Unpaved, Default Trace Metal Composition"
https://www.sdapcd.org/content/dam/sdc/apcd/PDF/Misc/APCD_Haul_Road_Mineral_Industry_Sites_Paved_Unpaved.pdf

The emission factors for cement and flyash are from the table, "DEFAULT VALUES - TRACE METAL CONCENTRATIONS" in the 1998 San Diego Air Pollution Control District document, Concrete Batch Plant Operations.Speciation profiles are derived from sampling of local concrete batch plants.

Aggregates Emission Factors:
*The emission factors are from the table, "DEFAULT VALUES - TRACE METAL CONCENTRATIONS" in the November 1998 San Diego Air Pollution Control District document, Aggregate Crushing Operations.
Pollutants required for toxic reporting: TACs w/o Risk Factor Current as of update date
!5% of Chromium considered Hexavalent Chromium (District Policy).
*The emission factor is derived from ratio of Silica PM4 to PM10 in the 2009 technical paper from the Journal of Air and Waste Management Association (JAWA), PM4 Crystalline Silica Emission Factors and Ambient Concentrations at Aggregate-Producing Sources in California. The average of the equipment data

Stockpile Emissions
The emission factors are from the table, "DEFAULT VALUES - Material Storage" in the December 1998 San Diego Air Pollution Control District document, *Open Material Storage Areas*.
Pollutants required for toxic reporting: TACs w/o Risk Factor Current as of update date
! 5% assumption of 50 e-6 of Non Hexavalent Chromium, crystalline silica listed as TAC in source document but not included due too respirable amount being indeterminate

Asphalt Dust Fugitive Emissions
Emission factors are derived from a 1997 dust profile (#4082), from EPA Speciate 4.0, test data from a Mexico City Asphalt Plant.
Pollutants required for toxic reporting: TACs w/o Risk Factor. Current as of update date.
Since the amount of silica that is respirable (PM4) is indeterminate, the silica will be considered a Non-TAC (District Policy).
 **5% of Chromium considered Hexavalent Chromium (District Policy).

Table - Project Year 0 - 30 Fu

Timeframe	Future																					
Model Object Multiplier	SRMPT		SAPLT		SASTK		SMINE		NRD3		NASTK		NAPLNT		NMPLNT		NPLNT		NPILE		NMINE (a)	
Representing	South RM Plant		South Asphalt Plant		South Asphalt Stack		South Mine		North Road 3		North Asphalt Stack		North Asphalt Plant		North Readymix		North Agg. Plant		North Storage		North Mine	
Source Type	Plant Site								Quarry Site													
Emission Type	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
diesel PM10			67.4	0.1			24.1	0.0	47.1	0.0											238.6	0.0
Aluminum									1,429.4	0.6												
Arsenic									0.1	0.0												
Barium									13.8	0.0												
Beryllium									0.1	0.0												
Cadmium									0.1	0.0												
Chromium									2.4	0.0												
Copper									3.8	0.0												
Lead									2.9	0.0												
Manganese									46.7	0.0												
Nickel									2.0	0.0												
Selenium									0.1	0.0												
Silica, Crystalline									9,529.5	3.9												
Zinc									10.7	0.0												
PM10					1,244.3	1.2																
CO					65,000.0	65.0																
CO2					16,500,000.0	16,500.0																
Nox					4,371.4	4.4																
SO2					1,700.0	1.7																
CH4					6,000.0	6.0																
VOC					4,100.0	4.1																
2,2,4-Trimethylpentane					2.2	0.0																
2-Methyl naphthalene					4.0	0.0																
Acenaphthene					0.1	0.0																
Acenaphthylene					0.5	0.0																
Anthracene					0.0	0.0																
Antimony					0.0	0.0																
Arsenic					0.0	0.0																
Barium					0.3	0.0																
Benzene					21.1	0.0																
Benzo(a)anthracene					0.0	0.0																
Benzo(a)pyrene					0.0	0.0																
Benzo(b)fluoranthene					0.0	0.0																
Benzo(g,h,i)perylene					0.0	0.0																
Benzo(k)fluoranthene					0.0	0.0																
Cadmium					0.0	0.0																
Chromium					0.3	0.0																
Chrysene					0.0	0.0																
Cobalt					0.0	0.0																
Copper					0.2	0.0																
Ethylbenzene					13.0	0.0																

Table - Project Year 0 - 30 Fu

Timeframe	Future																					
Model Object Multiplier	SRMPT		SAPLT		SASTK		SMINE		NRD3		NASTK		NAPLNT		NMPLNT		NPLNT		NPILE		NMINE (a)	
Representing	South RM Plant		South Asphalt Plant		South Asphalt Stack		South Mine		North Road 3		North Asphalt Stack		North Asphalt Plant		North Readymix		North Agg. Plant		North Storage		North Mine	
Source Type	Plant Site								Quarry Site													
Emission Type	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Ethylene					378.7	0.4																
Fluorene					0.2	0.0																
Fluoranthene					0.0	0.0																
Formaldehyde					167.7	0.2																
Hexane					49.8	0.0																
Hexvalent Chromium					0.0	0.0																
Indeno(1,2,3-cd)pyrene					0.0	0.0																
Lead					0.0	0.0																
Manganese					0.4	0.0																
Mercury					0.0	0.0																
Methyl Chloroform					2.6	0.0																
Naphthalene					4.9	0.0																
Nickel					3.4	0.0																
Perylene					0.0	0.0																
Phenanthrene					0.4	0.0																
Phosphorus					1.5	0.0																
Pyrene					0.0	0.0																
Selenium					0.0	0.0																
Silver					0.0	0.0																
Thallium					0.0	0.0																
Toluene					8.1	0.0																
Xylene (mixed xylenes)					10.8	0.0																
Zinc					3.3	0.0																
Aluminum	9.7	0.0													9.7	0.0						
Arsenic	0.0	0.0													0.0	0.0						
Beryllium	0.0	0.0													0.0	0.0						
Cadmium	0.0	0.0													0.0	0.0						
Chromium total	0.0	0.0													0.0	0.0						
Copper	0.0	0.0													0.0	0.0						
Hexavalent Chromium	0.0	0.0													0.0	0.0						
Lead	0.0	0.0													0.0	0.0						
Manganese	0.2	0.0													0.2	0.0						
Nickel	0.0	0.0													0.0	0.0						
Selenium	0.0	0.0													0.0	0.0						
Zinc	0.1	0.0													0.1	0.0						
Aluminum							0.8	0.1									159.4	0.1			190.4	0.4
Arsenic							0.0	0.0									0.0	0.0			0.0	0.0
Barium							0.0	0.0									2.4	0.0			2.9	0.0
Beryllium							0.0	0.0									0.0	0.0			0.0	0.0
Cadmium							0.0	0.0									0.0	0.0			0.0	0.0
Chromium							0.0	0.0									0.3	0.0			0.4	0.0
Cobalt							0.0	0.0									0.1	0.0			0.1	0.0
Copper							0.0	0.0									0.4	0.0			0.5	0.0
Hexavalent Chromium!							0.0	0.0									0.0	0.0			0.0	0.0
Lead							0.0	0.0									0.5	0.0			0.6	0.0
Manganese							0.0	0.0									5.6	0.0			6.7	0.0
Nickel							0.0	0.0									0.2	0.0			0.3	0.0
Respirable Silica*							3.2	0.2									678.2	0.3			810.0	1.6
Selenium							0.0	0.0									0.0	0.0			0.0	0.0
Zinc							0.0	0.0									1.1	0.0			1.3	0.0

Table - Project Year 0 - 30 Fu

Timeframe	Future																					
Model Object Multiplier	SRMPT		SAPLT		SASTK		SMINE		NRD3		NASTK		NAPLNT		NMPLNT		NPLNT		NPILE		NMINE (a)	
Representing	South RM Plant		South Asphalt Plant		South Asphalt Stack		South Mine		North Road 3		North Asphalt Stack		North Asphalt Plant		North Readymix		North Agg. Plant		North Storage		North Mine	
Source Type	Plant Site								Quarry Site													
Emission Type	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Aluminum			85.4	0.1																		
Ammonia			0.3	0.0																		
Antimony			0.1	0.0																		
Barium			0.8	0.0																		
Bromine			0.0	0.0																		
Chlorine			0.7	0.0																		
Chromium			0.0	0.0																		
Copper			0.1	0.0																		
Hexavalent Chromium**			0.0	0.0																		
Lead			0.0	0.0																		
Manganese			0.5	0.0																		
Mercury			0.0	0.0																		
Nickel			0.0	0.0																		
Phosphorus			0.9	0.0																		
Selenium			0.0	0.0																		
Sulfates			1.7	0.0																		
Thallium			0.0	0.0																		
Vanadium			0.0	0.0																		
Zinc			0.0	0.0																		
Arsenic																			0.0	0.0		
Beryllium																			0.0	0.0		
Cadmium																			0.0	0.0		
Chromium																			1.0	0.0		
Copper																			2.0	0.0		
Hexavalent Chromium**																			0.0	0.0		
Lead																			1.0	0.0		
Manganese																			9.9	0.0		
Nickel																			0.4	0.0		
Selenium																			0.1	0.0		
Zinc																			4.0	0.0		

ent, Concrete Batch Plant Ope

gate Crushing Operations.

e Silica Emission Factors and A from the Vernalis plant in Tracy was used.

Areas .

Baseline Sink

	Timeframe	CAS#	Speciation	Baseline			
				NSNK		SSNK	
	Representing Model Object Multiplier			-1		-1	
	Source Type			Quarry Site		Plant Site	
	Emission Type			(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Diesel	diesel PM10	9901	N/A	-5,233.524	-0.810	-57.871	-0.051
Road Based Emissions	Aluminum	7429905	0.015	-1,994.2	-0.674	-663.692	-0.583
	Arsenic	7440382	0.000001	-0.1	0.000	-0.044	0.000
	Barium	7440393	0.000145	-19.3	-0.007	-6.416	-0.006
	Beryllium	7440417	0.000001	-0.1	0.000	-0.044	0.000
	Cadmium	7440439	0.000001	-0.1	0.000	-0.044	0.000
	Chromium	7440473	0.000025	-3.3	-0.001	-1.106	-0.001
	Copper	7440508	0.00004	-5.3	-0.002	-1.770	-0.002
	Lead	7439921	0.00003	-4.0	-0.001	-1.327	-0.001
	Manganese	7439965	0.00049	-65.1	-0.022	-21.681	-0.019
	Nickel	7440020	0.0000207	-2.8	-0.001	-0.916	-0.001
	Selenium	7782492	0.000001	-0.1	0.000	-0.044	0.000
	Silica, Crystalline	1175	0.1	-13,294.5	-4.491	-4,424.610	-3.889
	Zinc	7440666	0.000112	-14.9	-0.005	-4.956	-0.004
Diesel Asphalt Plant Stack	PM10	85101	N/A	0.0	0.0	0.000	0.000
	CO	42101	N/A	0.0	0.0	0.000	0.000
	CO2	124389	N/A	0.0	0.0	0.000	0.000
	Nox	42603	N/A	0.0	0.0	0.000	0.000
	SO2	42401	N/A	0.0	0.0	0.000	0.000
	CH4	74828	N/A	0.0	0.0	0.000	0.000
	VOC	43104	N/A	0.0	0.0	0.000	0.000
	2-Methyl naphthalene	91576	N/A	0.0	0.0	0.000	0.000
	Acenaphthene	83329	N/A	0.0	0.0	0.000	0.000
	Acenaphthylene	208968	N/A	0.0	0.0	0.000	0.000
	Acetaldehyde	75070	N/A	0.0	0.0	0.000	0.000
	Anthracene	120127	N/A	0.0	0.0	0.000	0.000
	Arsenic	7440382	N/A	0.0	0.0	0.000	0.000
	Barium	7440393	N/A	0.0	0.0	0.000	0.000
	Benzene	71432	N/A	0.0	0.0	0.000	0.000
	Benzo(a)anthracene	56553	N/A	0.0	0.0	0.000	0.000
	Benzo(a)pyrene	50328	N/A	0.0	0.0	0.000	0.000
	Benzo(b)fluoranthene	205992	N/A	0.0	0.0	0.000	0.000
	Benzo(g,h,i)perylene	191242	N/A	0.0	0.0	0.000	0.000
	Benzo(k)fluoranthene	207089	N/A	0.0	0.0	0.000	0.000
	Beryllium	7440417	N/A	0.0	0.0	0.000	0.000
	Cadmium	7440439	N/A	0.0	0.0	0.000	0.000
	Chromium	7440473	N/A	0.0	0.0	0.000	0.000
	Chrysene	218019	N/A	0.0	0.0	0.000	0.000
	Copper	7440508	N/A	0.0	0.0	0.000	0.000

Project Years 31 - 100 Future Source

	Timeframe	CAS#	Speciation								
	Model Object Multiplier			SRD1		SPLNT		SPILE		SMINE	
	Representing			South Road		South Agg Plant		South Pile		South Mine	
	Source Type			Plant Site							
	Emission Type		N/A	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Diesel	diesel PM10	9901	1	0.00000	0.00000					0.000	0.000
Road Based Emissions	Aluminum	7429905	0.015	0.0	0.000						
	Arsenic	7440382	0.000001	0.0	0.000						
	Barium	7440393	0.000145	0.0	0.000						
	Beryllium	7440417	0.000001	0.0	0.000						
	Cadmium	7440439	0.000001	0.0	0.000						
	Chromium	7440473	0.000025	0.0	0.000						
	Copper	7440508	0.00004	0.0	0.000						
	Lead	7439921	0.00003	0.0	0.000						
	Manganese	7439965	0.00049	0.0	0.000						
	Nickel	7440020	0.0000207	0.0	0.000						
	Selenium	7782492	0.000001	0.0	0.000						
	Silica, Crystalline	1175	0.1	0.0	0.000						
	Zinc	7440666	0.000112	0.0	0.000						
Diesel Asphalt Plant Stack	PM10	85101	N/A								
	CO	42101	N/A								
	CO2	124389	N/A								
	Nox	42603	N/A								
	SO2	42401	N/A								
	CH4	74828	N/A								
	VOC	43104	N/A								
	2,2,4-Trimethylpentane	540841	N/A								
	2-Methyl naphthalene	91576	N/A								
	Acenaphthene	83329	N/A								
	Acenaphthylene	208968	N/A								
	Anthracene	120127	N/A								
	Antimony	7440360	N/A								
	Arsenic	7440382	N/A								
	Barium	7440393	N/A								
	Benzene	71432	N/A								
	Benzo(a)anthracene	56553	N/A								
	Benzo(a)pyrene	50328	N/A								
	Benzo(b)fluoranthene	205992	N/A								
	Benzo(g,h,i)perylene	191242	N/A								
	Benzo(k)fluoranthene	207089	N/A								
	Cadmium	7440439	N/A								
	Chromium	7440473	N/A								
	Chrysene	218019	N/A								
	Cobalt	7440484	N/A								

Baseline Sink

	Timeframe	CAS#	Speciation	Baseline			
	Representing			NSNK		SSNK	
	Model Object Multiplier			-1		-1	
	Source Type			Quarry Site		Plant Site	
	Emission Type			(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Baseline D	Crotonaldehyde	4170303	N/A	0.0	0.0	0.000	0.000
	Dibenz(a,h)anthracene	53703	N/A	0.0	0.0	0.000	0.000
	Ethylbenzene	100414	N/A	0.0	0.0	0.000	0.000
	Fluorene	86737	N/A	0.0	0.0	0.000	0.000
	Fluoranthene	206440	N/A	0.0	0.0	0.000	0.000
	Formaldehyde	50000	N/A	0.0	0.0	0.000	0.000
	Hexvalent Chromium	18540299	N/A	0.0	0.0	0.000	0.000
	Indeno(1,2,3-cd)pyrene	193395	N/A	0.0	0.0	0.000	0.000
	Isobutyraldehyde	78842	N/A	0.0	0.0	0.000	0.000
	Lead	7439921	N/A	0.0	0.0	0.000	0.000
	Manganese	7439965	N/A	0.0	0.0	0.000	0.000
	Mercury	7439976	N/A	0.0	0.0	0.000	0.000
	Naphthalene	91203	N/A	0.0	0.0	0.000	0.000
	Nickel	7440020	N/A	0.0	0.0	0.000	0.000
	Phenanthrene	85018	N/A	0.0	0.0	0.000	0.000
	Pyrene	129000	N/A	0.0	0.0	0.000	0.000
	Quinone	106514	N/A	0.0	0.0	0.000	0.000
	Selenium	7782492	N/A	0.0	0.0	0.000	0.000
	Toluene	108883	N/A	0.0	0.0	0.000	0.000
	Xylene (mixed xylenes)	1330207	N/A	0.0	0.0	0.000	0.000
	Zinc	7440666	N/A	0.0	0.0	0.000	0.000
Cement Based Fugitive Emissions	Aluminum	7429905	0.016	0.0	0.0	-6.097383744	-0.00611186
	Arsenic	7440382	0.000022	0.0	0.0	-0.008383903	-0.00000840
	Beryllium	7440417	0.000001	0.0	0.0	-0.000381086	-0.00000038
	Cadmium	7440439	0.000001	0.0	0.0	-0.000381086	-0.00000038
	Chromium total	7440473	0.000058	0.0	0.0	-0.022103016	-0.00002216
	Copper	7440508	0.00003	0.0	0.0	-0.011432595	-0.00001146
	Hexavalent Chromium	18540299	0.000005	0.0	0.0	-0.001905432	-0.00000191
	Lead	7439921	0.000012	0.0	0.0	-0.004573038	-0.00000458
	Manganese	7439965	0.0004	0.0	0.0	-0.152434594	-0.00015280
	Nickel	7440020	0.000025	0.0	0.0	-0.009527162	-0.00000955
	Selenium	7782492	0.000001	0.0	0.0	-0.000381086	-0.00000038
	Zinc	7440666	0.000092	0.0	0.0	-0.035059957	-0.00003514
Aggregates Processing Fugitive Emissions	Aluminum	7429905	0.015	-499	-0.1500	-70	-0.02
	Arsenic	7440382	0.000001	0	0.0000	0	0.00
	Barium	7440393	0.000225	-7	-0.0022	-1	0.00
	Beryllium	7440417	0.000001	0	0.0000	0	0.00
	Cadmium	7440439	0.000001	0	0.0000	0	0.00
	Chromium	7440473	0.000028	-1	-0.0003	0	0.00
	Cobalt	7440484	0.000011	0	-0.0001	0	0.00
	Copper	7440508	0.000037	-1	-0.0004	0	0.00
	Hexavalent Chromium!	18540299	0.00000025	0	0.0000	0	0.00
	Lead	7439921	0.00005	-2	-0.0005	0	0.00
	Manganese	7439965	0.00053	-18	-0.0053	-2	0.00
	Nickel	7440020	0.0000207	-1	-0.0002	0	0.00
	Respirable Silica**	1175	0.063806346	-2,122	-0.6379	-298	-0.09
	Selenium	7782492	0.000001	0	0.0000	0	0.00
	Zinc	7440666	0.000099	-3	-0.0010	0	0.00

	Aluminum	7429905	0.110392	0	0	-4.3	-0.03947

Project Years 31 - 100 Future Source

	Timeframe	CAS#	Speciation										
	Model Object Multiplier			SRD1		SPLNT		SPILE		SMINE			
	Representing			South Road		South Agg Plant		South Pile		South Mine			
	Source Type			Plant Site									
	Emission Type		N/A	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)		
Future Asphalt	Copper	7440508	N/A										
	Ethylbenzene	100414	N/A										
	Ethylene	74851	N/A										
	Fluorene	86737	N/A										
	Fluoranthene	206440	N/A										
	Formaldehyde	50000	N/A										
	Hexane	110543	N/A										
	Hexvalent Chromium	18540299	N/A										
	Indeno(1,2,3-cd)pyrene	193395	N/A										
	Lead	7439921	N/A										
	Manganese	7439965	N/A										
	Mercury	7439976	N/A										
	Methyl Chloroform	71556	N/A										
	Naphthalene	91203	N/A										
	Nickel	7440020	N/A										
	Perylene	198550	N/A										
	Phenanthrene	85018	N/A										
	Phosphorus	7723140	N/A										
	Pyrene	129000	N/A										
	Selenium	7782492	N/A										
	Silver	7440224	N/A										
	Thallium	7440280	N/A										
	Toluene	108883	N/A										
	Xylene (mixed xylenes)	1330207	N/A										
	Zinc	7440666	N/A										
Cement Based Fugitive Emissions	Aluminum	7429905	0.016										
	Arsenic	7440382	0.000022										
	Beryllium	7440417	0.000001										
	Cadmium	7440439	0.000001										
	Chromium total	7440473	0.000058										
	Copper	7440508	0.00003										
	Hexavalent Chromium	18540299	0.000005										
	Lead	7439921	0.000012										
	Manganese	7439965	0.0004										
	Nickel	7440020	0.000025										
	Selenium	7782492	0.000001										
	Zinc	7440666	0.000092										
Aggregates Processing Fugitive Emissions	Aluminum	7429905	0.015			0	0.00			0	0.00		
	Arsenic	7440382	0.000001			0	0.00			0	0.00		
	Barium	7440393	0.000225			0	0.00			0	0.00		
	Beryllium	7440417	0.000001			0	0.00			0	0.00		
	Cadmium	7440439	0.000001			0	0.00			0	0.00		
	Chromium	7440473	0.000028			0	0.00			0	0.00		
	Cobalt	7440484	0.000011			0	0.00			0	0.00		
	Copper	7440508	0.000037			0	0.00			0	0.00		
	Hexavalent Chromium!	18540299	0.00000025			0	0.00			0	0.00		
	Lead	7439921	0.00005			0	0.00			0	0.00		
	Manganese	7439965	0.00053			0	0.00			0	0.00		
	Nickel	7440020	0.0000207			0	0.00			0	0.00		
	Respirable Silica**	1175	0.063806346			0	0.00			0	0.00		
	Selenium	7782492	0.000001			0	0.00			0	0.00		
	Zinc	7440666	0.000099			0	0.00			0	0.00		

	Aluminum	7429905	0.110392										

Baseline Sink

	Timeframe	CAS#	Speciation	Baseline			
	Representing			NSNK		SSNK	
	Model Object Multiplier			-1		-1	
	Source Type			Quarry Site		Plant Site	
	Emission Type			(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Asphalt Fugitive Emissions	Ammonia	7664417	0.000339	0	0	0.0	-0.00012
	Antimony	7440360	0.0001	0	0	0.0	-0.00004
	Barium	7440393	0.000997	0	0	0.0	-0.00036
	Bromine	7726956	0.000021	0	0	0.0	-0.00001
	Chlorine	7782505	0.000861	0	0	0.0	-0.00031
	Chromium	7440473	0.000056	0	0	0.0	-0.00002
	Copper	7440508	0.000066	0	0	0.0	-0.00002
	Hexavalent Chromium**	18540299	0.0000028	0	0	0.0	0.00000
	Lead	7439921	0.000008	0	0	0.0	0.00000
	Manganese	7439965	0.000662	0	0	0.0	-0.00024
	Mercury	7439976	0.000007	0	0	0.0	0.00000
	Nickel	7440020	0.000017	0	0	0.0	-0.00001
	Phosphorus	7723140	0.00113	0	0	0.0	-0.00040
	Selenium	7782492	0.000002	0	0	0.0	0.00000
	Sulfates	9960	0.002181	0	0	-0.1	-0.00078
	Thallium	7440280	0.000013	0	0	0.0	0.00000
	Vanadium	7440622	0.000018	0	0	0.0	-0.00001
	Zinc	7440666	0.000056	0	0	0.0	-0.00002
Storage Fugitive Emissions	Arsenic	7440382	0.000001	0	0	-0.0115413	-1.3175E-06
	Beryllium	7440417	0.000001	0	0	-0.0115413	-1.3175E-06
	Cadmium	7440439	0.000001	0	0	-0.0115413	-1.3175E-06
	Chromium	7440473	0.00005	0	0	-0.577065	-0.000065875
	Copper	7440508	0.0001	0	0	-1.15413	-0.00013175
	Hexavalent Chromium**	18540299	0.00000025	0	0	-0.002885325	-3.29375E-07
	Lead	7439921	0.00005	0	0	-0.577065	-0.000065875
	Manganese	7439965	0.0005	0	0	-5.77065	-0.00065875
	Nickel	7440020	0.0000207	0	0	-0.23890491	-2.72723E-05
	Selenium	7782492	0.000005	0	0	-0.0577065	-6.5875E-06
	Zinc	7440666	0.0002	0	0	-2.30826	-0.0002635

Project Years 31 - 100 Future Source

	Timeframe	CAS#	Speciation									
	Model Object			SRD1		SPLNT		SPILE		SMINE		
	Multiplier											
	Representing			South Road		South Agg Plant		South Pile		South Mine		
	Source Type			Plant Site								
	Emission Type		N/A	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	
Asphalt Fugitive Emissions	Ammonia	7664417	0.000339									
	Antimony	7440360	0.0001									
	Barium	7440393	0.000997									
	Bromine	7726956	0.000021									
	Chlorine	7782505	0.000861									
	Chromium	7440473	0.000056									
	Copper	7440508	0.000066									
	Hexavalent Chromium*	18540299	0.0000028									
	Lead	7439921	0.000008									
	Manganese	7439965	0.000662									
	Mercury	7439976	0.000007									
	Nickel	7440020	0.000017									
	Phosphorus	7723140	0.00113									
	Selenium	7782492	0.000002									
	Sulfates	9960	0.002181									
	Thallium	7440280	0.000013									
	Vanadium	7440622	0.000018									
	Zinc	7440666	0.000056									
Storage Fugitive Emissions	Arsenic	7440382	0.000001					0	0			
	Beryllium	7440417	0.000001					0	0			
	Cadmium	7440439	0.000001					0	0			
	Chromium	7440473	0.00005					0	0			
	Copper	7440508	0.0001					0	0			
	Hexavalent Chromium*	18540299	0.00000025					0	0			
	Lead	7439921	0.00005					0	0			
	Manganese	7439965	0.0005					0	0			
	Nickel	7440020	0.0000207					0	0			
	Selenium	7782492	0.000005					0	0			
	Zinc	7440666	0.0002					0	0			

a - Mine emissions are split into multiple mine volume sources. See report Table 16.

Road Dust Emissions From San Diego Air Pollution Control District "Haul Roads, Mineral Industry Sites, Paved and Unpaved, Default Trace Metal Composition"
https://www.sdapcd.org/content/dam/sdc/apcd/PDF/Misc/APCD_Haul_Road_Mineral_Industry_Sites_Paved_Unpaved.pdf

* The emission factors for cement and flyash are from the table, "DEFAULT VALUES - TRACE METAL CONCENTRATIONS" in the 1998 San Diego Air Pollution Control District document, Concrete Batch Plant Operations.Speciation profiles are derived from sampling of local concrete batch plants.

Aggregates Emission Factors:
*The emission factors are from the table, "DEFAULT VALUES - TRACE METAL CONCENTRATIONS" in the November 1998 San Diego Air Pollution Control District document, Aggregate Crushing Operations.
Pollutants required for toxic reporting: TACs w/o Risk Factor Current as of update date
!5% of Chromium considered Hexavalent Chromium (District Policy).
**The emission factor is derived from ratio of Silica PM4 to PM10 in the 2009 technical paper from the Journal of Air and Waste Management Association (JAWA), PM4 Crystalline Silica Emission Factors and Ambient Concentrations at Aggregate-Producing Sources in California. The average of the equipment data from the V

Stockpile Emissions
* The emission factors are from the table, "DEFAULT VALUES - Material Storage" in the December 1998 San Diego Air Pollution Control District document, *Open Material Storage Areas* .
Pollutants required for toxic reporting: TACs w/o Risk Factor Current as of update date
! 5% assumption of 50 e-6 of Non Hexavalent Chromium, crystalline silica listed as TAC in source document but not included due too respirable amount being indeterminate

Asphalt Dust Fugitive Emissions
* Emission factors are derived from a 1997 dust profile (#4082), from EPA Speciate 4.0, test data from a Mexico City Asphalt Plant.
Pollutants required for toxic reporting: TACs w/o Risk Factor. Current as of update date.
Since the amount of silica that is respirable (PM4) is indeterminate, the silica will be considered a Non-TAC (District Policy).
**5% of Chromium considered Hexavalent Chromium (District Policy).

Project Years 31 - 100 F

Timeframe	Future																			
Model Object Multiplier	NRD1		NRD2		NRD3		NASTK		NAPLNT		NMPLNT		NPLNT		NPLNT		NPILE		NMINE (a)	
Representing	North Road 1		North Road 2		North Road 3		North Asphalt Stack		North Asphalt Plant		North Readymix		North Recycle Plant		North Agg. Plant		North Storage		North Mine	
Source Type	Quarry Site																			
Emission Type	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
diesel PM10	5.956	0.014	10.923	0.007	63.899	#REF!													262.717	0.030
Aluminum	0.8	0.00445	1.456	0.001	1,782.6	#REF!														
Arsenic	0.0	0.00000	0.000	0.000	0.1	#REF!														
Barium	0.0	0.00004	0.014	0.000	17.2	#REF!														
Beryllium	0.0	0.00000	0.000	0.000	0.1	#REF!														
Cadmium	0.0	0.00000	0.000	0.000	0.1	#REF!														
Chromium	0.0	0.00001	0.002	0.000	3.0	#REF!														
Copper	0.0	0.00001	0.004	0.000	4.8	#REF!														
Lead	0.0	0.00001	0.003	0.000	3.6	#REF!														
Manganese	0.0	0.00015	0.048	0.000	58.2	#REF!														
Nickel	0.0	0.00001	0.002	0.000	2.5	#REF!														
Selenium	0.0	0.00000	0.000	0.000	0.1	#REF!														
Silica, Crystalline	5.4	0.02969	9.708	0.006	11,884.1	#REF!														
Zinc	0.0	0.00003	0.011	0.000	13.3	#REF!														
PM10							1,244.284	1.244												
CO							65,000.000	65.000												
CO2							16,500,000.000	16,500.000												
Nox							4,371.424	4.371												
SO2							1,700.000	1.700												
CH4							6,000.000	6.000												
VOC							4,100.000	4.100												
2,2,4-Trimethylpentane							2.164	0.002												
2-Methyl naphthalene							4.003	0.004												
Acenaphthene							0.076	0.000												
Acenaphthylene							0.465	0.000												
Anthracene							0.012	0.000												
Antimony							0.010	0.000												
Arsenic							0.030	0.000												
Barium							0.314	0.000												
Benzene							21.099	0.021												
Benzo(a)anthracene							0.011	0.000												
Benzo(a)pyrene							0.001	0.000												
Benzo(b)fluoranthene							0.005	0.000												
Benzo(g,h,i)perylene							0.002	0.000												
Benzo(k)fluoranthene							0.002	0.000												
Cadmium							0.022	0.000												
Chromium							0.298	0.000												
Chrysene							0.010	0.000												
Cobalt							0.001	0.000												

Project Years 31 - 100 F

Timeframe	Future																			
Model Object Multiplier	NRD1		NRD2		NRD3		NASTK		NAPLNT		NMPLNT		NPLNT		NPLNT		NPILE		NMINE (a)	
Representing	North Road 1		North Road 2		North Road 3		North Asphalt Stack		North Asphalt Plant		North Readymix		North Recycle Plant		North Agg. Plant		North Storage		North Mine	
Source Type	Quarry Site																			
Emission Type	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Copper							0.168	0.000												
Ethylbenzene							12.984	0.013												
Ethylene							378.695	0.379												
Fluorene							0.206	0.000												
Fluoranthene							0.033	0.000												
Formaldehyde							167.708	0.168												
Hexane							49.771	0.050												
Hexvalent Chromium							0.024	0.000												
Indeno(1,2,3-cd)pyrene							0.000	0.000												
Lead							0.034	0.000												
Manganese							0.417	0.000												
Mercury							0.013	0.000												
Methyl Chloroform							2.597	0.003												
Naphthalene							4.869	0.005												
Nickel							3.408	0.003												
Perylene							0.000	0.000												
Phenanthrene							0.411	0.000												
Phosphorus							1.515	0.002												
Pyrene							0.029	0.000												
Selenium							0.019	0.000												
Silver							0.026	0.000												
Thallium							0.000	0.000												
Toluene							8.115	0.008												
Xylene (mixed xylenes)							10.820	0.011												
Zinc							3.300	0.003												
Aluminum											9.7	0.00611								
Arsenic											0.0	0.00001								
Beryllium											0.0	0.00000								
Cadmium											0.0	0.00000								
Chromium total											0.0	0.00002								
Copper											0.0	0.00001								
Hexavalent Chromium											0.0	0.00000								
Lead											0.0	0.00000								
Manganese											0.2	0.00015								
Nickel											0.0	0.00001								
Selenium											0.0	0.00000								
Zinc											0.1	0.00004								
Aluminum															176	0.07			208	0.36
Arsenic															0	0.00			0	0.00
Barium															3	0.00			3	0.01
Beryllium															0	0.00			0	0.00
Cadmium															0	0.00			0	0.00
Chromium															0	0.00			0	0.00
Cobalt															0	0.00			0	0.00
Copper															0	0.00			1	0.00
Hexavalent Chromium!															0	0.00			0	0.00
Lead															1	0.00			1	0.00
Manganese															6	0.00			7	0.01
Nickel															0	0.00			0	0.00
Respirable Silica**															748	0.28			884	1.55
Selenium															0	0.00			0	0.00
Zinc															1	0.00			1	0.00
Aluminum									51.0	0.05100			34.4	0.03947						

Project Years 31 - 100 F

Timeframe	Future																			
Model Object Multiplier	NRD1		NRD2		NRD3		NASTK		NAPLNT		NMPLNT		NPLNT		NPLNT		NPILE		NMINE (a)	
Representing	North Road 1		North Road 2		North Road 3		North Asphalt Stack		North Asphalt Plant		North Readymix		North Recycle Plant		North Agg. Plant		North Storage		North Mine	
Source Type	Quarry Site																			
Emission Type	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Ammonia									0.2	0.00016			0.1	0.00012						
Antimony									0.0	0.00005			0.0	0.00004						
Barium									0.5	0.00046			0.3	0.00036						
Bromine									0.0	0.00001			0.0	0.00001						
Chlorine									0.4	0.00040			0.3	0.00031						
Chromium									0.0	0.00003			0.0	0.00002						
Copper									0.0	0.00003			0.0	0.00002						
Hexavalent Chromium*									0.0	0.00000			0.0	0.00000						
Lead									0.0	0.00000			0.0	0.00000						
Manganese									0.3	0.00031			0.2	0.00024						
Mercury									0.0	0.00000			0.0	0.00000						
Nickel									0.0	0.00001			0.0	0.00001						
Phosphorus									0.5	0.00052			0.4	0.00040						
Selenium									0.0	0.00000			0.0	0.00000						
Sulfates									1.0	0.00101			0.7	0.00078						
Thallium									0.0	0.00001			0.0	0.00000						
Vanadium									0.0	0.00001			0.0	0.00001						
Zinc									0.0	0.00003			0.0	0.00002						
Arsenic																	0	0.0000		
Beryllium																	0	0.0000		
Cadmium																	0	0.0000		
Chromium																	1	0.0001		
Copper																	2	0.0003		
Hexavalent Chromium*																	0	0.0000		
Lead																	1	0.0001		
Manganese																	11	0.0013		
Nickel																	0	0.0001		
Selenium																	0	0.0000		
Zinc																	4	0.0005		

ocument, Concrete Batc

;gregate Crushing Opera

alline Silica Emission Facernalis plant in Tracy was used.

;torage Areas .

X and Y represent meters east and meters north respectivley in Universal Transverse Mercator (UTM) Zone 11
Receptor 1-26: Discrete Receptors, receptor 20 is the only chronic worker receptor
Receptor 27-6829: Fenceline Grid Receptors, Top 30 receptors shown below

Model Receptor #	Type	Excess Cancer Cases per Million People Exposed	Max Chronic Hazard Index	Max Acute Hazard Index
23	MEIR -Cancer, Chronic	5.05E+00	1.02E-02	1.06E-01
25	MEIR - Acute	4.13E-01	2.72E-03	1.81E-01
20	MEIW - Cancer, Chronic	-2.10E+00	0.00E+00	8.59E-06
6772	Fenceline Receptor (PMI-Acute)	N/A	N/A	8.47E-01
	Significance Threshold	20	1	1

Receptor	X	Y	Total Cancer Risk Sum	Overall Max Chronic Hazard Index	Overall Max Acute Hazard Index
1	255690	4093488	-3.27E-05	2.20E-08	6.36E-03
2	256073.5	4094417	-4.96E-05	1.64E-08	5.98E-03
3	256874.7	4094261	-4.30E-05	1.29E-08	5.01E-03
4	257235.6	4094022	-3.73E-05	1.17E-08	5.70E-03
5	257490.5	4093429	-9.95E-05	1.10E-08	6.01E-03
6	257403.3	4093258	-1.28E-04	1.25E-08	7.11E-03
7	257349.2	4093105	-9.37E-05	1.31E-08	6.24E-03
8	254725.5	4093871	-7.00E-06	1.62E-08	9.93E-03
9	254945.4	4093801	-7.03E-06	1.64E-08	4.39E-03
10	255187.9	4093695	-7.59E-06	1.61E-08	4.40E-03
11	255139.1	4093484	-7.81E-06	1.89E-08	1.16E-02
12	255231.5	4093327	-6.38E-06	1.93E-08	1.29E-02
13	255360.7	4093201	-6.27E-06	2.05E-08	1.53E-02
14	255217.3	4093081	-5.69E-06	2.39E-08	2.13E-02
15	255226.2	4092933	-5.89E-06	3.72E-06	2.40E-02
16	255233.1	4092695	-4.79E-06	6.21E-05	2.65E-02
17	255251.4	4092534	-3.81E-06	1.10E-04	4.25E-02
18	255211.7	4092374	-3.57E-06	1.80E-04	4.18E-02
19	256529.1	4092279	-8.75E-06	3.73E-08	4.67E-02
20	256802.3	4092214	-9.37E-06	3.08E-08	5.22E-02
21	257050	4092413	-1.41E-05	2.07E-08	1.98E-02
22	256652	4089958	3.29E-06	8.05E-03	1.30E-01
23	256719.1	4090084	5.05E-06	1.02E-02	1.06E-01
24	255848.3	4089997	3.55E-07	1.95E-03	1.67E-01
25	255349	4090264	4.13E-07	2.72E-03	1.81E-01
26	257314.7	4090596	-8.93E-07	4.10E-04	6.38E-02

Receptor	X	Y	Total Cancer Risk Sum	Overall Max Chronic Hazard Index	Overall Max Acute Hazard Index
4121	255781	4090755	9.68E-06	6.85E-02	7.16E-01
4122	255808.2	4090785	1.04E-05	6.79E-02	7.33E-01
4229	255823.6	4090802	1.06E-05	6.40E-02	7.20E-01
4230	255839.2	4090820	1.07E-05	5.86E-02	7.06E-01
4285	255928.8	4090882	1.27E-05	3.94E-02	6.97E-01
4288	256001.7	4090883	1.78E-05	3.96E-02	7.11E-01
4289	256026	4090883	1.97E-05	3.95E-02	7.08E-01
6520	255904.8	4090856	1.26E-05	4.81E-02	7.36E-01
6521	255826.7	4090768	1.21E-05	8.55E-02	8.41E-01
6760	256099.3	4090859	3.56E-05	5.36E-02	7.39E-01
6761	256075	4090859	3.30E-05	5.33E-02	7.84E-01
6762	256050.7	4090858	2.92E-05	5.18E-02	7.72E-01
6763	256026.4	4090858	2.54E-05	5.06E-02	7.81E-01
6764	256002.1	4090858	2.18E-05	4.95E-02	7.83E-01
6765	255977.8	4090857	1.87E-05	4.91E-02	7.61E-01
6766	255953.4	4090857	1.64E-05	4.90E-02	7.50E-01
6767	255929.1	4090857	1.44E-05	4.89E-02	7.68E-01
6768	255889.2	4090839	1.25E-05	5.56E-02	7.62E-01
6769	255873.6	4090821	1.25E-05	6.42E-02	7.94E-01
6770	255858	4090803	1.25E-05	7.30E-02	7.90E-01
6771	255842.4	4090786	1.24E-05	8.06E-02	8.30E-01
6772	255813.2	4090753	1.18E-05	8.67E-02	8.47E-01
6773	255799.6	4090738	1.12E-05	8.49E-02	8.05E-01
6775	255790	4090675	1.08E-05	8.64E-02	7.12E-01
6776	255792	4090651	1.09E-05	8.71E-02	7.49E-01
6777	255794	4090626	1.05E-05	8.32E-02	7.51E-01
6778	255796	4090602	1.01E-05	7.71E-02	7.10E-01
6780	255800	4090554	8.44E-06	5.87E-02	7.09E-01

X and Y represent meters east and meters north respectivley in Universal Transverse Mercator (UTM) Zone 11
Receptor 1-26: Discrete Receptors, receptor 20 is the only chronic worker receptor
Receptor 27-6829: Fenceline Grid Receptors, Top 30 receptors shown below

Model Receptor #	Type	Excess Cancer Cases per Million People Exposed	Max Chronic Hazard Index	Max Acute Hazard Index
23	MEIR -Cancer, Chronic	2.17E+00	3.55E-03	3.66E-03
25	MEIR - Acute	-7.25E-03	1.53E-04	4.13E-03
20	MEIW - Cancer, Chronic	-2.10E+00	0.00E+00	8.59E-06
6829	Fenceline Receptor (PMI-Acute)	N/A	N/A	1.19E-01
	Significance Threshold	20	1	1

Receptor	X	Y	Total Cancer Risk Sum	Overall Max Chronic Hazard Index	Overall Max Acute Hazard Index
1	255690	4093488	-1.90E-05	0.00E+00	1.03E-05
2	256073.5	4094417	-2.87E-05	0.00E+00	1.07E-05
3	256874.7	4094261	-2.47E-05	0.00E+00	2.40E-05
4	257235.6	4094022	-2.14E-05	0.00E+00	3.46E-05
5	257490.5	4093429	-5.72E-05	0.00E+00	2.18E-05
6	257403.3	4093258	-7.35E-05	0.00E+00	3.98E-05
7	257349.2	4093105	-5.39E-05	0.00E+00	4.96E-05
8	254725.5	4093871	-4.06E-06	0.00E+00	6.55E-06
9	254945.4	4093801	-4.08E-06	0.00E+00	2.64E-06
10	255187.9	4093695	-4.40E-06	0.00E+00	6.74E-06
11	255139.1	4093484	-4.53E-06	0.00E+00	6.20E-06
12	255231.5	4093327	-3.71E-06	0.00E+00	5.07E-06
13	255360.7	4093201	-3.65E-06	0.00E+00	6.59E-06
14	255217.3	4093081	-3.32E-06	0.00E+00	7.32E-06
15	255226.2	4092933	-3.44E-06	0.00E+00	4.50E-06
16	255233.1	4092695	-2.81E-06	0.00E+00	3.68E-06
17	255251.4	4092534	-2.25E-06	0.00E+00	4.15E-06
18	255211.7	4092374	-2.12E-06	0.00E+00	6.10E-06
19	256529.1	4092279	-5.11E-06	0.00E+00	6.97E-06
20	256802.3	4092214	-5.46E-06	0.00E+00	8.59E-06
21	257050	4092413	-8.20E-06	0.00E+00	1.43E-05
22	256652	4089958	1.39E-06	2.30E-03	3.98E-03
23	256719.1	4090084	2.17E-06	3.55E-03	3.66E-03
24	255848.3	4089997	1.92E-08	1.65E-04	4.01E-03
25	255349	4090264	-7.25E-09	1.53E-04	3.49E-03
26	257314.7	4090596	-6.11E-07	0.00E+00	4.13E-03

Receptor	X	Y	Total Cancer Risk Sum	Overall Max Chronic Hazard Index	Overall Max Acute Hazard Index
5261	256801.7	4090706	8.84E-06	1.44E-02	3.27E-02
5262	256797.3	4090683	1.38E-05	2.25E-02	5.05E-02
5263	256792.9	4090660	2.42E-05	3.92E-02	9.16E-02
5269	256826.3	4090702	6.66E-06	1.09E-02	3.72E-02
5270	256821.9	4090679	9.51E-06	1.55E-02	5.71E-02
5271	256817.5	4090656	1.43E-05	2.33E-02	7.89E-02
5276	256855.2	4090720	3.75E-06	6.17E-03	3.07E-02
5277	256850.8	4090697	4.93E-06	8.07E-03	4.22E-02
5278	256846.4	4090674	6.42E-06	1.05E-02	5.68E-02
5279	256842.1	4090651	8.48E-06	1.38E-02	6.20E-02
5288	256871	4090669	3.85E-06	6.32E-03	3.50E-02
5289	256866.6	4090646	4.27E-06	6.98E-03	3.18E-02
5532	256766	4090630	7.13E-05	1.15E-01	6.27E-02
5533	256747.4	4090614	5.47E-05	8.85E-02	4.31E-02
5534	256728.8	4090598	4.21E-05	6.81E-02	3.25E-02
5560	256800.9	4090627	3.38E-05	5.47E-02	5.81E-02
5561	256782.3	4090611	4.03E-05	6.53E-02	4.17E-02
5562	256763.7	4090595	3.45E-05	5.58E-02	3.13E-02
5589	256825.5	4090622	1.73E-05	2.81E-02	5.08E-02
5590	256798.6	4090592	2.66E-05	4.31E-02	3.66E-02
6515	256768.4	4090665	4.74E-05	7.67E-02	8.96E-02
6722	256772.8	4090688	2.07E-05	3.35E-02	4.64E-02
6723	256777.2	4090711	1.19E-05	1.94E-02	3.08E-02
6826	256694	4090601	4.79E-05	7.75E-02	3.44E-02
6827	256712.6	4090617	6.57E-05	1.06E-01	4.62E-02
6828	256731.2	4090633	9.71E-05	1.57E-01	7.05E-02
6829	256749.8	4090649	7.39E-05	1.19E-01	1.19E-01

Baseline Sink

	Timeframe	CAS#	Speciation	Baseline			
	Representing			NSNK		SSNK	
	Model Object Multiplier			-1		-1	
	Source Type			Quarry Site		Plant Site	
	Emission Type			(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Diesel	diesel PM10	9901	N/A	-5233.5	-0.8	-57.9	-0.1
Road Based Emissions	Aluminum	7429905	0.0150000	-1994.2	-0.7	-663.7	-0.6
	Arsenic	7440382	0.0000010	-0.1	-0.0	-0.0	-0.0
	Barium	7440393	0.0001450	-19.3	-0.0	-6.4	-0.0
	Beryllium	7440417	0.0000010	-0.1	-0.0	-0.0	-0.0
	Cadmium	7440439	0.0000010	-0.1	-0.0	-0.0	-0.0
	Chromium	7440473	0.0000250	-3.3	-0.0	-1.1	-0.0
	Copper	7440508	0.0000400	-5.3	-0.0	-1.8	-0.0
	Lead	7439921	0.0000300	-4.0	-0.0	-1.3	-0.0
	Manganese	7439965	0.0004900	-65.1	-0.0	-21.7	-0.0
	Nickel	7440020	0.0000207	-2.8	-0.0	-0.9	-0.0
	Selenium	7782492	0.0000010	-0.1	-0.0	-0.0	-0.0
	Silica, Crystalline	1175	0.1000000	-13294.5	-4.5	-4424.6	-3.9
	Zinc	7440666	0.0001120	-14.9	-0.0	-5.0	-0.0
iline Diesel Asphalt Plant Stack	PM10	85101	N/A	-	-	-	-
	CO	42101	N/A	-	-	-	-
	CO2	124389	N/A	-	-	-	-
	Nox	42603	N/A	-	-	-	-
	SO2	42401	N/A	-	-	-	-
	CH4	74828	N/A	-	-	-	-
	VOC	43104	N/A	-	-	-	-
	2-Methyl naphthalene	91576	N/A	-	-	-	-
	Acenaphthene	83329	N/A	-	-	-	-
	Acenaphthylene	208968	N/A	-	-	-	-
	Acetaldehyde	75070	N/A	-	-	-	-
	Anthracene	120127	N/A	-	-	-	-
	Arsenic	7440382	N/A	-	-	-	-
	Barium	7440393	N/A	-	-	-	-
	Benzene	71432	N/A	-	-	-	-
	Benzo(a)anthracene	56553	N/A	-	-	-	-
	Benzo(a)pyrene	50328	N/A	-	-	-	-
	Benzo(b)fluoranthene	205992	N/A	-	-	-	-
	Benzo(g,h,i)perylene	191242	N/A	-	-	-	-
	Benzo(k)fluoranthene	207089	N/A	-	-	-	-
	Beryllium	7440417	N/A	-	-	-	-
	Cadmium	7440439	N/A	-	-	-	-
	Chromium	7440473	N/A	-	-	-	-
	Chrysene	218019	N/A	-	-	-	-
	Copper	7440508	N/A	-	-	-	-
	Crotonaldehyde	4170303	N/A	-	-	-	-
	Dibenz(a,h)anthracene	53703	N/A	-	-	-	-

Table - Project Year 0 - 30 Future Source

	Timeframe	CAS#	Speciation						
	Model Object Multiplier			SRD1		SPLNT		SPILE	
	Representing			South Road		South Agg Plant		South Pile	
	Source Type								
	Emission Type		N/A	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Diesel	diesel PM10	9901	1	26.6	0.0				
Road Based Emissions	Aluminum	7429905	0.0150000	383.8	0.4				
	Arsenic	7440382	0.0000010	0.0	0.0				
	Barium	7440393	0.0001450	3.7	0.0				
	Beryllium	7440417	0.0000010	0.0	0.0				
	Cadmium	7440439	0.0000010	0.0	0.0				
	Chromium	7440473	0.0000250	0.6	0.0				
	Copper	7440508	0.0000400	1.0	0.0				
	Lead	7439921	0.0000300	0.8	0.0				
	Manganese	7439965	0.0004900	12.5	0.0				
	Nickel	7440020	0.0000207	0.5	0.0				
	Selenium	7782492	0.0000010	0.0	0.0				
	Silica, Crystalline	1175	0.1000000	2,558.9	2.7				
	Zinc	7440666	0.0001120	2.9	0.0				
Asphalt Plant Stack	PM10	85101	N/A						
	CO	42101	N/A						
	CO2	124389	N/A						
	Nox	42603	N/A						
	SO2	42401	N/A						
	CH4	74828	N/A						
	VOC	43104	N/A						
	2,2,4-Trimethylpentane	540841	N/A						
	2-Methyl naphthalene	91576	N/A						
	Acenaphthene	83329	N/A						
	Acenaphthylene	208968	N/A						
	Anthracene	120127	N/A						
	Antimony	7440360	N/A						
	Arsenic	7440382	N/A						
	Barium	7440393	N/A						
	Benzene	71432	N/A						
	Benzo(a)anthracene	56553	N/A						
	Benzo(a)pyrene	50328	N/A						
	Benzo(b)fluoranthene	205992	N/A						
	Benzo(g,h,i)perylene	191242	N/A						
	Benzo(k)fluoranthene	207089	N/A						
	Cadmium	7440439	N/A						
	Chromium	7440473	N/A						
	Chrysene	218019	N/A						
	Cobalt	7440484	N/A						
	Copper	7440508	N/A						
	Ethylbenzene	100414	N/A						

Baseline Sink

	Timeframe	CAS#	Speciation	Baseline			
	Representing			NSNK		SSNK	
	Model Object Multiplier			-1		-1	
	Source Type			Quarry Site		Plant Site	
	Emission Type			(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Baseline	Ethylbenzene	100414	N/A	-	-	-	-
	Fluorene	86737	N/A	-	-	-	-
	Fluoranthene	206440	N/A	-	-	-	-
	Formaldehyde	50000	N/A	-	-	-	-
	Hexvalent Chromium	18540299	N/A	-	-	-	-
	Indeno(1,2,3-cd)pyrene	193395	N/A	-	-	-	-
	Isobutyraldehyde	78842	N/A	-	-	-	-
	Lead	7439921	N/A	-	-	-	-
	Manganese	7439965	N/A	-	-	-	-
	Mercury	7439976	N/A	-	-	-	-
	Naphthalene	91203	N/A	-	-	-	-
	Nickel	7440020	N/A	-	-	-	-
	Phenanthrene	85018	N/A	-	-	-	-
	Pyrene	129000	N/A	-	-	-	-
	Quinone	106514	N/A	-	-	-	-
	Selenium	7782492	N/A	-	-	-	-
	Toluene	108883	N/A	-	-	-	-
	Xylene (mixed xylenes)	1330207	N/A	-	-	-	-
	Zinc	7440666	N/A	-	-	-	-
Cement Based Fugitive Emissions	Aluminum	7429905	0.0160000	-	-	-6.1	-0.0
	Arsenic	7440382	0.0000220	-	-	-0.0	-0.0
	Beryllium	7440417	0.0000010	-	-	-0.0	-0.0
	Cadmium	7440439	0.0000010	-	-	-0.0	-0.0
	Chromium total	7440473	0.0000580	-	-	-0.0	-0.0
	Copper	7440508	0.0000300	-	-	-0.0	-0.0
	Hexavalent Chromium	18540299	0.0000050	-	-	-0.0	-0.0
	Lead	7439921	0.0000120	-	-	-0.0	-0.0
	Manganese	7439965	0.0004000	-	-	-0.2	-0.0
	Nickel	7440020	0.0000250	-	-	-0.0	-0.0
	Selenium	7782492	0.0000010	-	-	-0.0	-0.0
	Zinc	7440666	0.0000920	-	-	-0.0	-0.0
Aggregates Processing Fugitive Emissions	Aluminum	7429905	0.0150000	-498.9	-0.1	-70.0	-0.0
	Arsenic	7440382	0.0000010	-0.0	-0.0	-0.0	-0.0
	Barium	7440393	0.0002250	-7.5	-0.0	-1.0	-0.0
	Beryllium	7440417	0.0000010	-0.0	-0.0	-0.0	-0.0
	Cadmium	7440439	0.0000010	-0.0	-0.0	-0.0	-0.0
	Chromium	7440473	0.0000280	-0.9	-0.0	-0.1	-0.0
	Cobalt	7440484	0.0000110	-0.4	-0.0	-0.1	-0.0
	Copper	7440508	0.0000370	-1.2	-0.0	-0.2	-0.0
	Hexavalent Chromium!	18540299	0.0000003	-0.0	-0.0	-0.0	-0.0
	Lead	7439921	0.0000500	-1.7	-0.0	-0.2	-0.0
	Manganese	7439965	0.0005300	-17.6	-0.0	-2.5	-0.0
	Nickel	7440020	0.0000207	-0.7	-0.0	-0.1	-0.0
	Respirable Silica*	1175	0.0638063	-2122.3	-0.6	-297.7	-0.1
	Selenium	7782492	0.0000010	-0.0	-0.0	-0.0	-0.0
	Zinc	7440666	0.0000990	-3.3	-0.0	-0.5	-0.0

Table - Project Year 0 - 30 Future Source

	Timeframe	CAS#	Speciation						
	Model Object Multiplier			SRD1		SPLNT		SPILE	
	Representing			South Road		South Agg Plant		South Pile	
	Source Type								
	Emission Type		N/A	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Future	Ethylene	74851	N/A						
	Fluorene	86737	N/A						
	Fluoranthene	206440	N/A						
	Formaldehyde	50000	N/A						
	Hexane	110543	N/A						
	Hexvalent Chromium	18540299	N/A						
	Indeno(1,2,3-cd)pyrene	193395	N/A						
	Lead	7439921	N/A						
	Manganese	7439965	N/A						
	Mercury	7439976	N/A						
	Methyl Chloroform	71556	N/A						
	Naphthalene	91203	N/A						
	Nickel	7440020	N/A						
	Perylene	198550	N/A						
	Phenanthrene	85018	N/A						
	Phosphorus	7723140	N/A						
	Pyrene	129000	N/A						
	Selenium	7782492	N/A						
	Silver	7440224	N/A						
	Thallium	7440280	N/A						
	Toluene	108883	N/A						
	Xylene (mixed xylenes)	1330207	N/A						
	Zinc	7440666	N/A						
Cement Based Fugitive Emissions	Aluminum	7429905	0.0160000						
	Arsenic	7440382	0.0000220						
	Beryllium	7440417	0.0000010						
	Cadmium	7440439	0.0000010						
	Chromium total	7440473	0.0000580						
	Copper	7440508	0.0000300						
	Hexavalent Chromium	18540299	0.0000050						
	Lead	7439921	0.0000120						
	Manganese	7439965	0.0004000						
	Nickel	7440020	0.0000250						
	Selenium	7782492	0.0000010						
	Zinc	7440666	0.0000920						
Aggregates Processing Fugitive Emissions	Aluminum	7429905	0.0150000			24.0	0.0		
	Arsenic	7440382	0.0000010			0.0	0.0		
	Barium	7440393	0.0002250			0.4	0.0		
	Beryllium	7440417	0.0000010			0.0	0.0		
	Cadmium	7440439	0.0000010			0.0	0.0		
	Chromium	7440473	0.0000280			0.0	0.0		
	Cobalt	7440484	0.0000110			0.0	0.0		
	Copper	7440508	0.0000370			0.1	0.0		
	Hexavalent Chromium!	18540299	0.0000003			0.0	0.0		
	Lead	7439921	0.0000500			0.1	0.0		
	Manganese	7439965	0.0005300			0.8	0.0		
	Nickel	7440020	0.0000207			0.0	0.0		
	Respirable Silica*	1175	0.0638063			102.1	0.1		
	Selenium	7782492	0.0000010			0.0	0.0		
	Zinc	7440666	0.0000990			0.2	0.0		

Baseline Sink

	Timeframe	CAS#	Speciation	Baseline			
	Representing			NSNK		SSNK	
	Model Object Multiplier			-1		-1	
	Source Type			Quarry Site		Plant Site	
	Emission Type			(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Asphalt Fugitive Emissions	Aluminum	7429905	0.1103920	0	0	-4.294	-0.03947
	Ammonia	7664417	0.0003390	0	0	-0.013	-0.00012
	Antimony	7440360	0.0001000	0	0	-0.004	-0.00004
	Barium	7440393	0.0009970	0	0	-0.039	-0.00036
	Bromine	7726956	0.0000210	0	0	-0.001	-0.00001
	Chlorine	7782505	0.0008610	0	0	-0.033	-0.00031
	Chromium	7440473	0.0000560	0	0	-0.002	-0.00002
	Copper	7440508	0.0000660	0	0	-0.003	-0.00002
	Hexavalent Chromium**	18540299	0.0000028	0	0	0.000	0.00000
	Lead	7439921	0.0000080	0	0	0.000	0.00000
	Manganese	7439965	0.0006620	0	0	-0.026	-0.00024
	Mercury	7439976	0.0000070	0	0	0.000	0.00000
	Nickel	7440020	0.0000170	0	0	-0.001	-0.00001
	Phosphorus	7723140	0.0011300	0	0	-0.044	-0.00040
	Selenium	7782492	0.0000020	0	0	0.000	0.00000
	Sulfates	9960	0.0021810	0	0	-0.085	-0.00078
	Thallium	7440280	0.0000130	0	0	-0.001	0.00000
	Vanadium	7440622	0.0000180	0	0	-0.001	-0.00001
	Zinc	7440666	0.0000560	0	0	-0.002	-0.00002
Storage Fugitive Emissions	Arsenic	7440382	0.0000010			-0.012	-0.000001
	Beryllium	7440417	0.0000010			-0.012	-0.000001
	Cadmium	7440439	0.0000010			-0.012	-0.000001
	Chromium	7440473	0.0000500			-0.577	-0.000066
	Copper	7440508	0.0001000			-1.154	-0.000132
	Hexavalent Chromium**	18540299	0.0000003			-0.003	0.000000
	Lead	7439921	0.0000500			-0.577	-0.000066
	Manganese	7439965	0.0005000			-5.771	-0.000659
	Nickel	7440020	0.0000207			-0.239	-0.000027
	Selenium	7782492	0.0000050			-0.058	-0.000007
	Zinc	7440666	0.0002000			-2.308	-0.000264

Table - Project Year 0 - 30 Future Source

	Timeframe	CAS#	Speciation						
	Model Object Multiplier			SRD1		SPLNT		SPILE	
	Representing			South Road		South Agg Plant		South Pile	
	Source Type								
	Emission Type		N/A	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Asphalt Fugitive Emissions	Aluminum	7429905	0.1103920						
	Ammonia	7664417	0.0003390						
	Antimony	7440360	0.0001000						
	Barium	7440393	0.0009970						
	Bromine	7726956	0.0000210						
	Chlorine	7782505	0.0008610						
	Chromium	7440473	0.0000560						
	Copper	7440508	0.0000660						
	Hexavalent Chromium**	18540299	0.0000028						
	Lead	7439921	0.0000080						
	Manganese	7439965	0.0006620						
	Mercury	7439976	0.0000070						
	Nickel	7440020	0.0000170						
	Phosphorus	7723140	0.0011300						
	Selenium	7782492	0.0000020						
	Sulfates	9960	0.0021810						
	Thallium	7440280	0.0000130						
	Vanadium	7440622	0.0000180						
	Zinc	7440666	0.0000560						
Storage Fugitive Emissions	Arsenic	7440382	0.0000010					0.0	0.0
	Beryllium	7440417	0.0000010					0.0	0.0
	Cadmium	7440439	0.0000010					0.0	0.0
	Chromium	7440473	0.0000500					0.1	0.0
	Copper	7440508	0.0001000					0.1	0.0
	Hexavalent Chromium**	18540299	0.0000003					0.0	0.0
	Lead	7439921	0.0000500					0.1	0.0
	Manganese	7439965	0.0005000					0.5	0.0
	Nickel	7440020	0.0000207					0.0	0.0
	Selenium	7782492	0.0000050					0.0	0.0
	Zinc	7440666	0.0002000					0.2	0.0

a - Mine emissions are split into multiple mine volume sources. See report Table 16.

Road Dust Emissions From San Diego Air Pollution Control District "Haul Roads, Mineral Industry Sites, Paved and Unpaved, Default Trace Metal Composition"
https://www.sdapcd.org/content/dam/sdc/apcd/PDF/Misc/APCD_Haul_Road_Mineral_Industry_Sites_Paved_Unpaved.pdf

The emission factors for cement and flyash are from the table, "DEFAULT VALUES - TRACE METAL CONCENTRATIONS" in the 1998 San Diego Air Pollution Control District document, Concrete Batch Plant Operations.Speciation profiles are derived from sampling of local concrete batch plants.

Aggregates Emission Factors:
*The emission factors are from the table, "DEFAULT VALUES - TRACE METAL CONCENTRATIONS" in the November 1998 San Diego Air Pollution Control District document, Aggregate Crushing Operations.
Pollutants required for toxic reporting: TACs w/o Risk Factor Current as of update date
!5% of Chromium considered Hexavalent Chromium (District Policy).
*The emission factor is derived from ratio of Silica PM4 to PM10 in the 2009 technical paper from the Journal of Air and Waste Management Association (JAWA), PM4 Crystalline Silica Emission Factors and Ambient Concentrations at Aggregate-Producing Sources in California. The average of the equipment data

Stockpile Emissions
The emission factors are from the table, "DEFAULT VALUES - Material Storage" in the December 1998 San Diego Air Pollution Control District document, *Open Material Storage Areas*.
Pollutants required for toxic reporting: TACs w/o Risk Factor Current as of update date
! 5% assumption of 50 e-6 of Non Hexavalent Chromium, crystalline silica listed as TAC in source document but not included due too respirable amount being indeterminate

Asphalt Dust Fugitive Emissions
Emission factors are derived from a 1997 dust profile (#4082), from EPA Speciate 4.0, test data from a Mexico City Asphalt Plant.
Pollutants required for toxic reporting: TACs w/o Risk Factor. Current as of update date.
Since the amount of silica that is respirable (PM4) is indeterminate, the silica will be considered a Non-TAC (District Policy).
**5% of Chromium considered Hexavalent Chromium (District Policy).

Table - Project Year 0 - 30 Fu

Timeframe	Future																					
Model Object Multiplier	SRMPT		SAPLT		SASTK		SMINE		NRD3		NASTK		NAPLNT		NMPLNT		NPLNT		NPILE		NMINE (a)	
Representing	South RM Plant		South Asphalt Plant		South Asphalt Stack		South Mine		North Road 3		North Asphalt Stack		North Asphalt Plant		North Readymix		North Agg. Plant		North Storage		North Mine	
Source Type	Plant Site								Quarry Site													
Emission Type	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
diesel PM10			67.4	0.1			24.1	0.0	47.1	0.0											238.6	0.0
Aluminum									714.7	0.3												
Arsenic									0.0	0.0												
Barium									6.9	0.0												
Beryllium									0.0	0.0												
Cadmium									0.0	0.0												
Chromium									1.2	0.0												
Copper									1.9	0.0												
Lead									1.4	0.0												
Manganese									23.3	0.0												
Nickel									1.0	0.0												
Selenium									0.0	0.0												
Silica, Crystalline									4,764.8	1.9												
Zinc									5.3	0.0												
PM10					1,244.3	1.2																
CO					65,000.0	65.0																
CO2					16,500,000.0	16,500.0																
Nox					4,371.4	4.4																
SO2					1,700.0	1.7																
CH4					6,000.0	6.0																
VOC					4,100.0	4.1																
2,2,4-Trimethylpentane					2.2	0.0																
2-Methyl naphthalene					4.0	0.0																
Acenaphthene					0.1	0.0																
Acenaphthylene					0.5	0.0																
Anthracene					0.0	0.0																
Antimony					0.0	0.0																
Arsenic					0.0	0.0																
Barium					0.3	0.0																
Benzene					21.1	0.0																
Benzo(a)anthracene					0.0	0.0																
Benzo(a)pyrene					0.0	0.0																
Benzo(b)fluoranthene					0.0	0.0																
Benzo(g,h,i)perylene					0.0	0.0																
Benzo(k)fluoranthene					0.0	0.0																
Cadmium					0.0	0.0																
Chromium					0.3	0.0																
Chrysene					0.0	0.0																
Cobalt					0.0	0.0																
Copper					0.2	0.0																
Ethylbenzene					13.0	0.0																

Table - Project Year 0 - 30 Fu

Timeframe	Future																					
Model Object Multiplier	SRMPT		SAPLT		SASTK		SMINE		NRD3		NASTK		NAPLNT		NMPLNT		NPLNT		NPILE		NMINE (a)	
Representing	South RM Plant		South Asphalt Plant		South Asphalt Stack		South Mine		North Road 3		North Asphalt Stack		North Asphalt Plant		North Readymix		North Agg. Plant		North Storage		North Mine	
Source Type	Plant Site								Quarry Site													
Emission Type	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Ethylene					378.7	0.4																
Fluorene					0.2	0.0																
Fluoranthene					0.0	0.0																
Formaldehyde					167.7	0.2																
Hexane					49.8	0.0																
Hexvalent Chromium					0.0	0.0																
Indeno(1,2,3-cd)pyrene					0.0	0.0																
Lead					0.0	0.0																
Manganese					0.4	0.0																
Mercury					0.0	0.0																
Methyl Chloroform					2.6	0.0																
Naphthalene					4.9	0.0																
Nickel					3.4	0.0																
Perylene					0.0	0.0																
Phenanthrene					0.4	0.0																
Phosphorus					1.5	0.0																
Pyrene					0.0	0.0																
Selenium					0.0	0.0																
Silver					0.0	0.0																
Thallium					0.0	0.0																
Toluene					8.1	0.0																
Xylene (mixed xylenes)					10.8	0.0																
Zinc					3.3	0.0																
Aluminum	9.7	0.0													9.7	0.0						
Arsenic	0.0	0.0													0.0	0.0						
Beryllium	0.0	0.0													0.0	0.0						
Cadmium	0.0	0.0													0.0	0.0						
Chromium total	0.0	0.0													0.0	0.0						
Copper	0.0	0.0													0.0	0.0						
Hexavalent Chromium	0.0	0.0													0.0	0.0						
Lead	0.0	0.0													0.0	0.0						
Manganese	0.2	0.0													0.2	0.0						
Nickel	0.0	0.0													0.0	0.0						
Selenium	0.0	0.0													0.0	0.0						
Zinc	0.1	0.0													0.1	0.0						
Aluminum							0.8	0.0									159.4	0.1			104.6	0.3
Arsenic							0.0	0.0									0.0	0.0			0.0	0.0
Barium							0.0	0.0									2.4	0.0			1.6	0.0
Beryllium							0.0	0.0									0.0	0.0			0.0	0.0
Cadmium							0.0	0.0									0.0	0.0			0.0	0.0
Chromium							0.0	0.0									0.3	0.0			0.2	0.0
Cobalt							0.0	0.0									0.1	0.0			0.1	0.0
Copper							0.0	0.0									0.4	0.0			0.3	0.0
Hexavalent Chromium!							0.0	0.0									0.0	0.0			0.0	0.0
Lead							0.0	0.0									0.5	0.0			0.3	0.0
Manganese							0.0	0.0									5.6	0.0			3.7	0.0
Nickel							0.0	0.0									0.2	0.0			0.1	0.0
Respirable Silica*							3.2	0.1									678.2	0.3			444.9	1.4
Selenium							0.0	0.0									0.0	0.0			0.0	0.0
Zinc							0.0	0.0									1.1	0.0			0.7	0.0

Table - Project Year 0 - 30 Fu

Timeframe	Future																					
Model Object Multiplier	SRMPT		SAPLT		SASTK		SMINE		NRD3		NASTK		NAPLNT		NMPLNT		NPLNT		NPILE		NMINE (a)	
Representing	South RM Plant		South Asphalt Plant		South Asphalt Stack		South Mine		North Road 3		North Asphalt Stack		North Asphalt Plant		North Readymix		North Agg. Plant		North Storage		North Mine	
Source Type	Plant Site								Quarry Site													
Emission Type	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Aluminum			85.4	0.1																		
Ammonia			0.3	0.0																		
Antimony			0.1	0.0																		
Barium			0.8	0.0																		
Bromine			0.0	0.0																		
Chlorine			0.7	0.0																		
Chromium			0.0	0.0																		
Copper			0.1	0.0																		
Hexavalent Chromium**			0.0	0.0																		
Lead			0.0	0.0																		
Manganese			0.5	0.0																		
Mercury			0.0	0.0																		
Nickel			0.0	0.0																		
Phosphorus			0.9	0.0																		
Selenium			0.0	0.0																		
Sulfates			1.7	0.0																		
Thallium			0.0	0.0																		
Vanadium			0.0	0.0																		
Zinc			0.0	0.0																		
Arsenic																			0.0	0.0		
Beryllium																			0.0	0.0		
Cadmium																			0.0	0.0		
Chromium																			0.5	0.0		
Copper																			1.0	0.0		
Hexavalent Chromium**																			0.0	0.0		
Lead																			0.5	0.0		
Manganese																			5.0	0.0		
Nickel																			0.2	0.0		
Selenium																			0.0	0.0		
Zinc																			2.0	0.0		

ent, Concrete Batch Plant Ope

gate Crushing Operations.

e Silica Emission Factors and A from the Vernalis plant in Tracy was used.

Areas .

Baseline Sink

	Timeframe	CAS#	Speciation	Baseline			
				NSNK		SSNK	
	Representing Model Object Multiplier			-1		-1	
	Source Type			Quarry Site		Plant Site	
	Emission Type			(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Diesel	diesel PM10	9901	N/A	-5,233.524	-0.810	-57.871	-0.051
Road Based Emissions	Aluminum	7429905	0.015	-1,994.2	-0.674	-663.692	-0.583
	Arsenic	7440382	0.000001	-0.1	0.000	-0.044	0.000
	Barium	7440393	0.000145	-19.3	-0.007	-6.416	-0.006
	Beryllium	7440417	0.000001	-0.1	0.000	-0.044	0.000
	Cadmium	7440439	0.000001	-0.1	0.000	-0.044	0.000
	Chromium	7440473	0.000025	-3.3	-0.001	-1.106	-0.001
	Copper	7440508	0.00004	-5.3	-0.002	-1.770	-0.002
	Lead	7439921	0.00003	-4.0	-0.001	-1.327	-0.001
	Manganese	7439965	0.00049	-65.1	-0.022	-21.681	-0.019
	Nickel	7440020	0.0000207	-2.8	-0.001	-0.916	-0.001
	Selenium	7782492	0.000001	-0.1	0.000	-0.044	0.000
	Silica, Crystalline	1175	0.1	-13,294.5	-4.491	-4,424.610	-3.889
	Zinc	7440666	0.000112	-14.9	-0.005	-4.956	-0.004
Diesel Asphalt Plant Stack	PM10	85101	N/A	0.0	0.0	0.000	0.000
	CO	42101	N/A	0.0	0.0	0.000	0.000
	CO2	124389	N/A	0.0	0.0	0.000	0.000
	Nox	42603	N/A	0.0	0.0	0.000	0.000
	SO2	42401	N/A	0.0	0.0	0.000	0.000
	CH4	74828	N/A	0.0	0.0	0.000	0.000
	VOC	43104	N/A	0.0	0.0	0.000	0.000
	2-Methyl naphthalene	91576	N/A	0.0	0.0	0.000	0.000
	Acenaphthene	83329	N/A	0.0	0.0	0.000	0.000
	Acenaphthylene	208968	N/A	0.0	0.0	0.000	0.000
	Acetaldehyde	75070	N/A	0.0	0.0	0.000	0.000
	Anthracene	120127	N/A	0.0	0.0	0.000	0.000
	Arsenic	7440382	N/A	0.0	0.0	0.000	0.000
	Barium	7440393	N/A	0.0	0.0	0.000	0.000
	Benzene	71432	N/A	0.0	0.0	0.000	0.000
	Benzo(a)anthracene	56553	N/A	0.0	0.0	0.000	0.000
	Benzo(a)pyrene	50328	N/A	0.0	0.0	0.000	0.000
	Benzo(b)fluoranthene	205992	N/A	0.0	0.0	0.000	0.000
	Benzo(g,h,i)perylene	191242	N/A	0.0	0.0	0.000	0.000
	Benzo(k)fluoranthene	207089	N/A	0.0	0.0	0.000	0.000
	Beryllium	7440417	N/A	0.0	0.0	0.000	0.000
	Cadmium	7440439	N/A	0.0	0.0	0.000	0.000
	Chromium	7440473	N/A	0.0	0.0	0.000	0.000
	Chrysene	218019	N/A	0.0	0.0	0.000	0.000
	Copper	7440508	N/A	0.0	0.0	0.000	0.000

Project Years 31 - 100 Future Source

	Timeframe	CAS#	Speciation								
	Model Object Multiplier			SRD1		SPLNT		SPILE		SMINE	
	Representing			South Road		South Agg Plant		South Pile		South Mine	
	Source Type			Plant Site							
	Emission Type		N/A	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Diesel	diesel PM10	9901	1	0.00000	0.00000					0.000	0.000
Road Based Emissions	Aluminum	7429905	0.015	0.0	0.000						
	Arsenic	7440382	0.000001	0.0	0.000						
	Barium	7440393	0.000145	0.0	0.000						
	Beryllium	7440417	0.000001	0.0	0.000						
	Cadmium	7440439	0.000001	0.0	0.000						
	Chromium	7440473	0.000025	0.0	0.000						
	Copper	7440508	0.00004	0.0	0.000						
	Lead	7439921	0.00003	0.0	0.000						
	Manganese	7439965	0.00049	0.0	0.000						
	Nickel	7440020	0.0000207	0.0	0.000						
	Selenium	7782492	0.000001	0.0	0.000						
	Silica, Crystalline	1175	0.1	0.0	0.000						
	Zinc	7440666	0.000112	0.0	0.000						
Diesel Asphalt Plant Stack	PM10	85101	N/A								
	CO	42101	N/A								
	CO2	124389	N/A								
	Nox	42603	N/A								
	SO2	42401	N/A								
	CH4	74828	N/A								
	VOC	43104	N/A								
	2,2,4-Trimethylpentane	540841	N/A								
	2-Methyl naphthalene	91576	N/A								
	Acenaphthene	83329	N/A								
	Acenaphthylene	208968	N/A								
	Anthracene	120127	N/A								
	Antimony	7440360	N/A								
	Arsenic	7440382	N/A								
	Barium	7440393	N/A								
	Benzene	71432	N/A								
	Benzo(a)anthracene	56553	N/A								
	Benzo(a)pyrene	50328	N/A								
	Benzo(b)fluoranthene	205992	N/A								
	Benzo(g,h,i)perylene	191242	N/A								
	Benzo(k)fluoranthene	207089	N/A								
	Cadmium	7440439	N/A								
	Chromium	7440473	N/A								
	Chrysene	218019	N/A								
	Cobalt	7440484	N/A								

Baseline Sink

	Timeframe	CAS#	Speciation	Baseline			
	Representing			NSNK		SSNK	
	Model Object Multiplier			-1		-1	
	Source Type			Quarry Site		Plant Site	
	Emission Type			(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Baseline D	Crotonaldehyde	4170303	N/A	0.0	0.0	0.000	0.000
	Dibenz(a,h)anthracene	53703	N/A	0.0	0.0	0.000	0.000
	Ethylbenzene	100414	N/A	0.0	0.0	0.000	0.000
	Fluorene	86737	N/A	0.0	0.0	0.000	0.000
	Fluoranthene	206440	N/A	0.0	0.0	0.000	0.000
	Formaldehyde	50000	N/A	0.0	0.0	0.000	0.000
	Hexvalent Chromium	18540299	N/A	0.0	0.0	0.000	0.000
	Indeno(1,2,3-cd)pyrene	193395	N/A	0.0	0.0	0.000	0.000
	Isobutyraldehyde	78842	N/A	0.0	0.0	0.000	0.000
	Lead	7439921	N/A	0.0	0.0	0.000	0.000
	Manganese	7439965	N/A	0.0	0.0	0.000	0.000
	Mercury	7439976	N/A	0.0	0.0	0.000	0.000
	Naphthalene	91203	N/A	0.0	0.0	0.000	0.000
	Nickel	7440020	N/A	0.0	0.0	0.000	0.000
	Phenanthrene	85018	N/A	0.0	0.0	0.000	0.000
	Pyrene	129000	N/A	0.0	0.0	0.000	0.000
	Quinone	106514	N/A	0.0	0.0	0.000	0.000
	Selenium	7782492	N/A	0.0	0.0	0.000	0.000
	Toluene	108883	N/A	0.0	0.0	0.000	0.000
	Xylene (mixed xylenes)	1330207	N/A	0.0	0.0	0.000	0.000
	Zinc	7440666	N/A	0.0	0.0	0.000	0.000
Cement Based Fugitive Emissions	Aluminum	7429905	0.016	0.0	0.0	-6.097383744	-0.00611186
	Arsenic	7440382	0.000022	0.0	0.0	-0.008383903	-0.00000840
	Beryllium	7440417	0.000001	0.0	0.0	-0.000381086	-0.00000038
	Cadmium	7440439	0.000001	0.0	0.0	-0.000381086	-0.00000038
	Chromium total	7440473	0.000058	0.0	0.0	-0.022103016	-0.00002216
	Copper	7440508	0.00003	0.0	0.0	-0.011432595	-0.00001146
	Hexavalent Chromium	18540299	0.000005	0.0	0.0	-0.001905432	-0.00000191
	Lead	7439921	0.000012	0.0	0.0	-0.004573038	-0.00000458
	Manganese	7439965	0.0004	0.0	0.0	-0.152434594	-0.00015280
	Nickel	7440020	0.000025	0.0	0.0	-0.009527162	-0.00000955
	Selenium	7782492	0.000001	0.0	0.0	-0.000381086	-0.00000038
	Zinc	7440666	0.000092	0.0	0.0	-0.035059957	-0.00003514
Aggregates Processing Fugitive Emissions	Aluminum	7429905	0.015	-499	-0.1500	-70	-0.02
	Arsenic	7440382	0.000001	0	0.0000	0	0.00
	Barium	7440393	0.000225	-7	-0.0022	-1	0.00
	Beryllium	7440417	0.000001	0	0.0000	0	0.00
	Cadmium	7440439	0.000001	0	0.0000	0	0.00
	Chromium	7440473	0.000028	-1	-0.0003	0	0.00
	Cobalt	7440484	0.000011	0	-0.0001	0	0.00
	Copper	7440508	0.000037	-1	-0.0004	0	0.00
	Hexavalent Chromium!	18540299	0.00000025	0	0.0000	0	0.00
	Lead	7439921	0.00005	-2	-0.0005	0	0.00
	Manganese	7439965	0.00053	-18	-0.0053	-2	0.00
	Nickel	7440020	0.0000207	-1	-0.0002	0	0.00
	Respirable Silica**	1175	0.063806346	-2,122	-0.6379	-298	-0.09
	Selenium	7782492	0.000001	0	0.0000	0	0.00
	Zinc	7440666	0.000099	-3	-0.0010	0	0.00

	Aluminum	7429905	0.110392	0	0	-4.3	-0.03947

Project Years 31 - 100 Future Source

	Timeframe	CAS#	Speciation										
	Model Object Multiplier			SRD1		SPLNT		SPILE		SMINE			
	Representing			South Road		South Agg Plant		South Pile		South Mine			
	Source Type			Plant Site									
	Emission Type		N/A	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)		
Future Asphalt	Copper	7440508	N/A										
	Ethylbenzene	100414	N/A										
	Ethylene	74851	N/A										
	Fluorene	86737	N/A										
	Fluoranthene	206440	N/A										
	Formaldehyde	50000	N/A										
	Hexane	110543	N/A										
	Hexvalent Chromium	18540299	N/A										
	Indeno(1,2,3-cd)pyrene	193395	N/A										
	Lead	7439921	N/A										
	Manganese	7439965	N/A										
	Mercury	7439976	N/A										
	Methyl Chloroform	71556	N/A										
	Naphthalene	91203	N/A										
	Nickel	7440020	N/A										
	Perylene	198550	N/A										
	Phenanthrene	85018	N/A										
	Phosphorus	7723140	N/A										
	Pyrene	129000	N/A										
	Selenium	7782492	N/A										
	Silver	7440224	N/A										
	Thallium	7440280	N/A										
	Toluene	108883	N/A										
	Xylene (mixed xylenes)	1330207	N/A										
	Zinc	7440666	N/A										
Cement Based Fugitive Emissions	Aluminum	7429905	0.016										
	Arsenic	7440382	0.000022										
	Beryllium	7440417	0.000001										
	Cadmium	7440439	0.000001										
	Chromium total	7440473	0.000058										
	Copper	7440508	0.00003										
	Hexavalent Chromium	18540299	0.000005										
	Lead	7439921	0.000012										
	Manganese	7439965	0.0004										
	Nickel	7440020	0.000025										
	Selenium	7782492	0.000001										
	Zinc	7440666	0.000092										
Aggregates Processing Fugitive Emissions	Aluminum	7429905	0.015			0	0.00			0	0.00		
	Arsenic	7440382	0.000001			0	0.00			0	0.00		
	Barium	7440393	0.000225			0	0.00			0	0.00		
	Beryllium	7440417	0.000001			0	0.00			0	0.00		
	Cadmium	7440439	0.000001			0	0.00			0	0.00		
	Chromium	7440473	0.000028			0	0.00			0	0.00		
	Cobalt	7440484	0.000011			0	0.00			0	0.00		
	Copper	7440508	0.000037			0	0.00			0	0.00		
	Hexavalent Chromium!	18540299	0.00000025			0	0.00			0	0.00		
	Lead	7439921	0.00005			0	0.00			0	0.00		
	Manganese	7439965	0.00053			0	0.00			0	0.00		
	Nickel	7440020	0.0000207			0	0.00			0	0.00		
	Respirable Silica**	1175	0.063806346			0	0.00			0	0.00		
	Selenium	7782492	0.000001			0	0.00			0	0.00		
	Zinc	7440666	0.000099			0	0.00			0	0.00		

	Aluminum	7429905	0.110392										

Baseline Sink

	Timeframe	CAS#	Speciation	Baseline			
	Representing			NSNK		SSNK	
	Model Object Multiplier			-1		-1	
	Source Type			Quarry Site		Plant Site	
	Emission Type			(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Asphalt Fugitive Emissions	Ammonia	7664417	0.000339	0	0	0.0	-0.00012
	Antimony	7440360	0.0001	0	0	0.0	-0.00004
	Barium	7440393	0.000997	0	0	0.0	-0.00036
	Bromine	7726956	0.000021	0	0	0.0	-0.00001
	Chlorine	7782505	0.000861	0	0	0.0	-0.00031
	Chromium	7440473	0.000056	0	0	0.0	-0.00002
	Copper	7440508	0.000066	0	0	0.0	-0.00002
	Hexavalent Chromium**	18540299	0.0000028	0	0	0.0	0.00000
	Lead	7439921	0.000008	0	0	0.0	0.00000
	Manganese	7439965	0.000662	0	0	0.0	-0.00024
	Mercury	7439976	0.000007	0	0	0.0	0.00000
	Nickel	7440020	0.000017	0	0	0.0	-0.00001
	Phosphorus	7723140	0.00113	0	0	0.0	-0.00040
	Selenium	7782492	0.000002	0	0	0.0	0.00000
	Sulfates	9960	0.002181	0	0	-0.1	-0.00078
	Thallium	7440280	0.000013	0	0	0.0	0.00000
	Vanadium	7440622	0.000018	0	0	0.0	-0.00001
	Zinc	7440666	0.000056	0	0	0.0	-0.00002
Storage Fugitive Emissions	Arsenic	7440382	0.000001	0	0	-0.0115413	-1.3175E-06
	Beryllium	7440417	0.000001	0	0	-0.0115413	-1.3175E-06
	Cadmium	7440439	0.000001	0	0	-0.0115413	-1.3175E-06
	Chromium	7440473	0.00005	0	0	-0.577065	-0.000065875
	Copper	7440508	0.0001	0	0	-1.15413	-0.00013175
	Hexavalent Chromium**	18540299	0.00000025	0	0	-0.002885325	-3.29375E-07
	Lead	7439921	0.00005	0	0	-0.577065	-0.000065875
	Manganese	7439965	0.0005	0	0	-5.77065	-0.00065875
	Nickel	7440020	0.0000207	0	0	-0.23890491	-2.72723E-05
	Selenium	7782492	0.000005	0	0	-0.0577065	-6.5875E-06
	Zinc	7440666	0.0002	0	0	-2.30826	-0.0002635

Project Years 31 - 100 Future Source

	Timeframe	CAS#	Speciation									
	Model Object			SRD1		SPLNT		SPILE		SMINE		
	Multiplier											
	Representing			South Road		South Agg Plant		South Pile		South Mine		
	Source Type			Plant Site								
	Emission Type		N/A	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	
Asphalt Fugitive Emissions	Ammonia	7664417	0.000339									
	Antimony	7440360	0.0001									
	Barium	7440393	0.000997									
	Bromine	7726956	0.000021									
	Chlorine	7782505	0.000861									
	Chromium	7440473	0.000056									
	Copper	7440508	0.000066									
	Hexavalent Chromium*	18540299	0.0000028									
	Lead	7439921	0.000008									
	Manganese	7439965	0.000662									
	Mercury	7439976	0.000007									
	Nickel	7440020	0.000017									
	Phosphorus	7723140	0.00113									
	Selenium	7782492	0.000002									
	Sulfates	9960	0.002181									
	Thallium	7440280	0.000013									
	Vanadium	7440622	0.000018									
	Zinc	7440666	0.000056									
Storage Fugitive Emissions	Arsenic	7440382	0.000001					0	0			
	Beryllium	7440417	0.000001					0	0			
	Cadmium	7440439	0.000001					0	0			
	Chromium	7440473	0.00005					0	0			
	Copper	7440508	0.0001					0	0			
	Hexavalent Chromium*	18540299	0.00000025					0	0			
	Lead	7439921	0.00005					0	0			
	Manganese	7439965	0.0005					0	0			
	Nickel	7440020	0.0000207					0	0			
	Selenium	7782492	0.000005					0	0			
	Zinc	7440666	0.0002					0	0			

a - Mine emissions are split into multiple mine volume sources. See report Table 16.

Road Dust Emissions From San Diego Air Pollution Control District "Haul Roads, Mineral Industry Sites, Paved and Unpaved, Default Trace Metal Composition"
https://www.sdapcd.org/content/dam/sdc/apcd/PDF/Misc/APCD_Haul_Road_Mineral_Industry_Sites_Paved_Unpaved.pdf

* The emission factors for cement and flyash are from the table, "DEFAULT VALUES - TRACE METAL CONCENTRATIONS" in the 1998 San Diego Air Pollution Control District document, Concrete Batch Plant Operations.Speciation profiles are derived from sampling of local concrete batch plants.

Aggregates Emission Factors:
*The emission factors are from the table, "DEFAULT VALUES - TRACE METAL CONCENTRATIONS" in the November 1998 San Diego Air Pollution Control District document, Aggregate Crushing Operations.
Pollutants required for toxic reporting: TACs w/o Risk Factor Current as of update date
!5% of Chromium considered Hexavalent Chromium (District Policy).
**The emission factor is derived from ratio of Silica PM4 to PM10 in the 2009 technical paper from the Journal of Air and Waste Management Association (JAWA), PM4 Crystalline Silica Emission Factors and Ambient Concentrations at Aggregate-Producing Sources in California. The average of the equipment data from the V

Stockpile Emissions
* The emission factors are from the table, "DEFAULT VALUES - Material Storage" in the December 1998 San Diego Air Pollution Control District document, *Open Material Storage Areas* .
Pollutants required for toxic reporting: TACs w/o Risk Factor Current as of update date
! 5% assumption of 50 e-6 of Non Hexavalent Chromium, crystalline silica listed as TAC in source document but not included due too respirable amount being indeterminate

Asphalt Dust Fugitive Emissions
* Emission factors are derived from a 1997 dust profile (#4082), from EPA Speciate 4.0, test data from a Mexico City Asphalt Plant.
Pollutants required for toxic reporting: TACs w/o Risk Factor. Current as of update date.
Since the amount of silica that is respirable (PM4) is indeterminate, the silica will be considered a Non-TAC (District Policy).
**5% of Chromium considered Hexavalent Chromium (District Policy).

Project Years 31 - 100 F

Timeframe	Future																			
Model Object Multiplier	NRD1		NRD2		NRD3		NASTK		NAPLNT		NMPLNT		NPLNT		NPLNT		NPILE		NMINE (a)	
Representing	North Road 1		North Road 2		North Road 3		North Asphalt Stack		North Asphalt Plant		North Readymix		North Recycle Plant		North Agg. Plant		North Storage		North Mine	
Source Type	Quarry Site																			
Emission Type	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
diesel PM10	5.956	0.014	10.923	0.007	63.899	#REF!													262.717	0.030
Aluminum	0.5	0.00412	0.728	0.000	891.3	#REF!														
Arsenic	0.0	0.00000	0.000	0.000	0.1	#REF!														
Barium	0.0	0.00004	0.007	0.000	8.6	#REF!														
Beryllium	0.0	0.00000	0.000	0.000	0.1	#REF!														
Cadmium	0.0	0.00000	0.000	0.000	0.1	#REF!														
Chromium	0.0	0.00001	0.001	0.000	1.5	#REF!														
Copper	0.0	0.00001	0.002	0.000	2.4	#REF!														
Lead	0.0	0.00001	0.001	0.000	1.8	#REF!														
Manganese	0.0	0.00013	0.024	0.000	29.1	#REF!														
Nickel	0.0	0.00001	0.001	0.000	1.2	#REF!														
Selenium	0.0	0.00000	0.000	0.000	0.1	#REF!														
Silica, Crystalline	3.2	0.02746	4.854	0.003	5,942.1	#REF!														
Zinc	0.0	0.00003	0.005	0.000	6.7	#REF!														
PM10							1,244.284	1.244												
CO							65,000.000	65.000												
CO2							16,500,000.000	16,500.000												
Nox							4,371.424	4.371												
SO2							1,700.000	1.700												
CH4							6,000.000	6.000												
VOC							4,100.000	4.100												
2,2,4-Trimethylpentane							2.164	0.002												
2-Methyl naphthalene							4.003	0.004												
Acenaphthene							0.076	0.000												
Acenaphthylene							0.465	0.000												
Anthracene							0.012	0.000												
Antimony							0.010	0.000												
Arsenic							0.030	0.000												
Barium							0.314	0.000												
Benzene							21.099	0.021												
Benzo(a)anthracene							0.011	0.000												
Benzo(a)pyrene							0.001	0.000												
Benzo(b)fluoranthene							0.005	0.000												
Benzo(g,h,i)perylene							0.002	0.000												
Benzo(k)fluoranthene							0.002	0.000												
Cadmium							0.022	0.000												
Chromium							0.298	0.000												
Chrysene							0.010	0.000												
Cobalt							0.001	0.000												

Project Years 31 - 100 F

Timeframe	Future																			
Model Object Multiplier	NRD1		NRD2		NRD3		NASTK		NAPLNT		NMPLNT		NPLNT		NPLNT		NPILE		NMINE (a)	
Representing	North Road 1		North Road 2		North Road 3		North Asphalt Stack		North Asphalt Plant		North Readymix		North Recycle Plant		North Agg. Plant		North Storage		North Mine	
Source Type	Quarry Site																			
Emission Type	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Copper							0.168	0.000												
Ethylbenzene							12.984	0.013												
Ethylene							378.695	0.379												
Fluorene							0.206	0.000												
Fluoranthene							0.033	0.000												
Formaldehyde							167.708	0.168												
Hexane							49.771	0.050												
Hexvalent Chromium							0.024	0.000												
Indeno(1,2,3-cd)pyrene							0.000	0.000												
Lead							0.034	0.000												
Manganese							0.417	0.000												
Mercury							0.013	0.000												
Methyl Chloroform							2.597	0.003												
Naphthalene							4.869	0.005												
Nickel							3.408	0.003												
Perylene							0.000	0.000												
Phenanthrene							0.411	0.000												
Phosphorus							1.515	0.002												
Pyrene							0.029	0.000												
Selenium							0.019	0.000												
Silver							0.026	0.000												
Thallium							0.000	0.000												
Toluene							8.115	0.008												
Xylene (mixed xylenes)							10.820	0.011												
Zinc							3.300	0.003												
Aluminum											9.7	0.00611								
Arsenic											0.0	0.00001								
Beryllium											0.0	0.00000								
Cadmium											0.0	0.00000								
Chromium total											0.0	0.00002								
Copper											0.0	0.00001								
Hexavalent Chromium											0.0	0.00000								
Lead											0.0	0.00000								
Manganese											0.2	0.00015								
Nickel											0.0	0.00001								
Selenium											0.0	0.00000								
Zinc											0.1	0.00004								
Aluminum															176	0.07			113	0.33
Arsenic															0	0.00			0	0.00
Barium															3	0.00			2	0.00
Beryllium															0	0.00			0	0.00
Cadmium															0	0.00			0	0.00
Chromium															0	0.00			0	0.00
Cobalt															0	0.00			0	0.00
Copper															0	0.00			0	0.00
Hexavalent Chromium!															0	0.00			0	0.00
Lead															1	0.00			0	0.00
Manganese															6	0.00			4	0.01
Nickel															0	0.00			0	0.00
Respirable Silica**															748	0.28			482	1.40
Selenium															0	0.00			0	0.00
Zinc															1	0.00			1	0.00
Aluminum									51.0	0.05100			34.4	0.03947						

Project Years 31 - 100 F

Timeframe	Future																			
Model Object Multiplier	NRD1		NRD2		NRD3		NASTK		NAPLNT		NMPLNT		NPLNT		NPLNT		NPILE		NMINE (a)	
Representing	North Road 1		North Road 2		North Road 3		North Asphalt Stack		North Asphalt Plant		North Readymix		North Recycle Plant		North Agg. Plant		North Storage		North Mine	
Source Type	Quarry Site																			
Emission Type	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
Ammonia									0.2	0.00016			0.1	0.00012						
Antimony									0.0	0.00005			0.0	0.00004						
Barium									0.5	0.00046			0.3	0.00036						
Bromine									0.0	0.00001			0.0	0.00001						
Chlorine									0.4	0.00040			0.3	0.00031						
Chromium									0.0	0.00003			0.0	0.00002						
Copper									0.0	0.00003			0.0	0.00002						
Hexavalent Chromium*									0.0	0.00000			0.0	0.00000						
Lead									0.0	0.00000			0.0	0.00000						
Manganese									0.3	0.00031			0.2	0.00024						
Mercury									0.0	0.00000			0.0	0.00000						
Nickel									0.0	0.00001			0.0	0.00001						
Phosphorus									0.5	0.00052			0.4	0.00040						
Selenium									0.0	0.00000			0.0	0.00000						
Sulfates									1.0	0.00101			0.7	0.00078						
Thallium									0.0	0.00001			0.0	0.00000						
Vanadium									0.0	0.00001			0.0	0.00001						
Zinc									0.0	0.00003			0.0	0.00002						
Arsenic																	0	0.0000		
Beryllium																	0	0.0000		
Cadmium																	0	0.0000		
Chromium																	1	0.0001		
Copper																	1	0.0001		
Hexavalent Chromium*																	0	0.0000		
Lead																	1	0.0001		
Manganese																	5	0.0006		
Nickel																	0	0.0000		
Selenium																	0	0.0000		
Zinc																	2	0.0003		

ocument, Concrete Batc

;gregate Crushing Opera

alline Silica Emission Facernalis plant in Tracy was used.

;torage Areas .

X and Y represent meters east and meters north respectivley in Universal Transverse Mercator (UTM) Zone 11
Receptor 1-26: Discrete Receptors, receptor 20 is the only chronic worker receptor
Receptor 27-6829: Fenceline Grid Receptors, Top 30 receptors shown below

Model Receptor #	Type	Excess Cancer Cases per Million People Exposed	Max Chronic Hazard Index	Max Acute Hazard Index
23	MEIR -Cancer, Chronic	5.03E+00	8.34E-03	1.04E-01
25	MEIR - Acute	4.07E-01	2.30E-03	1.79E-01
20	MEIW - Cancer, Chronic	-2.39E+00	3.08E-08	5.14E-02
6772	Fenceline Receptor (PMI-Acute)	N/A	N/A	8.42E-01
	Significance Threshold	20	1	1

Receptor	X	Y	Total Cancer Risk Sum	Overall Max Chronic Hazard Index	Overall Max Acute Hazard Index
1	255690	4093488	-3.27E-05	2.20E-08	6.36E-03
2	256073.5	4094417	-4.96E-05	1.64E-08	5.98E-03
3	256874.7	4094261	-4.30E-05	1.29E-08	5.01E-03
4	257235.6	4094022	-3.74E-05	1.17E-08	5.70E-03
5	257490.5	4093429	-9.95E-05	1.10E-08	6.01E-03
6	257403.3	4093258	-1.28E-04	1.25E-08	7.11E-03
7	257349.2	4093105	-9.37E-05	1.31E-08	6.24E-03
8	254725.5	4093871	-7.00E-06	1.62E-08	9.22E-03
9	254945.4	4093801	-7.04E-06	1.64E-08	3.79E-03
10	255187.9	4093695	-7.59E-06	1.61E-08	3.70E-03
11	255139.1	4093484	-7.81E-06	1.89E-08	1.10E-02
12	255231.5	4093327	-6.38E-06	1.93E-08	1.23E-02
13	255360.7	4093201	-6.27E-06	2.05E-08	1.47E-02
14	255217.3	4093081	-5.69E-06	2.39E-08	2.06E-02
15	255226.2	4092933	-5.89E-06	2.73E-08	2.34E-02
16	255233.1	4092695	-4.79E-06	5.07E-05	2.59E-02
17	255251.4	4092534	-3.81E-06	9.91E-05	4.18E-02
18	255211.7	4092374	-3.57E-06	1.67E-04	4.07E-02
19	256529.1	4092279	-8.75E-06	3.73E-08	4.59E-02
20	256802.3	4092214	-9.37E-06	3.08E-08	5.14E-02
21	257050	4092413	-1.41E-05	2.07E-08	1.91E-02
22	256652	4089958	3.27E-06	6.74E-03	1.28E-01
23	256719.1	4090084	5.03E-06	8.34E-03	1.04E-01
24	255848.3	4089997	3.47E-07	1.51E-03	1.65E-01
25	255349	4090264	4.07E-07	2.30E-03	1.79E-01
26	257314.7	4090596	-8.98E-07	3.83E-04	6.21E-02

Receptor	X	Y	Total Cancer Risk Sum	Overall Max Chronic Hazard Index	Overall Max Acute Hazard Index
4121	255781	4090755	9.71E-06	6.62E-02	7.13E-01
4122	255808.2	4090785	1.04E-05	6.54E-02	7.28E-01
4229	255823.6	4090802	1.06E-05	6.14E-02	7.16E-01
4230	255839.2	4090820	1.08E-05	5.60E-02	7.01E-01
4231	255854.8	4090838	1.09E-05	4.98E-02	6.90E-01
4288	256001.7	4090883	1.88E-05	3.60E-02	6.94E-01
4289	256026	4090883	2.09E-05	3.57E-02	6.89E-01
6520	255904.8	4090856	1.29E-05	4.50E-02	7.29E-01
6521	255826.7	4090768	1.22E-05	8.28E-02	8.36E-01
6761	256075	4090859	3.57E-05	4.86E-02	7.38E-01
6762	256050.7	4090858	3.14E-05	4.74E-02	7.41E-01
6763	256026.4	4090858	2.72E-05	4.63E-02	7.56E-01
6764	256002.1	4090858	2.30E-05	4.55E-02	7.63E-01
6765	255977.8	4090857	1.97E-05	4.53E-02	7.45E-01
6766	255953.4	4090857	1.70E-05	4.54E-02	7.38E-01
6767	255929.1	4090857	1.48E-05	4.55E-02	7.59E-01
6768	255889.2	4090839	1.28E-05	5.25E-02	7.56E-01
6769	255873.6	4090821	1.27E-05	6.12E-02	7.88E-01
6770	255858	4090803	1.26E-05	7.00E-02	7.85E-01
6771	255842.4	4090786	1.25E-05	7.78E-02	8.25E-01
6772	255813.2	4090753	1.18E-05	8.41E-02	8.42E-01
6773	255799.6	4090738	1.13E-05	8.24E-02	8.01E-01
6775	255790	4090675	1.08E-05	8.41E-02	7.08E-01
6776	255792	4090651	1.09E-05	8.47E-02	7.45E-01
6777	255794	4090626	1.05E-05	8.08E-02	7.47E-01
6778	255796	4090602	1.01E-05	7.47E-02	7.06E-01
6779	255798	4090578	9.12E-06	6.53E-02	6.92E-01
6780	255800	4090554	8.41E-06	5.65E-02	7.06E-01

X and Y represent meters east and meters north respectivley in Universal Transverse Mercator (UTM) Zone 11
Receptor 1-26: Discrete Receptors, receptor 20 is the only chronic worker receptor
Receptor 27-6829: Fenceline Grid Receptors, Top 30 receptors shown below

Model Receptor #	Type	Excess Cancer Cases per Million People Exposed	Max Chronic Hazard Index	Max Acute Hazard Index
23	MEIR -Cancer, Chronic	2.12	0.002	0.003
24	MEIR - Acute	0.01	0.000	0.003
20	MEIW - Cancer, Chronic	-3.29	0.00	0.05
6829	Fenceline Receptor (PMI-Acute)	N/A	N/A	0.11
	Significance Threshold	20	1	1

Receptor	X	Y	Total Cancer Risk Sum	Overall Max Chronic Hazard Index	Overall Max Acute Hazard Index
1	255690	4093488	-1.90E-05	0.00E+00	1.03E-05
2	256073.5	4094417	-2.87E-05	0.00E+00	1.07E-05
3	256874.7	4094261	-2.47E-05	0.00E+00	2.40E-05
4	257235.6	4094022	-2.14E-05	0.00E+00	3.46E-05
5	257490.5	4093429	-5.72E-05	0.00E+00	2.18E-05
6	257403.3	4093258	-7.35E-05	0.00E+00	3.98E-05
7	257349.2	4093105	-5.40E-05	0.00E+00	4.96E-05
8	254725.5	4093871	-4.06E-06	0.00E+00	6.55E-06
9	254945.4	4093801	-4.08E-06	0.00E+00	2.64E-06
10	255187.9	4093695	-4.40E-06	0.00E+00	6.74E-06
11	255139.1	4093484	-4.53E-06	0.00E+00	6.20E-06
12	255231.5	4093327	-3.71E-06	0.00E+00	5.07E-06
13	255360.7	4093201	-3.65E-06	0.00E+00	6.59E-06
14	255217.3	4093081	-3.32E-06	0.00E+00	7.32E-06
15	255226.2	4092933	-3.44E-06	0.00E+00	4.50E-06
16	255233.1	4092695	-2.82E-06	0.00E+00	3.68E-06
17	255251.4	4092534	-2.25E-06	0.00E+00	4.15E-06
18	255211.7	4092374	-2.12E-06	0.00E+00	6.10E-06
19	256529.1	4092279	-5.11E-06	0.00E+00	6.97E-06
20	256802.3	4092214	-5.47E-06	0.00E+00	8.59E-06
21	257050	4092413	-8.20E-06	0.00E+00	1.43E-05
22	256652	4089958	1.36E-06	8.49E-04	3.31E-03
23	256719.1	4090084	2.12E-06	1.54E-03	2.98E-03
24	255848.3	4089997	8.41E-09	0.00E+00	3.33E-03
25	255349	4090264	-1.75E-08	0.00E+00	2.87E-03
26	257314.7	4090596	-6.22E-07	0.00E+00	3.32E-03

Receptor	X	Y	Total Cancer Risk Sum	Overall Max Chronic Hazard Index	Overall Max Acute Hazard Index
5261	256801.7	4090706	8.69E-06	7.75E-03	2.92E-02
5262	256797.3	4090683	1.36E-05	1.26E-02	4.53E-02
5263	256792.9	4090660	2.39E-05	2.26E-02	8.24E-02
5269	256826.3	4090702	6.54E-06	5.64E-03	3.32E-02
5270	256821.9	4090679	9.35E-06	8.41E-03	5.12E-02
5271	256817.5	4090656	1.41E-05	1.31E-02	7.10E-02
5276	256855.2	4090720	3.68E-06	2.83E-03	2.73E-02
5277	256850.8	4090697	4.84E-06	3.97E-03	3.77E-02
5278	256846.4	4090674	6.31E-06	5.43E-03	5.09E-02
5279	256842.1	4090651	8.34E-06	7.43E-03	5.57E-02
5288	256871	4090669	3.78E-06	2.95E-03	3.12E-02
5289	256866.6	4090646	4.19E-06	3.36E-03	2.83E-02
5532	256766	4090630	7.02E-05	6.80E-02	5.63E-02
5533	256747.4	4090614	5.39E-05	5.21E-02	3.85E-02
5534	256728.8	4090598	4.15E-05	3.99E-02	2.90E-02
5560	256800.9	4090627	3.33E-05	3.19E-02	5.22E-02
5561	256782.3	4090611	3.97E-05	3.82E-02	3.73E-02
5562	256763.7	4090595	3.40E-05	3.25E-02	2.79E-02
5589	256825.5	4090622	1.71E-05	1.60E-02	4.55E-02
5590	256798.6	4090592	2.62E-05	2.50E-02	3.27E-02
6515	256768.4	4090665	4.67E-05	4.50E-02	8.06E-02
6722	256772.8	4090688	2.04E-05	1.92E-02	4.15E-02
6723	256777.2	4090711	1.17E-05	1.07E-02	2.75E-02
6826	256694	4090601	4.72E-05	4.55E-02	3.07E-02
6827	256712.6	4090617	6.47E-05	6.26E-02	4.14E-02
6828	256731.2	4090633	9.57E-05	9.29E-02	6.34E-02
6829	256749.8	4090649	7.28E-05	7.05E-02	1.07E-01

Table H.1 Health Values for TACs Emitted by Project

CAS	TAC NAME	Inhalation Cancer URF $(\mu g/m^3)^{-1}$	Inhalation Cancer Slope Factor $(mg/kg^{-d})^{-1}$	Oral Cancer Slope Factor $(mg/kg^{-d})^{-1}$	Acute REL $(\mu g/m^3)$	Inhalation Chronic REL $(\mu g/m^3)$	Oral Chronic REL $(\mu g/m^3)$
9901	DieselExhPM	0.0003	1.1			5	
7429905	Aluminum						
7440382	Arsenic	0.0033	12	1.5	0.2	0.015	3.50E-06
7440393	Barium						
7440417	Beryllium	0.0024	8.4			0.007	0.002
7440439	Cadmium	0.0042	15			0.02	0.0005
7440473	Chromium						
7440508	Copper				100		
7439921	Lead	1.20E-05	0.042	0.0085			
7439965	Manganese					0.09	
7440020	Nickel	0.00026	0.91		0.2	0.014	0.011
7782492	Selenium					20	0.005
1175	Silica, Crystln					3	
7440666	Zinc						
85101	PM10						
42101	CO						
124389	CO2						
42603	NOX						
42401	SOX						
74828	CH4						
43104	VOC						
91576	2MeNaphthalene						
83329	Acenaphthene						
208968	Acenaphthylene						
75070	Acetaldehyde	2.70E-06	0.01		470	140	
120127	Anthracene						
71432	Benzene	2.90E-05	0.1		27	3	
56553	B[a]anthracene	0.00011	0.39	1.2			
50328	B[a]P	0.0011	3.9	12			
205992	B[b]fluoranthen	0.00011	0.39	1.2			
191242	B[g,h,i]perylen						
207089	B[k]fluoranthen	0.00011	0.39	1.2			
218019	Chrysene	1.10E-05	0.039	0.12			
4170303	Crotonaldehyde						
53703	D[a,h]anthracen	0.0012	4.1	4.1			
100414	Ethyl Benzene	2.50E-06	0.0087			2000	

CAS	TAC NAME	Inhalation Cancer URF $(\mu g/m^3)^{-1}$	Inhalation Cancer Slope Factor $(mg/kg^{-d})^{-1}$	Oral Cancer Slope Factor $(mg/kg^{-d})^{-1}$	Acute REL $(\mu g/m^3)$	Inhalation Chronic REL $(\mu g/m^3)$	Oral Chronic REL $(\mu g/m^3)$
86737	Fluorene						
206440	Fluoranthene						
50000	Formaldehyde	6.00E-06	0.021		55	9	
18540299	Cr(VI)	0.15	510	0.5		0.2	0.02
193395	In[1,2,3-cd]pyr	0.00011	0.39	1.2			
78842	Isobutyraldehyd						
7439976	Mercury				0.6	0.03	0.00016
91203	Naphthalene	3.40E-05	0.12			9	
85018	Phenanthrene						
129000	Pyrene						
106514	Quinone						
108883	Toluene				37000	300	
1330207	Xylenes				22000	700	
7440484	Cobalt						
7664417	NH3				3200	200	
7440360	Antimony						
7726956	Bromine						
7782505	Chlorine				210	0.2	
7723140	Phosphorus						
9960	SULFATES				120		
7440280	Thallium						
7440622	Vanadium				30		
540841	2,2,4TriMePentn						
74851	Ethylene						
110543	Hexane					7000	
71556	1,1,1-TCA				68000	1000	
198550	Perylene						
7440224	Silver						

Source: HARP2 output file type PolDB.csv

APPENDIX J PROJECT INCREMENT OF GROWTH IN REGIONAL AGGREGATE MARKET

Memo and Supporting Calculations

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MEMORANDUM

SESPE CONSULTING, INC.
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Date: April 21, 2026

To: Pat Mitchell, Esq.

From: Scott D. Cohen, P.E., C.I.H.

Cc: Christine Jones, Cemex

Re: Regional Aggregates Demand and Project Incremental Effect on Environment

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The Rockfield DEIR assesses off-site emissions from delivery of aggregates, ready mix concrete, and asphalt pavement by calculating potential to emit (PTE) of delivery vehicles servicing the additional production proposed by the Project. Although the off-site PTE is included in the impact analysis for the Project, Project-produced materials would substitute for some materials shipped in the baseline while providing a local source of aggregates to meet forecasted increases in demand. As discussed below, the Project's portion of the future increase in regional truck trips is much less than the PTE of those trucks. The following discussion and methodology was certified by the County of Fresno in the Riverbend Sand and Gravel Project EIR (State Clearinghouse Number 2013071097).

Potential to Emit vs CEQA

As defined in SJVAPCD Rule 2201, PTE means "the maximum capacity of an emissions unit to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including pollution control equipment and restrictions in hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is incorporated into the applicable permit as an enforceable permit condition."

In this case, the physical or operational limitation is the size of the aggregate market. From a regional perspective most aggregate related truck trips occur in the baseline and are attributed to others. The difference between PTE and CEQA approaches to emissions calculation is primarily that PTE is source-centric in quantifying emissions and does not account for baseline activities of others. Conversely, CEQA is environment-centric requiring regional impact assessment which, in the case of aggregates, would include existing truck trips for which Project truck trips may substitute or be in addition too.

The effect of acknowledging the regional baseline and attributing only the portion of new regional trips to the Project results in the reasonably foreseeable change in regional emissions of transportation-related pollutants with respect to the regional baseline levels. This approach produces an estimate for off-site truck travel that is less than the PTE for off-site truck travel. Table 1 presents a comparison of PTE and Project increment of reasonably foreseeable emissions increases within the region.

Table 1. Non-Employee Off-Site Transportation Emissions

Pollutant	Max PTE (tpy or MT/yr)[a]	Max Reasonably Foreseeable Increase (tpy or MT/yr)[b]
ROG	0.041	0.010
CO	0.20	0.046
NOx	2.23	0.41
PM10 (total)	0.052	0.012
PM2.5	0.049	0.011
SOx	0.019	0.004
CO2e	3,614	709

Note: criteria air pollutants reported in tons and CO2e reported in metric tons (MT).
a. PTE values are the maximum from the two phases of the Project (attached).
b. Reasonably foreseeable increase (attached).

California Aggregates Demand Forecasting

The California Geological Survey publishes Map Sheet 52 – Aggregates Sustainability in California and its companion report approximately every 5 years. A copy of the most recent report published in 2018 may be found in DEIR Appendix D or downloaded from the California Department of Conservation website.[1]

Map Sheet 52 is a statewide overview of projected future aggregate needs and currently permitted reserves. The purpose of the map is to compare projected aggregate demand for the next 50 years with currently permitted aggregate reserves in various production-consumptions regions of the state. The map also shows the projected years of permitted reserves remaining and highlights regions where less than 10 years of permitted aggregate supply remain.

The Project is within the Fresno and Madera P-C Region. P-C Regions are established for areas within which the aggregates production and consumption balance (i.e., not much "leakage" across P-C Region boundaries). Historically, the long-term average amount of aggregates used within a P-C region has been shown to be proportional to the population in the region. Per capita aggregates use is a primary methodology used in Map Sheet 52 demand estimates.

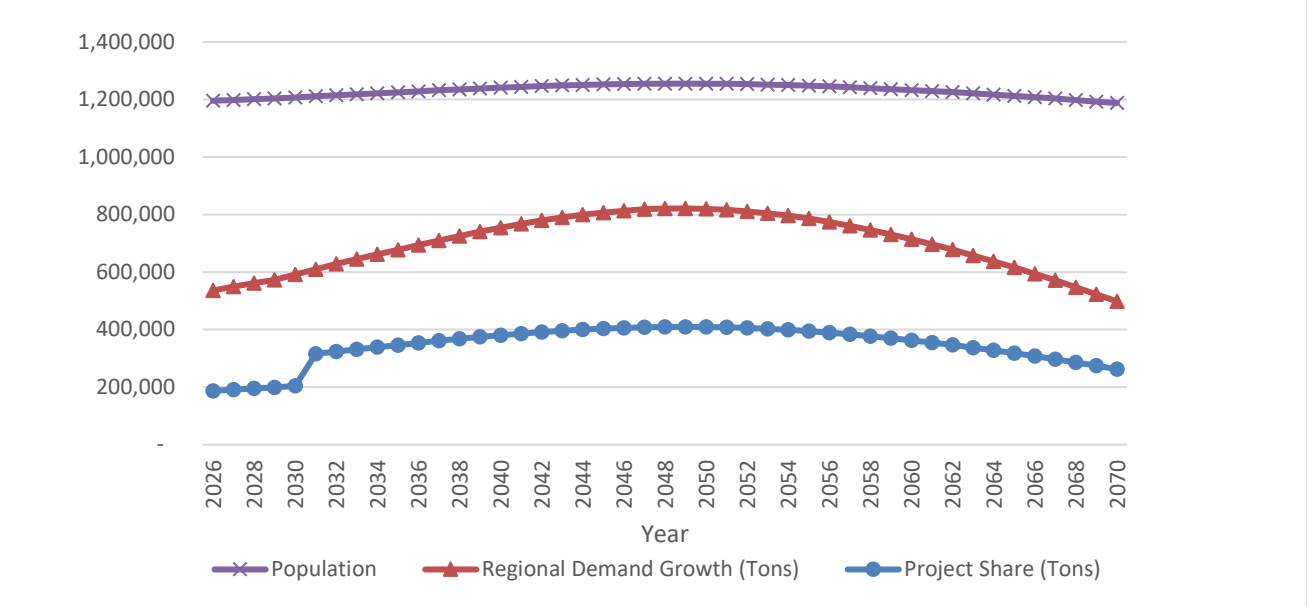
It has been demonstrated that introduction of a new source of aggregates does not increase the consumption of aggregates because the demand for aggregates is inelastic (Berck, 2005 and a copy is provided in DEIR Appendix D). Therefore, the amount of aggregates consumed is independent from the number of available aggregates resources. In the first years of a project it is foreseeable that the aggregates will primarily substitute for aggregates produced elsewhere in the baseline. Early in the Project the majority of truck trips will not be new trips.

However, the consumption of aggregates increases as time progresses if the population in the P-C Region is increasing. Table P2A population projections from the California Department of Finance[2] indicates that there will be an increase in certain years as shown in Figure 1. The California Geological Survey has determined that 4.79

[1] https://www.conservation.ca.gov/cgs/minerals/mineral-land-classification-smara
[2] https://dof.ca.gov/Forecasting/Demographics/projections/

tons per person per year are used in the Fresno-Madera P-C Region. The Region is estimated to have 1,083,705 residents in the Baseline Year of 2005. This would correspond to a demand of 5,190,947 tons per year in 2005. Between 2005 and 2026, the population of the P-C Region is forecasted to grow to 1,195,605 residents and the aggregates market size is forecasted to be 5,726,948 tons per year; an increase of 536,001 tons per year. CEQA would require assessment of the impact of the amount that exceeds baseline. In 2026 the Project would produce 2,000,000 tons per year which constitutes 34.9% of the market. Thus, the Project's incremental increase in regional aggregates use would be 34.9% of 187,186 tons. This amount corresponds to 374,371 VMT/yr for aggregates and 31,023 VMT/yr for additional truck trips (e.g., asphalt oil, cement, fuel). In 2031, the Project production would increase to 3,000,000 tons per year and remain at that level in future years. NOx emissions of 0.41 tpy in 2026 and 2031 from truck travel is the Project's incremental increase above regional baseline as compared to the NOx PTE (2.23 tpy) which is over five times greater. A similar story can be demonstrated for other pollutants.

Figure 1. Population and Change in Aggregate Demand Since Baseline – 2005



In addition to the analysis described above, the Low Carbon Fuel Standard (LCFS) has established benchmarks for the carbon intensity of fuels as described in Appendix L of this report. Figure 2 presents the increase in GHG emissions that will occur within the market and the incremental amount attributable to the Project.

By 2070, the population of the P-C Region is forecasted to be 1,187,701 residents and the aggregates market size is forecasted to be 5,689,088 tons per year which is an increase of 498,141 tons per year over the 2005 Baseline condition. Figure 1, Figure 2, and Figure 3 illustrate the relationship between market per capita demand growth, GHG and NOx emissions changes in the region and emissions changes attributable to the Project based on the portion of the market that may be served by the Project operating at peak annual rate. The emissions characteristics of the truck fleet improve over time as does the carbon intensity of the fuel.

Figure 2. Change in Transportation GHG Emissions from Baseline

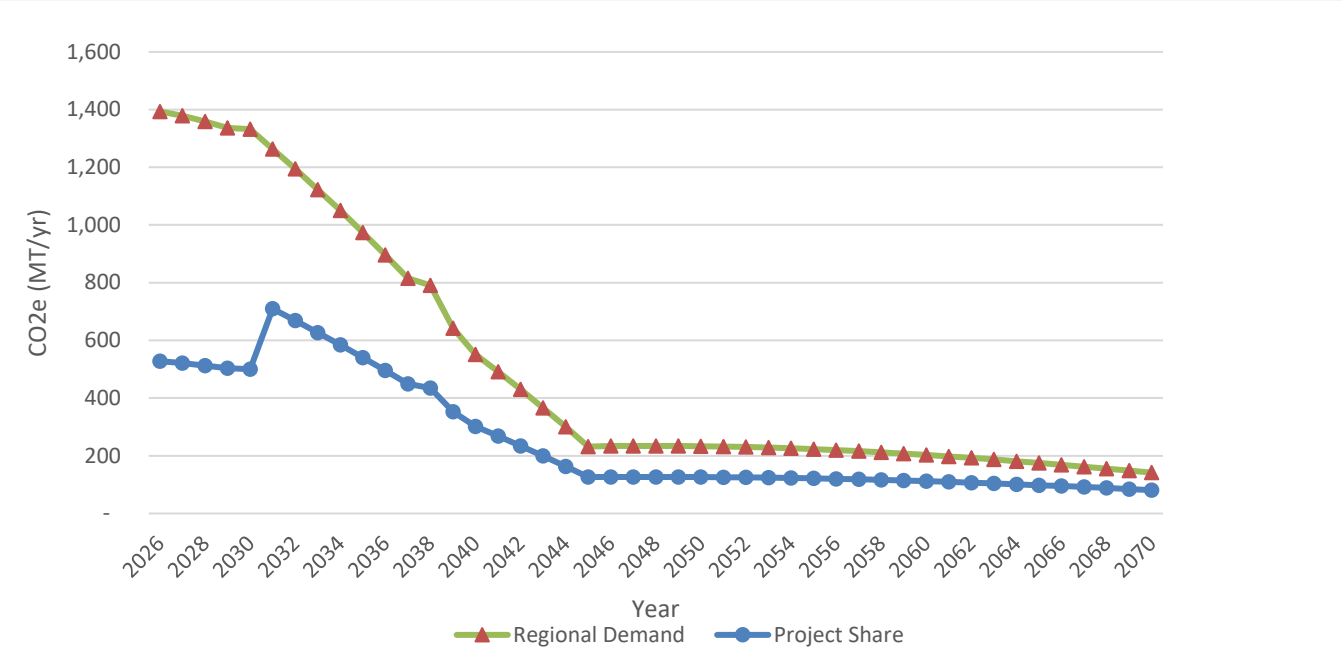
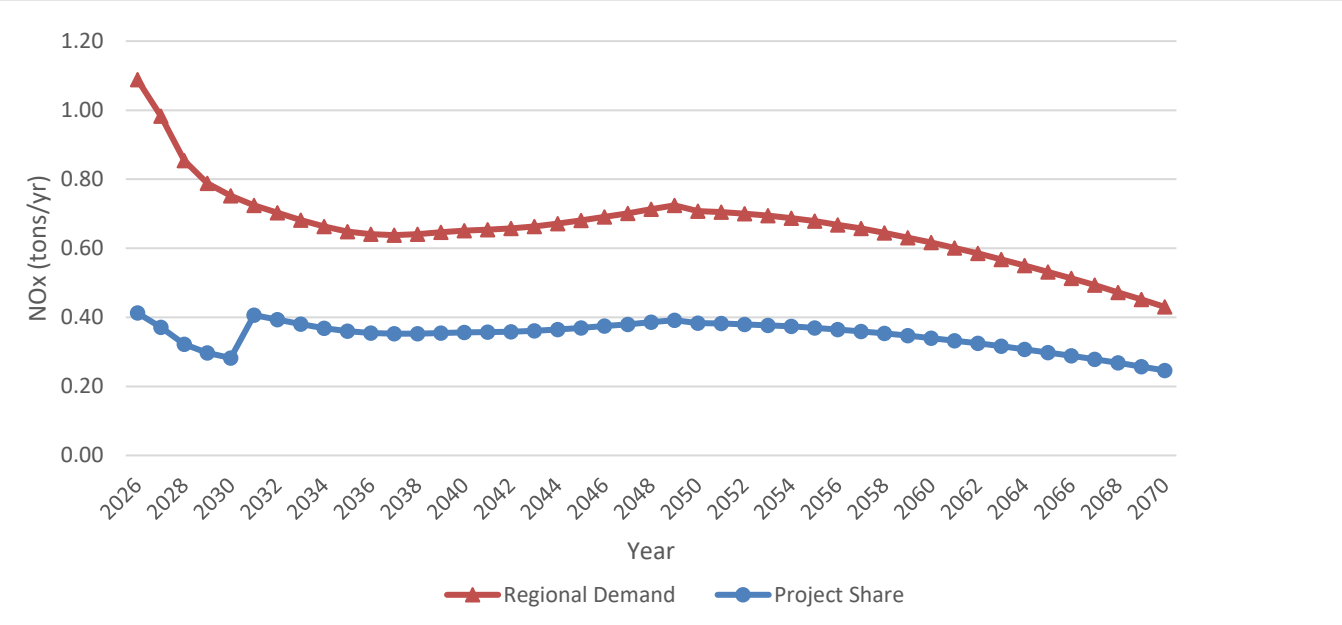


Figure 3. Change in Transportation NOx Emissions from Baseline



Regional Aggregate Demand

Global climate impacts are substantially driven by population growth which correlates to growth in demand for aggregate and related construction materials. Increased population, therefore, is the underlying trigger to any GHG emission associated with a proposed aggregate mining and processing facility.

"The assumption that each person will use a certain amount of aggregate every year is a simplification of actual usage patterns, but overall, an increase in the population leads to the use of more aggregate. Over long enough periods, perhaps 20 to 30 years or more, the random impacts of major public construction projects and economic recessions tend to be smoothed and consumption trends become similar to historic per capita consumption rates. Per capita consumption is a commonly used and accepted national, state, and regional measure for purposes of forecasting." (CGS, 2012, p. 5).

As discussed in Environmental Costs of Aggregate (Berck, 2005), demand for aggregate is inelastic. Inelastic demand means that an increase or decrease in the price of aggregate has little or no effect on the quantity of aggregate demanded by consumers.

"Transportation plays a major role in the cost of aggregate to the consumer. Aggregate is a low-unit value, high-bulk-weight commodity, and it must be obtained from nearby sources to minimize both the dollar cost to the aggregate consumer and other environmental and economic costs associated with transportation. If nearby sources do not exist, then transportation costs may significantly increase the cost of the aggregate by the time it reaches the consumer." (CGS, 2018, p. 17). "The importation of aggregate from neighboring regions typically results in longer haul distances, higher costs, and increased carbon dioxide emissions, air pollution, traffic congestion, and highway maintenance." (CGS, 2018, p. 10).

As local sources of aggregate are depleted and aggregate is hauled longer distances to the consumer, prices will increase. Given aggregate's inelastic demand, however, increased prices will not reduce the demand for aggregate. Conversely, a new aggregate mine that increases local aggregate supply and lowers local aggregate prices by reducing haul distances would have little effect on aggregate demand and, therefore, little effect on use or production.

	Baseline	Future																				
Year	2005	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
Population (Fresno+Madera)	1,083,705	1,195,605	1,198,332	1,200,877	1,203,332	1,207,346	1,211,058	1,214,792	1,218,311	1,221,845	1,225,159	1,228,489	1,231,927	1,235,190	1,238,270	1,241,157	1,243,887	1,246,391	1,248,655	1,250,559	1,252,090	1,253,452	1,254,528
Regional Market Demand (tons)	5,190,947	5,726,948	5,740,010	5,752,201	5,763,960	5,783,187	5,800,968	5,818,854	5,835,710	5,852,638	5,868,512	5,884,462	5,900,930	5,916,560	5,931,313	5,945,142	5,958,219	5,970,213	5,981,057	5,990,178	5,997,511	6,004,035	6,009,189
Regional Market Demand (truckloads)	207,638	229,078	229,600	230,088	230,558	231,327	232,039	232,754	233,428	234,106	234,740	235,378	236,037	236,662	237,253	237,806	238,329	238,809	239,242	239,607	239,900	240,161	240,368
Regional Market Demand (VMT, 50 miles r.t.)	10,381,894	11,453,896	11,480,021	11,504,402	11,527,921	11,566,375	11,601,936	11,637,707	11,671,419	11,705,275	11,737,023	11,768,925	11,801,861	11,833,120	11,862,627	11,890,284	11,916,437	11,940,426	11,962,115	11,980,355	11,995,022	12,008,070	12,018,378
Carbon Intensity Benchmark (% reduction from 2016 CI)	1.6	18.6	20.1	21.7	23.2	24.8	29.6	34.5	39.3	44.1	49.0	53.8	58.6	60.4	68.3	73.1	76.4	79.6	82.8	86.0	89.3	89.3	89.3
Regional Market Demand (CO2e, MT)	17,600	16,014	15,717	15,423	15,164	14,899	13,949	12,998	11,743	10,903	9,992	9,081	8,145	7,834	6,327	5,384	4,731	4,078	3,422	2,750	2,088	2,058	2,028
Regional Market Demand (CO2, MT)	17,450	15,877	15,583	15,292	15,028	14,743	13,763	12,798	11,474	10,600	9,668	8,744	7,814	7,487	6,012	5,101	4,473	3,848	3,206	2,573	1,951	1,921	1,891
Regional Market Demand (NOx, tons)	217	11.63	10.27	8.76	7.93	7.34	6.89	6.52	6.17	5.86	5.61	5.44	5.31	5.22	5.18	5.13	5.08	5.04	5.02	5.03	5.06	5.10	5.15
Regional Market Demand (PM2.5, tons)	8	0.17	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Regional Market Demand (PM10, tons)	8	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Regional Market Demand (CH4, MT)	0.531	0.469	0.445	0.429	0.387	0.415	0.368	0.317	0.226	0.132	0.101	0.075	0.054	0.044	0.024	0.018	0.012	0.009	0.002	0.001	0.001	0.001	0.001
Regional Market Demand (N2O, MT)	0.511	0.466	0.458	0.451	0.471	0.545	0.665	0.723	0.991	1.130	1.212	1.262	1.241	1.306	1.186	1.064	0.975	0.866	0.817	0.666	0.514	0.515	0.516
Regional Market Demand (ROG, tons)	13	0.15	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Regional Market Demand (TOG, tons)	15	0.17	0.16	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Regional Market Demand (NH3, tons)	0	2.77	2.78	2.79	2.79	2.80	2.81	2.82	2.83	2.84	2.85	2.85	2.86	2.87	2.88	2.88	2.89	2.90	2.90	2.91	2.91	2.91	2.91
Regional Market Demand (CO, tons)	45	0.80	0.73	0.67	0.64	0.61	0.60	0.59	0.59	0.59	0.59	0.59	0.59	0.60	0.61	0.61	0.62	0.62	0.63	0.63	0.62	0.62	0.61
Regional Market Demand (SOx, tons)	2	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Regional Market Growth (tons)	-	536,001	549,063	561,254	573,013	592,240	610,021	627,907	644,763	661,691	677,565	693,515	709,983	725,613	740,366	754,195	767,272	779,266	790,111	799,231	806,564	813,088	818,242
Regional Market Growth (truckloads)	-	21,440	21,963	22,450	22,921	23,690	24,401	25,116	25,791	26,468	27,103	27,741	28,399	29,025	29,615	30,168	30,691	31,171	31,604	31,969	32,263	32,524	32,730
Regional Market Growth (VMT, 50 miles r.t.)	-	1,072,002	1,098,127	1,122,508	1,146,027	1,184,481	1,220,042	1,255,813	1,289,525	1,323,381	1,355,129	1,387,031	1,419,967	1,451,226	1,480,733	1,508,390	1,534,544	1,558,532	1,580,221	1,598,461	1,613,128	1,626,176	1,636,484
Regional Market Growth (CO2e, MT)		1,393	1,378	1,359	1,337	1,332	1,264	1,195	1,123	1,050	974	896	815	791	642	551	492	430	366	300	232	234	234
Regional Market Growth (CO2, MT)	-	1,301	1,285	1,265	1,244	1,237	1,173	1,108	1,040	972	901	828	753	730	592	508	453	396	338	276	214	215	216
Regional Market Growth (NOx, tons)	-	1.09	0.98	0.85	0.79	0.75	0.72	0.70	0.68	0.66	0.65	0.64	0.64	0.64	0.65	0.65	0.65	0.66	0.66	0.67	0.68	0.69	0.70
Regional Market Growth (PM2.5, tons)	-	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Regional Market Growth (PM10, tons)	-	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Regional Market Growth (CH4, MT)	-	0.0005	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001
Regional Market Growth (N2O, MT)	-	0.35	0.35	0.35	0.35	0.36	0.34	0.33	0.31	0.30	0.28	0.26	0.23	0.23	0.19	0.16	0.15	0.13	0.11	0.09	0.07	0.07	0.07
Regional Market Growth (ROG, tons)	-	0.014	0.013	0.013	0.013	0.013	0.013	0.014	0.014	0.014	0.015	0.015	0.015	0.016	0.016	0.017	0.017	0.018	0.018	0.018	0.018	0.018	0.018
Regional Market Growth (TOG, tons)	-	0.016	0.015	0.015	0.015	0.015	0.015	0.015	0.016	0.016	0.017	0.017	0.017	0.018	0.019	0.019	0.020	0.020	0.020	0.020	0.021	0.021	0.021
Regional Market Growth (NH3, tons)	-	0.26	0.27	0.27	0.28	0.29	0.30	0.30	0.31	0.32	0.33	0.34	0.34	0.35	0.36	0.37	0.37	0.38	0.38	0.39	0.39	0.39	0.40
Regional Market Growth (CO, tons)	-	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Regional Market Growth (SOx, tons)	-	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
Project Aggregate Share of Market Annual (%)	-	34.9%	34.8%	34.8%	34.7%	34.6%	51.7%	51.6%	51.4%	51.3%	51.1%	51.0%	50.8%	50.7%	50.6%	50.5%	50.4%	50.2%	50.2%	50.1%	50.0%	50.0%	49.9%
Project Aggregate Share of Growth (tons)	-	187,186	191,311	195,144	198,826	204,815	315,475	323,727	331,457	339,176	346,373	353,566	360,952	367,923	374,470	380,577	386,326	391,577	396,306	400,271	403,449	406,271	408,495
Project Aggregate Share of Growth (truckloads)	-	7,487	7,652	7,806	7,953	8,193	12,619	12,949	13,258	13,567	13,855	14,143	14,438	14,717	14,979	15,223	15,453	15,663	15,852	16,011	16,138	16,251	16,340
Project Aggregate Share of Growth (VMT, 50 miles r.t.)	-	374,371	382,622	390,288	397,653	409,629	630,951	647,454	662,914	678,351	692,746	707,132	721,903	735,846	748,940	761,154	772,652	783,154	792,613	800,541	806,899	812,542	816,991
Project Aggregate Share of Growth (CO2e, MT)		487	480	472	464	461	654	616	577	538	498	457	414	401	325	278	248	216	184	150	116	117	117
Project Aggregate Share of Growth (CO2, MT)	-	454	448	440	432	428	607	571	535	498	461	422	383	370	299	257	228	199	169	138	107	107	108
Project Aggregate Share of Growth (Nox, tons)		0.38	0.34	0.30	0.27	0.26	0.37	0.36	0.35	0.34	0.33	0.33	0.32	0.32	0.33	0.33	0.33	0.33	0.33	0.34	0.34	0.35	0.35
Project Aggregate Share of Growth (PM2.5, tons)	-	0.005	0.005	0.005	0.005	0.005	0.008	0.008	0.009	0.009	0.009	0.009	0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Project Aggregate Share of Growth (PM10, tons)	-	0.006	0.006	0.006	0.006	0.006	0.009	0.009	0.009	0.009	0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.011	0.011	0.011	0.011	0.011	0.011
Project Aggregate Share of Growth (CH4, MT)	-	0.00017	0.00016	0.00015	0.00014	0.00014	0.00020	0.00019	0.00018	0.00017	0.00016	0.00015	0.00014	0.00013	0.00011	0.00010	0.00009	0.00008	0.00006	0.00005	0.00004	0.00004	0.00004
Project Aggregate Share of Growth (N2O, MT)	-	0.12	0.12	0.12	0.12	0.12	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.12	0.09	0.08	0.07	0.06	0.05	0.04	0.03	0.03	0.04
Project Aggregate Share of Growth (ROG, tons)	-	0.005	0.005	0.005	0.004	0.004	0.007	0.007	0.007	0.007	0.007	0.008	0.008	0.008	0.008	0.008	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Project Aggregate Share of Growth (TOG, tons)	-	0.006	0.005	0.005	0.005	0.005	0.008	0.008	0.008	0.008	0.008	0.009	0.009	0.009	0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Project Aggregate Share of Growth (NH3, tons)	-	0.09	0.09	0.09	0.10	0.10	0.15	0.16	0.16	0.16	0.17	0.17	0.18	0.18	0.18	0.18	0.19	0.19	0.19	0.19	0.20	0.20	0.20
Project Aggregate Share of Growth (CO, tons)	-	0.03	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Project Aggregate Share of Growth (SOx, tons)	-	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004
Project non- Aggregate Additional (VMT)	-	341,086.77	341,086.77	341,086.77	341,086.77	341,086.77	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16
Project Additional Share of Market Annual (%)		3%	3%	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Project Additional Share of Growth (VMT)		31,923.26	32,626.81	33,280.53	33,908.50	34,929.76	53,802.24	55,209.50	56,527.84	57,844.15	59,071.62	60,298.35	61,557.90	62,746.86	63,863.39	64,904.92	65,885.36	66,780.86	67,587.44	68,263.50	68,805.63	69,286.80	69,666.20
Project Additional (CO2e, MT)		41.49	40.95	40.28	39.56	39.28	55.74	52.53	49.22	45.90	42.47	38.96	35.32	34.18	27.68	23.72	21.11	18.43	15.67	12.82	9.91	9.95	9.98
Project Additional (CO2, MT)		38.74	38.19	37.52	36.80	36.49	51.72	48.70	45.58	42.47	39.28	36.00	32.62	31.55	25.53	21.88	19.46	16.99	14.44	11.81	9.13	9.16	9.18
Project Additional (Nox, tons)		0.03	0.03	0.03	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Project Additional (PM2.5, tons)	-	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Project Additional (PM10, tons)	-	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Project Additional (CH4, MT)	-	0.000014	0.000013	0.000013	0.000012	0.000012	0.000017	0.000016	0.000016	0.000015	0.000014	0.000013	0.000012	0.000011	0.000009	0.000008	0.000007	0.000006	0.000006	0.000005	0.000003	0.000003	0.000003
Project Additional (N2O, MT)	-	0.010	0.010	0.010	0.010	0.011	0.015	0.014	0.014	0.013	0.012	0.011	0.010	0.010	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.003	0.003
Project Additional (ROG, tons)	-	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Project Additional (TOG, tons)	-	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Project Additional (NH3, tons)	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Project Additional (CO, tons)	-	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004
Project Additional (SOx, tons)	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003
	MAXIMUMS																						
Project Share + Additional (CO2e, MT)	709	528	521	513	504	500	709	669	626	584	541	496	450	435	352	302	269	235	199	163	126	127	127
Project Share + Additional (CO2, MT)	658	493	486	477	468	464	658	620	580	541	500	458	415	402	325	278	248	216	184	150	116	117	117
Project Share + Additional (NOx, tons)	0.412	0.41	0.37	0.32	0.30	0.28	0.41	0.39	0.38	0.37	0.36	0.35	0.35	0.35	0.35	0.36	0.36	0.36	0.36	0.37	0.37	0.37	0.38
Project Share + Additional (PM2.5, tons)	0.011	0.006	0.006	0.006	0.006	0.006	0.009	0.009	0.009	0.010	0.010	0.010	0.010	0.010	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
Project Share + Additional (PM10, tons)	0.012	0.006	0.006	0.006	0.006	0.006	0.009	0.010	0.010	0.010	0.010	0.010	0.011	0.011	0.011	0.011	0.011	0.012	0.012	0.012	0.012	0.012	0.012
Project Share + Additional (CH4, MT)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Project Share + Additional (N2O, MT)	0.193	0.1321	0.1325	0.1326	0.1325	0.1337	0.1927	0.1842	0.17	0.16	0.15	0.14	0.13	0.13	0.10	0.09	0.08	0.07	0.06	0.05	0.04	0.04	0.04
Project Share + Additional (ROG, tons)	0.010	0.005	0.005	0.005	0.005	0.005	0.007	0.008	0.008	0.008	0.008	0.008	0.008	0.009	0.009	0.009	0.009	0.010	0.010	0.010	0.010	0.010	0.010
Project Share + Additional (TOG, tons)	0.011	0.006	0.006	0.006	0.005	0.006	0.008	0.009	0.009	0.009	0.009	0.009	0.010	0.010	0.010	0.010	0.011	0.011	0.011	0.011	0.011	0.011	0.011
Project Share + Additional (NH3, tons)	0.216	0.10	0.10	0.10	0.10	0.11	0.17	0.17	0.17	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.21	0.21	0.21	0.22
Project Share + Additional (CO, tons)	0.046	0.03	0.03	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05
Project Share + Additional (SOx, tons)	0.004	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004

Reference Data	**Value**	**Units**
Total Project Aggregate Sales (through 2026-2030)	2,000,000	tons/yr
Total Project Aggregate Sales (2031 and after)	3,000,000	tons/yr
Truck Capacity	25	tons/truck load
Trip Length	50	miles/round trip
Aggregate Demand:	4.79	tons per capita*
50-Year Aggregate Demand:	265	MMtons (CGS, 2018)
Project Data from Emissions Calculations Activity Level Sheet:		
Asphalt Plant Export	500000	tons
Asphalt Material Imports:	25000	tons
Ready Mix Plant Export	603000	tons
Ready Mix Material Imports:	70500	tons
Asphalt oil per import load	27	tons
Cement/supplement per import load	27	tons
Per AP42 Page 11.12-10, 1 yard of concrete contains:		
Coarse Aggregate	1865	lbs
Sand	1428	lbs
Cement	491	lbs
Cement Supplement	73	lbs
Water	167	lbs
Total Weight	4024	lbs
GWP - CH4	28	CO2e/CH4
GWP - N2O	265	CO2e/N2O

Additional Trips Data	**Value**	**Units**
Site Services and Fuel Delivery Trips	1,388	Round Trips
Asphalt Material Import Trips	926	Round Trips
Ready Mix Material Import Trips	2,611	Round Trips
Non-Aggregate Concrete Export Trips	4,382	Round Trips
Non-Aggregate Asphalt Export Trips	926	Round Trips

Notes

EMFAC Emissions are projected until the year 2050. After 2050, emissions factors from 2050 are used.

Total Project Aggregate sales includes aggregate sold in asphalt and ready mixed concrete. "Additional trips" calculation accounts for additional material such as asphalt binder, cement, and water, as well as facility imports. For example,"non-aggregate concrete export trips" accounts for the additional total number of trips that are accounted for by the addition of cement, water, etc. to the aggregate that is exported in the form of "Project Additional Share" is calculated as the percentage of non-aggregate additional VMT divided by the overall regional VMT growth.

*Per capita consumption is approximated assuming that the Fresno P-C region population used in Map Sheet 52 equals the Department of Finance population projections for Fresno and Madera County. Precision of the absolute number of people and resulting per capita use rate are not as important as relative population growth (DoF) and 50-year Demand (MS52) in evaluating project impacts. Per capita use was adjusted iteratively by hand until the 50-year demand summed to the amount in Map Sheet 52.

Year	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070
Population (Fresno+Madera)	1,255,080	1,255,116	1,254,855	1,254,186	1,253,055	1,251,589	1,249,943	1,247,824	1,245,271	1,242,617	1,239,550	1,236,250	1,232,755	1,229,035	1,225,248	1,220,979	1,216,676	1,212,231	1,207,802	1,202,949	1,197,975	1,192,852	1,187,701
Regional Market Demand (tons)	6,011,833	6,012,006	6,010,755	6,007,551	6,002,133	5,995,111	5,987,227	5,977,077	5,964,848	5,952,135	5,937,445	5,921,638	5,904,896	5,887,078	5,868,938	5,848,489	5,827,878	5,806,586	5,785,372	5,762,126	5,738,300	5,713,761	5,689,088
Regional Market Demand (truckloads)	240,473	240,480	240,430	240,302	240,085	239,804	239,489	239,083	238,594	238,085	237,498	236,866	236,196	235,483	234,758	233,940	233,115	232,263	231,415	230,485	229,532	228,550	227,564
Regional Market Demand (VMT, 50 miles r.t.)	12,023,666	12,024,011	12,021,511	12,015,102	12,004,267	11,990,223	11,974,454	11,954,154	11,929,696	11,904,271	11,874,889	11,843,275	11,809,793	11,774,155	11,737,876	11,696,979	11,655,756	11,613,173	11,570,743	11,524,251	11,476,601	11,427,522	11,378,176
Carbon Intensity Benchmark (% reduction from 2016 CI)	89.3	89.3	89.3	89.3	89.3	89.3	89.3	89.3	89.3	89.3	89.3	89.3	89.3	89.3	89.3	89.3	89.3	89.3	89.3	89.3	89.3	89.3	89.3
Regional Market Demand (CO2e, MT)	1,995	1,962	1,930	1,899	1,872	1,847	1,826	1,809	1,792	1,774	1,756	1,739	1,726	1,714	1,704	1,694	1,684	1,673	1,662	1,650	1,638	1,628	1,618
Regional Market Demand (CO2, MT)	1,858	1,825	1,793	1,763	1,735	1,710	1,690	1,673	1,656	1,638	1,620	1,605	1,591	1,580	1,571	1,561	1,551	1,541	1,530	1,519	1,508	1,497	1,488
Regional Market Demand (NOx, tons)	5.22	5.30	5.19	5.19	5.18	5.18	5.17	5.16	5.15	5.14	5.13	5.11	5.10	5.08	5.07	5.05	5.03	5.01	5.00	4.98	4.95	4.93	4.91
Regional Market Demand (PM2.5, tons)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14
Regional Market Demand (PM10, tons)	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Regional Market Demand (CH4, MT)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Regional Market Demand (N2O, MT)	0.516	0.516	0.516	0.516	0.516	0.515	0.514	0.513	0.512	0.511	0.510	0.509	0.507	0.506	0.504	0.502	0.501	0.499	0.497	0.495	0.493	0.491	0.489
Regional Market Demand (ROG, tons)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Regional Market Demand (TOG, tons)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Regional Market Demand (NH3, tons)	2.92	2.92	2.92	2.91	2.91	2.91	2.90	2.90	2.89	2.89	2.88	2.87	2.86	2.86	2.85	2.84	2.83	2.82	2.81	2.79	2.78	2.77	2.76
Regional Market Demand (CO, tons)	0.61	0.60	0.60	0.60	0.60	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.58	0.58	0.58	0.58	0.58	0.57	0.57	0.57	0.57	0.56
Regional Market Demand (SOx, tons)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Regional Market Growth (tons)	820,886	821,059	819,809	816,604	811,187	804,164	796,280	786,130	773,901	761,188	746,498	730,691	713,950	696,131	677,991	657,542	636,931	615,640	594,425	571,179	547,353	522,814	498,141
Regional Market Growth (truckloads)	32,835	32,842	32,792	32,664	32,447	32,167	31,851	31,445	30,956	30,448	29,860	29,228	28,558	27,845	27,120	26,302	25,477	24,626	23,777	22,847	21,894	20,913	19,926
Regional Market Growth (VMT, 50 miles r.t.)	1,641,773	1,642,117	1,639,617	1,633,208	1,622,373	1,608,329	1,592,560	1,572,260	1,547,802	1,522,377	1,492,995	1,461,381	1,427,899	1,392,261	1,355,982	1,315,085	1,273,862	1,231,279	1,188,849	1,142,358	1,094,707	1,045,628	996,282
Regional Market Growth (CO2e, MT)	234	234	233	232	231	229	226	224	220	216	212	208	203	198	193	187	181	175	169	162	156	149	142
Regional Market Growth (CO2, MT)	216	215	214	214	212	210	208	206	202	199	195	191	187	182	177	172	167	161	155	149	143	137	130
Regional Market Growth (NOx, tons)	0.71	0.72	0.71	0.71	0.70	0.69	0.69	0.68	0.67	0.66	0.64	0.63	0.62	0.60	0.59	0.57	0.55	0.53	0.51	0.49	0.47	0.45	0.43
Regional Market Growth (PM2.5, tons)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01
Regional Market Growth (PM10, tons)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01
Regional Market Growth (CH4, MT)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000
Regional Market Growth (N2O, MT)	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.04	0.04
Regional Market Growth (ROG, tons)	0.018	0.018	0.018	0.017	0.017	0.017	0.017	0.017	0.017	0.016	0.016	0.016	0.015	0.015	0.014	0.014	0.014	0.013	0.013	0.012	0.012	0.011	0.011
Regional Market Growth (TOG, tons)	0.020	0.020	0.020	0.020	0.020	0.020	0.019	0.019	0.019	0.019	0.018	0.018	0.017	0.017	0.017	0.016	0.016	0.015	0.014	0.014	0.013	0.013	0.012
Regional Market Growth (NH3, tons)	0.40	0.40	0.40	0.40	0.39	0.39	0.39	0.38	0.38	0.37	0.36	0.35	0.35	0.34	0.33	0.32	0.31	0.30	0.29	0.28	0.27	0.25	0.24
Regional Market Growth (CO, tons)	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05
Regional Market Growth (SOx, tons)	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.006	0.006	0.006	0.006	0.006	0.006	0.005	0.005	0.005	0.005	0.005	0.004
Project Aggregate Share of Market Annual (%)	49.9%	49.9%	49.9%	49.9%	50.0%	50.0%	50.1%	50.2%	50.3%	50.4%	50.5%	50.7%	50.8%	51.0%	51.1%	51.3%	51.5%	51.7%	51.9%	52.1%	52.3%	52.5%	52.7%
Project Aggregate Share of Growth (tons)	409,635	409,710	409,171	407,789	405,449	402,410	398,989	394,572	389,231	383,655	377,181	370,180	362,724	354,742	346,566	337,288	327,871	318,073	308,238	297,379	286,158	274,503	262,682
Project Aggregate Share of Growth (truckloads)	16,385	16,388	16,367	16,312	16,218	16,096	15,960	15,783	15,569	15,346	15,087	14,807	14,509	14,190	13,863	13,492	13,115	12,723	12,330	11,895	11,446	10,980	10,507
Project Aggregate Share of Growth (VMT, 50 miles r.t.)	819,270	819,419	818,342	815,578	810,898	804,820	797,979	789,145	778,462	767,310	754,362	740,360	725,448	709,483	693,132	674,577	655,742	636,146	616,477	594,758	572,316	549,005	525,365
Project Aggregate Share of Growth (CO2e, MT)	117	117	116	116	115	114	113	112	111	109	107	105	103	101	99	96	93	90	88	85	81	78	75
Project Aggregate Share of Growth (CO2, MT)	108	107	107	107	106	105	104	103	102	100	99	97	95	93	91	88	86	83	81	78	75	72	69
Project Aggregate Share of Growth (Nox, tons)	0.36	0.36	0.35	0.35	0.35	0.35	0.34	0.34	0.34	0.33	0.33	0.32	0.31	0.31	0.30	0.29	0.28	0.27	0.27	0.26	0.25	0.24	0.23
Project Aggregate Share of Growth (PM2.5, tons)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.009	0.009	0.009	0.009	0.009	0.008	0.008	0.008	0.008	0.007	0.007	0.007
Project Aggregate Share of Growth (PM10, tons)	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.010	0.010	0.010	0.010	0.010	0.010	0.009	0.009	0.009	0.009	0.008	0.008	0.008	0.008	0.007	0.007
Project Aggregate Share of Growth (CH4, MT)	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003
Project Aggregate Share of Growth (N2O, MT)	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02
Project Aggregate Share of Growth (ROG, tons)	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.007	0.007	0.007	0.007	0.007	0.006	0.006	0.006	0.006
Project Aggregate Share of Growth (TOG, tons)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.009	0.009	0.009	0.009	0.009	0.009	0.008	0.008	0.008	0.008	0.008	0.007	0.007	0.007	0.006
Project Aggregate Share of Growth (NH3, tons)	0.20	0.20	0.20	0.20	0.20	0.20	0.19	0.19	0.19	0.19	0.18	0.18	0.18	0.17	0.17	0.16	0.16	0.15	0.15	0.14	0.14	0.13	0.13
Project Aggregate Share of Growth (CO, tons)	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Project Aggregate Share of Growth (SOx, tons)	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002
Project non- Aggregate Additional (VMT)	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16	511,630.16
Project Additional Share of Market Annual (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Project Additional Share of Growth (VMT)	69,860.58	69,873.25	69,781.37	69,545.68	69,146.66	68,628.37	68,045.00	67,291.73	66,380.76	65,429.79	64,325.76	63,131.75	61,860.20	60,498.86	59,104.50	57,522.30	55,916.26	54,245.25	52,568.03	50,716.05	48,802.34	46,814.61	44,798.72
Project Additional (CO2e, MT)	9.97	9.95	9.92	9.89	9.83	9.76	9.67	9.57	9.44	9.30	9.14	8.97	8.79	8.60	8.40	8.18	7.95	7.71	7.47	7.21	6.94	6.66	6.37
Project Additional (CO2, MT)	9.18	9.16	9.13	9.10	9.04	8.98	8.90	8.80	8.68	8.56	8.41	8.26	8.09	7.91	7.73	7.52	7.31	7.09	6.87	6.63	6.38	6.12	5.86
Project Additional (Nox, tons)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Project Additional (PM2.5, tons)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Project Additional (PM10, tons)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Project Additional (CH4, MT)	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000002	0.000002	0.000002	0.000002
Project Additional (N2O, MT)	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Project Additional (ROG, tons)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000
Project Additional (TOG, tons)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Project Additional (NH3, tons)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Project Additional (CO, tons)	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002
Project Additional (SOx, tons)	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Project Share + Additional (CO2e, MT)	127	127	126	126	125	124	123	122	120	118	116	114	112	109	107	104	101	98	95	92	88	85	81
Project Share + Additional (CO2, MT)	117	117	116	116	115	114	113	112	110	109	107	105	103	101	98	96	93	90	87	84	81	78	75
Project Share + Additional (NOx, tons)	0.39	0.39	0.38	0.38	0.38	0.38	0.37	0.37	0.36	0.36	0.35	0.35	0.34	0.33	0.32	0.32	0.31	0.30	0.29	0.28	0.27	0.26	0.25
Project Share + Additional (PM2.5, tons)	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.010	0.010	0.010	0.010	0.010	0.009	0.009	0.009	0.008	0.008	0.008	0.008	0.007
Project Share + Additional (PM10, tons)	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011	0.011	0.011	0.011	0.010	0.010	0.010	0.010	0.009	0.009	0.009	0.009	0.008	0.008	0.008
Project Share + Additional (CH4, MT)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Project Share + Additional (N2O, MT)	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02
Project Share + Additional (ROG, tons)	0.010	0.010	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.008	0.008	0.008	0.008	0.008	0.007	0.007	0.007	0.007	0.006	0.006
Project Share + Additional (TOG, tons)	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.010	0.010	0.010	0.010	0.010	0.010	0.009	0.009	0.009	0.009	0.008	0.008	0.008	0.008	0.007	0.007
Project Share + Additional (NH3, tons)	0.22	0.22	0.22	0.21	0.21	0.21	0.21	0.21	0.20	0.20	0.20	0.19	0.19	0.19	0.18	0.18	0.17	0.17	0.16	0.16	0.15	0.14	0.14
Project Share + Additional (CO, tons)	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03
Project Share + Additional (SOx, tons)	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003

Reference Data	**Value**	**Units**
Total Project Aggregate Sales (through 2026-2030)	2,000,000	tons/yr
Total Project Aggregate Sales (2031 and after)	3,000,000	tons/yr
Truck Capacity	25	tons/truck load
Trip Length	50	miles/round trip
Aggregate Demand:	4.79	tons per capita*
50-Year Aggregate Demand:	130	MMtons (CGS, 2018)
Project Data from Emissions Calculations Activity Level Sheet:		
Asphalt Plant Export	500000	tons
Asphalt Material Imports:	25000	tons
Ready Mix Plant Export	603000	tons
Ready Mix Material Imports:	70500	tons
Asphalt oil per Import load	27	tons
Cement/supplement per import load	27	tons
Per AP42 Page 11.12-10, 1 yard of concrete contains:		
Coarse Aggregate	1865	lbs
Sand	1428	lbs
Cement	491	lbs
Cement Supplement	73	lbs
Water	167	lbs
Total Weight	4024	lbs
GWP - CH4	28	CO2e/CH4
GWP - N2O	265	CO2e/N2O

Additional Trips Data	**Value**	**Units**
Site Services and Fuel Delivery Trips	1,388	Round Trips
Asphalt Material Import Trips	926	Round Trips
Ready Mix Material Import Trips	2,611	Round Trips
Non-Aggregate Concrete Export Trips	4,382	Round Trips
Non-Aggregate Asphalt Export Trips	926	Round Trips

Notes

EMFAC Emissions are projected until the year 2050. After 2050, emissions factors from 2050 are used.

Total Project Aggregate sales includes aggregate sold in asphalt and ready mixed concrete. "Additional trips" calculation accounts for additional material such as asphalt binder, cement, and water, as well as facility imports. For example,"non-aggregate concrete export trips" accounts for the additional total number of trips that are accounted for by the addition of cement, water, etc. to the aggregate that is exported in the form of concrete

"Project Additional Share" is calculated as the percentage of non-aggregate additional VMT divided by the overall regional VMT growth.

*Per capita consumption is approximated assuming that the Fresno P-C region population used in Map Sheet 52 equals the Department of Finance population projections for Fresno and Madera County. Precision of the absolute number of people and resulting per capita use rate are not as important as relative population growth (DoF) and 50-year Demand (MS52) in evaluating project impacts. Per capita use was adjusted iteratively by hand until the 50-year demand summed to the amount in Map Sheet 52.

	Baseline	Future	
Year	2005	2026	2031
Production (tons)	1,580,413	2,000,000	3,000,000
Production (truckloads)	63,217	80,000	41,096
Production (VMT, 50 miles r.t.)	3,160,826	4,000,000	6,863,014
Carbon Intensity Benchmark (% reduction from 2016 CI)	1.6	18.6	29.6
Production (CO2e, MT)	5,359	5,592	8,141
Production (CO2, MT)	5,313	5,545	8,141
Production (NOx, tons)	66	4.06	4.07
Production (PM2.5, tons)	2	0.06	0.09
Production (PM10, tons)	2	0.06	0.09
Production (CH4, MT)	0.162	0.164	0.218
Production (N2O, MT)	0.156	0.163	0.393
Production (ROG, tons)	4	0.05	0.07
Production (TOG, tons)	4	0.06	0.08
Production (NH3, tons)	0	0.97	1.66
Production (CO, tons)	14	0.28	0.36
Production (SOx, tons)	1	0.02	0.03
Growth (tons)	-	419,587	1,419,587
Growth (truckloads)	-	16,783	19,446
Growth (VMT, 50 miles r.t.)	-	839,174	3,247,549
Growth (CO2e, MT)		1,091	3,122
Growth (CO2, MT)	-	1,018	3,122
Growth (NOx, tons)	-	0.85	1.93
Growth (PM2.5, tons)	-	0.01	0.04
Growth (PM10, tons)	-	0.01	0.04
Growth (CH4, MT)	-	0.0004	0.0010
Growth (N2O, MT)	-	0.27	0.91
Growth (ROG, tons)	-	0.011	0.035
Growth (TOG, tons)	-	0.012	0.040
Growth (NH3, tons)	-	0.20	0.79
Growth (CO, tons)	-	0.06	0.17
Growth (SOx, tons)	-	0.005	0.016
Project non- Aggregate (VMT)	-	341,086.77	511,630.16
Project Non-Aggregate (CO2e, MT)		443.33	491.87
Project Non-Aggregate (CO2, MT)		413.92	491.87
Project Non-Aggregate (Nox, tons)		0.35	0.30
Project Non-Aggregate (PM2.5, tons)		0.005	0.007
Project Non-Aggregate (PM10, tons)		0.005	0.007
Project Non-Aggregate (CH4, MT)		0.000153	0.000165
Project Non-Aggregate (N2O, MT)		0.111	0.143985
Project Non-Aggregate (ROG, tons)		0.004	0.005549
Project Non-Aggregate (TOG, tons)		0.005	0.006317
Project Non-Aggregate (NH3, tons)		0.08	0.124048
Project Non-Aggregate (CO, tons)		0.024	0.026488
Project Non-Aggregate (SOx, tons)		0.0018	0.002530
Project Share + Additional (CO2e, MT)		1,534	3,614
Project Share + Additional (CO2, MT)		1,432	3,614
Project Share + Additional (NOx, tons)		1.198	2.231
Project Share + Additional (PM2.5, tons)		0.017	0.049
Project Share + Additional (PM10, tons)		0.018	0.052
Project Share + Additional (CH4, MT)		0.001	0.001
Project Share + Additional (N2O, MT)		0.384	1.058
Project Share + Additional (ROG, tons)		0.015	0.041
Project Share + Additional (TOG, tons)		0.018	0.046
Project Share + Additional (NH3, tons)		0.286	0.911
Project Share + Additional (CO, tons)		0.082	0.195
Project Share + Additional (SOx, tons)		0.006	0.019

Reference Data	**Value**	**Units**
Total Project Aggregate Sales (through 2055)	2,000,000	tons/yr
Total Project Aggregate Sales (2056 and after)	3,000,000	tons/yr
Truck Capacity	25	tons/truck load
Trip Length	50	miles/round trip
Aggregate Demand:	4.79	tons per capita*
50-Year Aggregate Demand:	2	MMtons (CGS, 2018)
Project Data from Emissions Calculations Activity Level Sheet:		
Asphalt Plant Export	500000	tons
Asphalt Material Imports:	25000	tons
Ready Mix Plant Export	603000	tons
Ready Mix Material Imports:	70500	tons
Asphalt oil per Import load	27	tons
Cement/supplement per import load	27	tons
Per AP42 Page 11.12-10, 1 yard of concrete contains:		
Coarse Aggregate	1865	lbs
Sand	1428	lbs
Cement	491	lbs
Cement Supplement	73	lbs
Water	167	lbs
Total Weight	4024	lbs
GWP - CH4	28	CO2e/CH4
GWP - N2O	265	CO2e/N2O

Source: EMFAC2025 (v2.0.0) Emission Rates
Region Type: Sub-Area
Region: Fresno (SJV)
Calendar Year: 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 202
Season: Annual
Vehicle Classification: EMFAC202Y Categories
Units: miles/day for Combustion VMT and Electric VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTS

Region	Calendar Year	Vehicle Ca	Model Yea	Speed	Fuel	Populatior	Total VMT	CVMT	EVMT	Trips
Fresno (SJV)	2005	T7 Tractor	Aggregate	Aggregate	Diesel	4025.01	356489.1	356489.1	0	58483.4
Fresno (SJV)	2006	T7 Tractor	Aggregate	Aggregate	Diesel	4468.24	357672.1	357672.1	0	64923.53
Fresno (SJV)	2007	T7 Tractor	Aggregate	Aggregate	Diesel	4375.63	369567.2	369567.2	0	63577.91
Fresno (SJV)	2008	T7 Tractor	Aggregate	Aggregate	Diesel	4605.447	340666.4	340666.4	0	66917.14
Fresno (SJV)	2009	T7 Tractor	Aggregate	Aggregate	Diesel	4168.896	315480.5	315480.5	0	60574.05
Fresno (SJV)	2010	T7 Tractor	Aggregate	Aggregate	Diesel	4241.012	309961.7	309961.7	0	61621.91
Fresno (SJV)	2011	T7 Tractor	Aggregate	Aggregate	Diesel	4060.419	308762.5	308762.5	0	58997.89
Fresno (SJV)	2012	T7 Tractor	Aggregate	Aggregate	Diesel	3758.231	299454.6	299454.6	0	54607.1
Fresno (SJV)	2013	T7 Tractor	Aggregate	Aggregate	Diesel	3922.195	315178.5	315178.5	0	56989.49
Fresno (SJV)	2014	T7 Tractor	Aggregate	Aggregate	Diesel	3768.983	308165.5	308165.5	0	54763.32
Fresno (SJV)	2015	T7 Tractor	Aggregate	Aggregate	Diesel	3723.011	299641.2	299641.2	0	54095.36
Fresno (SJV)	2016	T7 Tractor	Aggregate	Aggregate	Diesel	3704.241	307163	307163	0	53822.62
Fresno (SJV)	2017	T7 Tractor	Aggregate	Aggregate	Diesel	3611.413	314164.4	314164.4	0	52473.83
Fresno (SJV)	2018	T7 Tractor	Aggregate	Aggregate	Diesel	3490.146	297158.5	297158.5	0	50711.82
Fresno (SJV)	2019	T7 Tractor	Aggregate	Aggregate	Diesel	2866.015	289491.8	289491.8	0	41643.19
Fresno (SJV)	2020	T7 Tractor	Aggregate	Aggregate	Diesel	3411.947	301407.6	301407.6	0	49575.59
Fresno (SJV)	2021	T7 Tractor	Aggregate	Aggregate	Diesel	3626.091	304163.3	304163.3	0	52687.11
Fresno (SJV)	2022	T7 Tractor	Aggregate	Aggregate	Diesel	4242.504	322550	322550	0	61643.59
Fresno (SJV)	2023	T7 Tractor	Aggregate	Aggregate	Diesel	4144.811	327897.2	327897.2	0	60224.11
Fresno (SJV)	2024	T7 Tractor	Aggregate	Aggregate	Diesel	3611.346	298032.5	298032.5	0	52472.86
Fresno (SJV)	2025	T7 Tractor	Aggregate	Aggregate	Diesel	3654.893	301901.1	301901.1	0	53105.59
Fresno (SJV)	2026	T7 Tractor	Aggregate	Aggregate	Diesel	3693.909	305088.4	305088.4	0	53672.5
Fresno (SJV)	2027	T7 Tractor	Aggregate	Aggregate	Diesel	3714.49	307271.7	307271.7	0	53971.54
Fresno (SJV)	2028	T7 Tractor	Aggregate	Aggregate	Diesel	3720.351	307282.2	307282.2	0	54056.71
Fresno (SJV)	2029	T7 Tractor	Aggregate	Aggregate	Diesel	3695.113	306107.6	306107.6	0	53689.99
Fresno (SJV)	2030	T7 Tractor	Aggregate	Aggregate	Diesel	3668.644	304176.3	304176.3	0	53305.39
Fresno (SJV)	2031	T7 Tractor	Aggregate	Aggregate	Diesel	3664.059	302774.5	302774.5	0	53238.78
Fresno (SJV)	2032	T7 Tractor	Aggregate	Aggregate	Diesel	3643.804	299843.4	299843.4	0	52944.48
Fresno (SJV)	2033	T7 Tractor	Aggregate	Aggregate	Diesel	3608.569	295423.5	295423.5	0	52432.5
Fresno (SJV)	2034	T7 Tractor	Aggregate	Aggregate	Diesel	3551.967	290723.7	290723.7	0	51610.08
Fresno (SJV)	2035	T7 Tractor	Aggregate	Aggregate	Diesel	3462.443	284931.3	284931.3	0	50309.29
Fresno (SJV)	2036	T7 Tractor	Aggregate	Aggregate	Diesel	3347.139	273891.7	273891.7	0	48633.92
Fresno (SJV)	2037	T7 Tractor	Aggregate	Aggregate	Diesel	3141.742	254621.5	254621.5	0	45649.51
Fresno (SJV)	2038	T7 Tractor	Aggregate	Aggregate	Diesel	2884.227	230888.2	230888.2	0	41907.82
Fresno (SJV)	2039	T7 Tractor	Aggregate	Aggregate	Diesel	2608.874	205954.1	205954.1	0	37906.94
Fresno (SJV)	2040	T7 Tractor	Aggregate	Aggregate	Diesel	2325.417	180309.6	180309.6	0	33788.3
Fresno (SJV)	2041	T7 Tractor	Aggregate	Aggregate	Diesel	2051.122	157186.3	157186.3	0	29802.8
Fresno (SJV)	2042	T7 Tractor	Aggregate	Aggregate	Diesel	1777.493	134620.1	134620.1	0	25826.98
Fresno (SJV)	2043	T7 Tractor	Aggregate	Aggregate	Diesel	1529.413	115006.5	115006.5	0	22222.37
Fresno (SJV)	2044	T7 Tractor	Aggregate	Aggregate	Diesel	1321.265	99062.33	99062.33	0	19197.98
Fresno (SJV)	2045	T7 Tractor	Aggregate	Aggregate	Diesel	1149.783	85977.91	85977.91	0	16706.34
Fresno (SJV)	2046	T7 Tractor	Aggregate	Aggregate	Diesel	1004.882	75538.89	75538.89	0	14600.94
Fresno (SJV)	2047	T7 Tractor	Aggregate	Aggregate	Diesel	879.4923	66824.99	66824.99	0	12779.02
Fresno (SJV)	2048	T7 Tractor	Aggregate	Aggregate	Diesel	781.5649	60519.47	60519.47	0	11356.14
Fresno (SJV)	2049	T7 Tractor	Aggregate	Aggregate	Diesel	718.7375	56661.95	56661.95	0	10443.26
Fresno (SJV)	2050	T7 Tractor	Aggregate	Aggregate	Diesel	682.1296	54523.65	54523.65	0	9911.343

Region	Fresno (SJV)	Fresno (SJ	Fresno (SJ	Fresno (SJ	Fresno (SJ	Fresno (SJ	Fresno (SJ	Fresno (SJ	Fresno (SJ	Fresno (SJ
Calendar Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Vehicle Category	T7 Tractor Class 8	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor
Model Year	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate
Speed	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate
Fuel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Population	4025.010265	4468.24	4375.63	4605.447	4168.896	4241.012	4060.419	3758.231	3922.195	3768.983
Total VMT	356489.0624	357672.1	369567.2	340666.4	315480.5	309961.7	308762.5	299454.6	315178.5	308165.5
CVMT	356489.0624	357672.1	369567.2	340666.4	315480.5	309961.7	308762.5	299454.6	315178.5	308165.5
Trips	58483.39915	64923.53	63577.91	66917.14	60574.05	61621.91	58997.89	54607.1	56989.49	54763.32
NOx_RUNEX	18.92778058	18.21936	17.54814	17.14834	15.87423	16.85754	15.9387	14.98634	12.36319	10.72945
PM2.5_RUNEX	0.684824999	0.667871	0.617061	0.593097	0.54357	0.567682	0.529664	0.486845	0.374314	0.237335
PM10_RUNEX	0.715789746	0.698069	0.644961	0.619914	0.568147	0.59335	0.553613	0.508858	0.391239	0.248066
CO2_RUNEX	1707.36339	1702.05	1699.417	1697.113	1698.121	1694.948	1685.756	1678.077	1619.644	1621.115
CH4_RUNEX	0.051928357	0.050331	0.048513	0.047664	0.043729	0.047696	0.045103	0.04151	0.031833	0.020185
N2O_RUNEX	0.05	0.05	0.05	0.05	0.053278	0.062622	0.081456	0.094841	0.139867	0.172765
ROG_RUNEX	1.118003282	1.083616	1.044479	1.026195	0.941472	1.026892	0.971047	0.893691	0.685361	0.434588
TOG_RUNEX	1.272761633	1.233615	1.18906	1.168245	1.071794	1.169038	1.105463	1.017399	0.780232	0.494746
NH3_RUNEX	0.027	0.027135	0.027876	0.028256	0.029295	0.031549	0.041694	0.048913	0.070899	0.087716
CO_RUNEX	3.892423092	3.814056	3.66679	3.589418	3.309588	3.552433	3.349028	3.089482	2.374546	1.51783
SOx_RUNEX	0.150154247	0.14975	0.005553	0.005545	0.005548	0.005537	0.005509	0.005484	0.005297	0.005303

4, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 20

OAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN.

NOx_RUNEX	NOx_IDLE)	NOx_STRE	PM2.5_RU	PM2.5_IDI	PM2.5_STI	PM2.5_PM	PM2.5_PM	PM10_RUI	PM10_IDL	PM10_STR	PM10_PM
18.92778058	37.41517	0	0.684825	0.901237	0	0.009	0.036844	0.71579	0.941987	0	0.036
18.21935671	38.07068	0	0.667871	0.846275	0	0.009	0.036844	0.698069	0.88454	0	0.036
17.54814206	38.57685	0	0.617061	0.763955	0	0.009	0.036844	0.644961	0.798497	0	0.036
17.14834324	29.57462	0	0.593097	0.484362	0	0.009	0.036844	0.619914	0.506263	0	0.036
15.87423413	32.55801	0.089367	0.54357	0.442985	0	0.009	0.036756	0.568147	0.463015	0	0.036
16.85754387	30.66649	0.214829	0.567682	0.449169	0	0.009	0.036505	0.59335	0.469478	0	0.036
15.9387006	32.05523	0.431035	0.529664	0.419686	0	0.009	0.035998	0.553613	0.438663	0	0.036
14.98634186	34.33665	0.587928	0.486845	0.388165	0	0.009	0.035638	0.508858	0.405716	0	0.036
12.36319442	38.59544	1.14389	0.374314	0.283482	0	0.009	0.034427	0.391239	0.2963	0	0.036
10.72944704	41.09907	1.59887	0.237335	0.196472	0	0.009	0.033543	0.248066	0.205356	0	0.036
9.372643696	43.01495	2.018294	0.197951	0.162927	0	0.009	0.032749	0.206901	0.170294	0	0.036
8.097495133	44.76901	2.467716	0.164472	0.134956	0	0.009	0.031947	0.171909	0.141058	0	0.036
7.184921884	45.96584	2.836543	0.134112	0.111579	0	0.009	0.031351	0.140176	0.116624	0	0.036
6.266504494	46.6818	3.264176	0.114602	0.095227	0	0.009	0.030689	0.119784	0.099532	0	0.036
4.784369446	46.58161	3.928629	0.078471	0.066514	0	0.009	0.029701	0.082019	0.069521	0	0.036
4.20864582	45.85649	4.279473	0.068131	0.056051	0	0.009	0.029232	0.071212	0.058585	0	0.036
3.720404836	45.63878	4.540373	0.056207	0.043887	0	0.009	0.028878	0.058749	0.045872	0	0.036
3.413774193	45.33472	4.724314	0.048817	0.037417	0	0.009	0.028636	0.051024	0.039109	0	0.036
1.748390945	36.90193	4.961307	0.020888	0.01381	0	0.009	0.027507	0.021832	0.014434	0	0.036
1.46348819	31.64706	4.308263	0.017994	0.01218	0	0.009	0.027476	0.018808	0.012731	0	0.036
1.156683525	25.47043	3.507506	0.015164	0.010626	0	0.009	0.027477	0.01585	0.011106	0	0.036
0.920990327	20.5357	2.882184	0.013206	0.009453	0	0.009	0.027553	0.013803	0.009881	0	0.036
0.811744353	18.32077	2.628683	0.012797	0.009273	0	0.009	0.027706	0.013376	0.009692	0	0.036
0.69049798	15.52897	2.261857	0.012271	0.009042	0	0.009	0.027951	0.012825	0.009451	0	0.036
0.623894297	13.90434	2.052064	0.01207	0.008975	0	0.009	0.028232	0.012616	0.00938	0	0.036
0.576011912	12.56687	1.863718	0.011972	0.008922	0	0.009	0.028528	0.012514	0.009326	0	0.036
0.538508929	11.40435	1.69564	0.011917	0.008894	0	0.009	0.028811	0.012456	0.009296	0	0.036
0.507897861	10.40063	1.553967	0.011873	0.008877	0	0.009	0.029062	0.01241	0.009278	0	0.036
0.479339309	9.43797	1.424472	0.011814	0.008891	0	0.009	0.029295	0.012348	0.009293	0	0.036
0.454448536	8.525189	1.306273	0.011756	0.008888	0	0.009	0.029502	0.012288	0.00929	0	0.036
0.433993237	7.690308	1.200279	0.011715	0.008828	0	0.009	0.029683	0.012244	0.009227	0	0.036
0.418954383	6.97608	1.110426	0.011701	0.008754	0	0.009	0.02983	0.01223	0.009149	0	0.036
0.407871509	6.4062	1.042357	0.011704	0.008647	0	0.009	0.029955	0.012234	0.009038	0	0.036
0.400539402	5.980333	0.993932	0.01172	0.008514	0	0.009	0.030053	0.01225	0.008899	0	0.036
0.395914928	5.663989	0.957992	0.011743	0.008368	0	0.009	0.030123	0.012274	0.008746	0	0.036
0.39175852	5.409684	0.927912	0.011759	0.008238	0	0.009	0.030173	0.012291	0.008611	0	0.036
0.386731816	5.173611	0.897805	0.011765	0.008138	0	0.009	0.03021	0.012297	0.008506	0	0.036
0.382639099	5.026548	0.880354	0.011754	0.008096	0	0.009	0.030236	0.012285	0.008462	0	0.036
0.380567695	4.94128	0.871992	0.011736	0.008085	0	0.009	0.030255	0.012267	0.008451	0	0.036
0.381127779	4.899661	0.870166	0.011724	0.008086	0	0.009	0.030269	0.012254	0.008451	0	0.036
0.382988876	4.920865	0.878669	0.011708	0.008132	0	0.009	0.030279	0.012237	0.0085	0	0.036
0.385219458	4.998998	0.896665	0.011681	0.008229	0	0.009	0.030288	0.012209	0.008601	0	0.036
0.388535574	5.155465	0.928338	0.011638	0.008403	0	0.009	0.030294	0.012164	0.008783	0	0.036
0.393896855	5.321508	0.961262	0.011605	0.008575	0	0.009	0.030299	0.012129	0.008962	0	0.036
0.39990346	5.458253	0.988369	0.011593	0.008708	0	0.009	0.030303	0.012117	0.009102	0	0.036
0.391637099	5.38423	0.976607	0.011503	0.008714	0	0.009	0.030305	0.012023	0.009108	0	0.036

Fresno (SJV)	Fresno (SJ\	Fresno (SJ\	Fresno (SJ\	Fresno (SJ\	Fresno (SJ\	Fresno (SJ\	Fresno (SJ\	Fresno (SJ\	Fresno (SJ\	Fresno (SJ\	Fresno (SJ\
2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
T7 Tractor Class 8	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor
Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate
Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate
Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
3723.011398	3704.241	3611.413	3490.146	2866.015	3411.947	3626.091	4242.504	4144.811	3611.346	3654.893	3693.909
299641.2238	307163	314164.4	297158.5	289491.8	301407.6	304163.3	322550	327897.2	298032.5	301901.1	305088.4
299641.2238	307163	314164.4	297158.5	289491.8	301407.6	304163.3	322550	327897.2	298032.5	301901.1	305088.4
54095.35561	53822.62	52473.83	50711.82	41643.19	49575.59	52687.11	61643.59	60224.11	52472.86	53105.59	53672.5
9.372643696	8.097495	7.184922	6.266504	4.784369	4.208646	3.720405	3.413774	1.748391	1.463488	1.156684	0.92099
0.197950525	0.164472	0.134112	0.114602	0.078471	0.068131	0.056207	0.048817	0.020888	0.017994	0.015164	0.013206
0.20690097	0.171909	0.140176	0.119784	0.082019	0.071212	0.058749	0.051024	0.021832	0.018808	0.01585	0.013803
1614.250124	1608.547	1601.098	1599.014	1599.438	1597.376	1588.444	1579.159	1559.291	1538.908	1515.068	1490.1
0.016798997	0.013814	0.01104	0.009426	0.006431	0.00552	0.004403	0.003703	0.000815	0.000702	0.000611	0.000551
0.202292665	0.232106	0.254268	0.278875	0.315587	0.333045	0.346196	0.355197	0.397197	0.398343	0.398988	0.39938
0.361677795	0.297422	0.237682	0.202931	0.138453	0.118851	0.094796	0.079721	0.017546	0.015105	0.013148	0.011867
0.411742639	0.338592	0.270583	0.231022	0.157618	0.135302	0.107919	0.090757	0.019975	0.017195	0.014968	0.013509
0.103466187	0.119477	0.131243	0.144901	0.166537	0.177064	0.185059	0.190502	0.218104	0.218854	0.219291	0.219562
1.268878322	1.049477	0.847948	0.72447	0.504155	0.437993	0.35341	0.29962	0.092591	0.08089	0.070804	0.063151
0.005286887	0.005271	0.005247	0.005242	0.005246	0.005246	0.005218	0.005187	0.005121	0.005054	0.004975	0.004893

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PM10_PM	CO2_RUNI	CO2_IDLE	CO2_STRE	CH4_RUNI	CH4_IDLE	CH4_STRE	N2O_RUN	N2O_IDLE	N2O_STRE	ROG_RUN	ROG_IDLE	ROG_STRE	ROG_HOT
0.10527	1707.363	2464.036	0	0.051928	0.250692	0	0.05	0	0	1.118003	5.39733	0	0
0.10527	1702.05	2474.532	0	0.050331	0.238741	0	0.05	0	0	1.083616	5.140026	0	0
0.10527	1699.417	2487.936	0	0.048513	0.227099	0	0.05	0	0	1.044479	4.889378	0	0
0.10527	1697.113	2056.391	0	0.047664	0.151206	0	0.05	0	0	1.026195	3.255426	0	0
0.105018	1698.121	2680.716	0	0.043729	0.149327	0	0.053278	0	0	0.941472	3.214972	0	0
0.1043	1694.948	2441.109	0	0.047696	0.148504	0	0.062622	0	0	1.026892	3.19726	0	0
0.102853	1685.756	2846.019	0	0.045103	0.147437	0	0.081456	0	0	0.971047	3.174276	0	0
0.101824	1678.077	3301.811	0	0.04151	0.145867	0	0.094841	0	0	0.893691	3.140481	0	0
0.098364	1619.644	4308.812	0	0.031833	0.136121	0	0.139867	0	0	0.685361	2.930639	0	0
0.095836	1621.115	5084.803	0	0.020185	0.122823	0	0.172765	0	0	0.434588	2.644349	0	0
0.093567	1614.25	5723.141	0	0.016799	0.126155	0	0.202293	0	0	0.361678	2.716091	0	0
0.091276	1608.547	6376.915	0	0.013814	0.131155	0	0.232106	0	0	0.297422	2.823721	0	0
0.089573	1601.098	6907.722	0	0.01104	0.13463	0	0.254268	0	0	0.237682	2.898542	0	0
0.087682	1599.014	7398.839	0	0.009426	0.140908	0	0.278875	0	0	0.202931	3.033719	0	0
0.084861	1599.438	7978.409	0	0.006431	0.147513	0	0.315587	0	0	0.138453	3.17591	0	0
0.08352	1597.376	8143.686	0	0.00552	0.150847	0	0.333045	0	0	0.118851	3.247697	0	0
0.082509	1588.444	8285.985	0	0.004403	0.153053	0	0.346196	0	0	0.094796	3.29519	0	0
0.081818	1579.159	8348.548	0	0.003703	0.154798	0	0.355197	0	0	0.079721	3.33275	0	0
0.07859	1559.291	8389.774	0	0.000815	0.157278	0	0.397197	0	0	0.017546	3.386155	0	0
0.078502	1538.908	8231.339	0	0.000702	0.15812	0	0.398343	0	0	0.015105	3.404285	0	0
0.078504	1515.068	8045.527	0	0.000611	0.158568	0	0.398988	0	0	0.013148	3.413929	0	0
0.078723	1490.1	7860.408	0	0.000551	0.158964	0	0.39938	0	0	0.011867	3.422453	0	0
0.07916	1465.393	7688.739	0	0.000512	0.159307	0	0.399612	0	0	0.011028	3.429827	0	0
0.079861	1439.329	7528.556	0	0.000486	0.159634	0	0.399753	0	0	0.01047	3.436872	0	0
0.080662	1413.865	7385.965	0	0.000471	0.159911	0	0.399842	0	0	0.010132	3.442838	0	0
0.081507	1389.186	7255.318	0	0.000462	0.160121	0	0.399898	0	0	0.009942	3.447364	0	0
0.082318	1366.232	7137.78	0	0.000457	0.160267	0	0.399934	0	0	0.009838	3.450505	0	0
0.083036	1345.976	7036.043	0	0.000455	0.160364	0	0.399957	0	0	0.009788	3.452585	0	0
0.083699	1328.565	6949.89	0	0.000453	0.160426	0	0.399972	0	0	0.009745	3.453922	0	0
0.084293	1314.418	6880.018	0	0.000451	0.160465	0	0.399982	0	0	0.009716	3.454767	0	0
0.08481	1303.087	6822.995	0	0.000451	0.16049	0	0.399988	0	0	0.009712	3.455303	0	0
0.085229	1292.686	6772.232	0	0.000453	0.160506	0	0.399992	0	0	0.009749	3.455648	0	0
0.085587	1281.501	6718.126	0	0.000456	0.160516	0	0.399994	0	0	0.009815	3.455864	0	0
0.085866	1270.897	6666.954	0	0.00046	0.160522	0	0.399996	0	0	0.009903	3.456004	0	0
0.086065	1261.828	6623.068	0	0.000465	0.160527	0	0.399997	0	0	0.010002	3.456099	0	0
0.086208	1254.883	6589.189	0	0.000469	0.16053	0	0.399998	0	0	0.010094	3.456164	0	0
0.086313	1250.011	6565.377	0	0.000472	0.160532	0	0.399998	0	0	0.010172	3.45621	0	0
0.086388	1246.277	6547.13	0	0.000474	0.160534	0	0.399999	0	0	0.010212	3.456243	0	0
0.086441	1242.84	6530.82	0	0.000475	0.160535	0	0.399999	0	0	0.010223	3.456267	0	0
0.086482	1239.298	6514.236	0	0.000474	0.160535	0	0.399999	0	0	0.010215	3.456285	0	0
0.086512	1235.569	6496.256	0	0.000473	0.160536	0	0.399999	0	0	0.010178	3.456299	0	0
0.086536	1231.694	6476.94	0	0.00047	0.160537	0	0.4	0	0	0.01011	3.45631	0	0
0.086554	1227.542	6455.451	0	0.000464	0.160537	0	0.4	0	0	0.009991	3.456318	0	0
0.086568	1223.602	6434.206	0	0.000458	0.160537	0	0.4	0	0	0.009865	3.456324	0	0
0.086579	1220.389	6415.748	0	0.000454	0.160538	0	0.4	0	0	0.009766	3.45633	0	0
0.086587	1217.952	6400.734	0	0.00045	0.160538	0	0.4	0	0	0.009698	3.456334	0	0

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2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor
Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate
Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate
Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
3714.49	3720.351	3695.113	3668.644	3664.059	3643.804	3608.569	3551.967	3462.443	3347.139	3141.742	2884.227	2608.874	2325.417
307271.7	307282.2	306107.6	304176.3	302774.5	299843.4	295423.5	290723.7	284931.3	273891.7	254621.5	230888.2	205954.1	180309.6
307271.7	307282.2	306107.6	304176.3	302774.5	299843.4	295423.5	290723.7	284931.3	273891.7	254621.5	230888.2	205954.1	180309.6
53971.54	54056.71	53689.99	53305.39	53238.78	52944.48	52432.5	51610.08	50309.29	48633.92	45649.51	41907.82	37906.94	33788.3
0.811744	0.690498	0.623894	0.576012	0.538509	0.507898	0.479339	0.454449	0.433993	0.418954	0.407872	0.400539	0.395915	0.391759
0.012797	0.012271	0.01207	0.011972	0.011917	0.011873	0.011814	0.011756	0.011715	0.011701	0.011704	0.01172	0.011743	0.011759
0.013376	0.012825	0.012616	0.012514	0.012456	0.01241	0.012348	0.012288	0.012244	0.01223	0.012234	0.01225	0.012274	0.012291
1465.393	1439.329	1413.865	1389.186	1366.232	1345.976	1328.565	1314.418	1303.087	1292.686	1281.501	1270.897	1261.828	1254.883
0.000512	0.000486	0.000471	0.000462	0.000457	0.000455	0.000453	0.000451	0.000451	0.000453	0.000456	0.00046	0.000465	0.000469
0.399612	0.399753	0.399842	0.399898	0.399934	0.399957	0.399972	0.399982	0.399988	0.399992	0.399994	0.399996	0.399997	0.399998
0.011028	0.01047	0.010132	0.009942	0.009838	0.009788	0.009745	0.009716	0.009712	0.009749	0.009815	0.009903	0.010002	0.010094
0.012555	0.01192	0.011534	0.011319	0.0112	0.011143	0.011094	0.011061	0.011056	0.011099	0.011174	0.011274	0.011386	0.011491
0.219726	0.219827	0.219889	0.219928	0.219954	0.21997	0.21998	0.219987	0.219991	0.219994	0.219996	0.219997	0.219998	0.219998
0.057453	0.053188	0.050185	0.048187	0.046966	0.046257	0.045754	0.045432	0.045292	0.045391	0.045651	0.046027	0.046463	0.046878
0.004812	0.004727	0.004643	0.004562	0.004487	0.00442	0.004363	0.004316	0.004279	0.004245	0.004208	0.004173	0.004144	0.004121

ROG_RUN	ROG_DIUR	TOG_RUNI	TOG_IDLE)	TOG_STRE	TOG_HOTS	TOG_RUNI	TOG_DIUR	NH3_RUNI	CO_RUNE)	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX
0	0	1.272762	6.144449	0	0	0	0	0.027	3.892423	19.04717	0	0.150154	0.2167
0	0	1.233615	5.851528	0	0	0	0	0.027135	3.814056	18.67105	0	0.14975	0.217715
0	0	1.18906	5.566185	0	0	0	0	0.027876	3.66679	18.18968	0	0.005553	0.00813
0	0	1.168245	3.706055	0	0	0	0	0.028256	3.589418	12.42862	0	0.005545	0.006719
0	0	1.071794	3.660001	0	0	0	0	0.029295	3.309588	12.51137	0	0.005548	0.008758
0	0	1.169038	3.639837	0	0	0	0	0.031549	3.552433	13.21254	0	0.005537	0.007975
0	0	1.105463	3.613671	0	0	0	0	0.041694	3.349028	14.52803	0	0.005509	0.009301
0	0	1.017399	3.575199	0	0	0	0	0.048913	3.089482	15.46906	0	0.005484	0.010791
0	0	0.780232	3.336309	0	0	0	0	0.070899	2.374546	18.36523	0	0.005297	0.014093
0	0	0.494746	3.01039	0	0	0	0	0.087716	1.51783	19.58366	0	0.005303	0.016634
0	0	0.411743	3.092062	0	0	0	0	0.103466	1.268878	22.51412	0	0.005287	0.018744
0	0	0.338592	3.214591	0	0	0	0	0.119477	1.049477	25.722	0	0.005271	0.020895
0	0	0.270583	3.299769	0	0	0	0	0.131243	0.847948	28.22245	0	0.005247	0.022637
0	0	0.231022	3.453658	0	0	0	0	0.144901	0.72447	31.55487	0	0.005242	0.024255
0	0	0.157618	3.615531	0	0	0	0	0.166537	0.504155	36.75812	0	0.005246	0.026167
0	0	0.135302	3.697256	0	0	0	0	0.177064	0.437993	39.51278	0	0.005246	0.026747
0	0	0.107919	3.751323	0	0	0	0	0.185059	0.35341	41.60457	0	0.005218	0.02722
0	0	0.090757	3.794082	0	0	0	0	0.190502	0.29962	43.08624	0	0.005187	0.027425
0	0	0.019975	3.85488	0	0	0	0	0.218104	0.092591	49.36381	0	0.005121	0.027555
0	0	0.017195	3.875519	0	0	0	0	0.218854	0.08089	49.82935	0	0.005054	0.027031
0	0	0.014968	3.886499	0	0	0	0	0.219291	0.070804	50.13597	0	0.004975	0.02642
0	0	0.013509	3.896202	0	0	0	0	0.219562	0.063151	50.37012	0	0.004893	0.025812
0	0	0.012555	3.904597	0	0	0	0	0.219726	0.057453	50.54978	0	0.004812	0.025249
0	0	0.01192	3.912617	0	0	0	0	0.219827	0.053188	50.70045	0	0.004727	0.024723
0	0	0.011534	3.919409	0	0	0	0	0.219889	0.050185	50.81778	0	0.004643	0.024254
0	0	0.011319	3.924561	0	0	0	0	0.219928	0.048187	50.90337	0	0.004562	0.023825
0	0	0.0112	3.928137	0	0	0	0	0.219954	0.046966	50.96193	0	0.004487	0.023439
0	0	0.011143	3.930505	0	0	0	0	0.21997	0.046257	51.00035	0	0.00442	0.023105
0	0	0.011094	3.932027	0	0	0	0	0.21998	0.045754	51.02507	0	0.004363	0.022822
0	0	0.011061	3.932989	0	0	0	0	0.219987	0.045432	51.04076	0	0.004316	0.022593
0	0	0.011056	3.933599	0	0	0	0	0.219991	0.045292	51.05075	0	0.004279	0.022406
0	0	0.011099	3.933992	0	0	0	0	0.219994	0.045391	51.05721	0	0.004245	0.022239
0	0	0.011174	3.934238	0	0	0	0	0.219996	0.045651	51.06124	0	0.004208	0.022061
0	0	0.011274	3.934397	0	0	0	0	0.219997	0.046027	51.06388	0	0.004173	0.021893
0	0	0.011386	3.934505	0	0	0	0	0.219998	0.046463	51.06567	0	0.004144	0.021749
0	0	0.011491	3.93458	0	0	0	0	0.219998	0.046878	51.06691	0	0.004121	0.021638
0	0	0.01158	3.934632	0	0	0	0	0.219999	0.047227	51.06778	0	0.004105	0.02156
0	0	0.011626	3.934669	0	0	0	0	0.219999	0.047407	51.06839	0	0.004093	0.0215
0	0	0.011638	3.934696	0	0	0	0	0.219999	0.047452	51.06885	0	0.004081	0.021446
0	0	0.011629	3.934717	0	0	0	0	0.219999	0.047412	51.06919	0	0.00407	0.021392
0	0	0.011587	3.934734	0	0	0	0	0.22	0.047235	51.06947	0	0.004057	0.021333
0	0	0.01151	3.934746	0	0	0	0	0.22	0.046918	51.06967	0	0.004045	0.021269
0	0	0.011374	3.934755	0	0	0	0	0.22	0.046365	51.06983	0	0.004031	0.021199
0	0	0.011231	3.934762	0	0	0	0	0.22	0.045779	51.06995	0	0.004018	0.021129
0	0	0.011118	3.934768	0	0	0	0	0.22	0.045317	51.07005	0	0.004008	0.021068
0	0	0.01104	3.934773	0	0	0	0	0.22	0.044999	51.07012	0	0.004	0.021019

Fresno (SJ\	Fresno (SJ\	Fresno (SJ\	Fresno (SJ\	Fresno (SJ\	Fresno (SJ\	Fresno (SJ\	Fresno (SJ\	Fresno (SJ\	Fresno (SJV)
2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor	T7 Tractor Class 8
Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate
Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate
Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
2051.122	1777.493	1529.413	1321.265	1149.783	1004.882	879.4923	781.5649	718.7375	682.1296
157186.3	134620.1	115006.5	99062.33	85977.91	75538.89	66824.99	60519.47	56661.95	54523.65
157186.3	134620.1	115006.5	99062.33	85977.91	75538.89	66824.99	60519.47	56661.95	54523.65
29802.8	25826.98	22222.37	19197.98	16706.34	14600.94	12779.02	11356.14	10443.26	9911.343
0.386732	0.382639	0.380568	0.381128	0.382989	0.385219	0.388536	0.393897	0.399903	0.391637
0.011765	0.011754	0.011736	0.011724	0.011708	0.011681	0.011638	0.011605	0.011593	0.011503
0.012297	0.012285	0.012267	0.012254	0.012237	0.012209	0.012164	0.012129	0.012117	0.012023
1250.011	1246.277	1242.84	1239.298	1235.569	1231.694	1227.542	1223.602	1220.389	1217.952
0.000472	0.000474	0.000475	0.000474	0.000473	0.00047	0.000464	0.000458	0.000454	0.00045
0.399998	0.399999	0.399999	0.399999	0.399999	0.4	0.4	0.4	0.4	0.4
0.010172	0.010212	0.010223	0.010215	0.010178	0.01011	0.009991	0.009865	0.009766	0.009698
0.01158	0.011626	0.011638	0.011629	0.011587	0.01151	0.011374	0.011231	0.011118	0.01104
0.219999	0.219999	0.219999	0.219999	0.22	0.22	0.22	0.22	0.22	0.22
0.047227	0.047407	0.047452	0.047412	0.047235	0.046918	0.046365	0.045779	0.045317	0.044999
0.004105	0.004093	0.004081	0.00407	0.004057	0.004045	0.004031	0.004018	0.004008	0.004

APPENDIX K FUGITIVE DUST CONTROL PLAN

Plan, Maps & Recordkeeping Forms

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MEMORANDUM

SESPE CONSULTING, INC.
A Trinity Consultants Company

3990 Old Town Ave, Suite A203 • San Diego, CA 92110
Office (619) 894-8669 • Fax (805) 667-8104

Date: April 27, 2026

To: Pat Mitchell, Esq.

From: Scott D. Cohen, P.E., C.I.H.

Cc: Christine Jones, Cemex

Re: Rockfield Quarry Dust Control Plan

This Dust Control Plan for the Rockfield Quarry Project represents a preliminary document which will be submitted to the Air District for approval as part of the facility permitting process. It may be subject to change per District comment or other operational requirements.

The Control Plan outlines a series of control technique options which could be enacted to achieve the necessary level of control. Some facility operations can be controlled using multiple techniques, as indicated in the Plan. Text preceding the tables below will indicate cases where the Control Plan allows flexibility to use the most appropriate technique based on the situation or location with the facility. A series of plot plans detailing facility boundaries, roadways, stockpiles, water supplies, and other relevant information are also included in this Dust Control Plan.

Section 3-A: Sources of Fugitive Dust

1. **Pre-Activity** The following will be implemented:

Control Option	Description
#1 (Watering and Phased operations)	The site will be pre-watered, and work will be phased to reduce the amount of disturbed surface area at one time.

2. **Active Excavation Operations** (Earth – moving activities) The following will be implemented:

Control Options	Description
#1 Watering	Water will be applied to the disturbed surface area during operations, at least every 2 hours, unless the surface is visibly wet

3. Inactive Operations (Including After Work Hours, Weekend and Holidays) The following will be implemented:

Control Option	Description	Notes
#1 (Restricted Vehicle Access)	Vehicle access will be restricted.	Facility access is by steel gates which prevent unauthorized access during inactive operations.

4. Temporary stabilization of areas that remain unused for seven or more days

One of the following will be implemented, at operator discretion.

Control Options	Description	Notes
#1 (Dust Suppressant & Restricted Vehicle Access)	Vehicular access will be restricted, and dust suppressants will be applied and maintained at all un-vegetated areas. Suitable for areas of short term inactivity.	Temporary barriers or signage will be used to ensure restriction of vehicle area is maintained during inactive periods.
#2 (Vegetation)	Vegetation (cover crops) will be established on all previously disturbed areas. Ideal for areas with long term inactivity.	Consistent with reclamation requirements, areas that will be inactive long term, such as overburden piles and disturbed topsoil will be revegetated
#3 (Gravel)	Gravel will be applied and maintained at previously disturbed areas. Ideal for areas with long term inactivity.	In cases where vegetation is not an option due to ongoing activities or vehicle traffic, gravel will be applied and maintained to disturbed areas

5. Unpaved Access and Haul Roads, Traffic and Equipment Storage Area

At least one of the following will be applied for each facility roadway:

Control Options	Description
#1 (Heavy Watering)	Water all unpaved roads every 2 hours during active use.
#2 (Watering, Dust Suppressant & Speed Limit)	Apply a dust suppressant to all unpaved roads and water before application as well as whenever the crust is compromised (or as specified by the products instructions). Post speed limit signs (15mph or less) at each entrance, and again every 500 feet. Dust suppressant will be re-applied at intervals consistent with vendor specifications.
#3 (Light Watering & Speed Limit)	Water all unpaved roads every 4 hours during active use. Post speed limit signs (15mph or less) at each entrance, and again every 500 feet.

Section 3-B: Bulk Materials

6. Outdoor Handling (Truck Loading/unloading areas) The following will be implemented:

Control Options	Description	Notes
#1 Water Spray	Water will be applied at the drop point, or as moisture in feed material, to prevent visible dust.	Water spray bars or watering truck may be used for application of water during loading/unloading, unless materials are sufficiently wet from upstream watering or natural moisture to prevent fugitive emissions.

7. Outdoor Storage (Stockpiles)

Option 1 will be implemented.

Control Options	Description
#1 Watering	Use a spray system to apply water to stock piles at transfer point and/or on top of piles.

8. On-Site Transporting

Each of the following will be implemented:

Control Options	Description
#1 (Limited Speed)	Post and enforce a speed limit of 15mph or less for all vehicles on project site.
#2 (Vehicle Loading)	Load haul trucks such that there is at least 6” of space between the top of material and the top edge of the truck bed when transported across any paved public access road.
#3 (Leveling or Covering of loads)	A station will be provided to allow truck operators to level and cover loads as appropriate.

9. Off-Site Transporting

9.1. For preventing track out, control option #1 will be applied. Additionally, either Option #2 or #3 will be implemented.

Control Options	Description
#1 (Paved Surface)	Pave exit road for at least 100 feet from the site entrance/exit to the public road.
#2 (Wheel Washer)	Install and use a wheel wash system at the exit to dislodge debris from tires and vehicle undercarriage
#3 (Grizzly)	Install a grizzly (rails, pipes or grates) at the exit, covering the full width of road and at least 25 feet in length.

9.2. For preventing carryout, Option 1a or 1b will be implemented, and Option 2a or 2b will be implemented.

Control Options	Description
#1a (Empty Haul Truck - Cleaned)	Inspect interior cargo compartments before leaving the project site. Cargo compartments will be cleaned if materials that could escape on roadway are present.
#1b (Empty Haul Truck - Covered)	Cover cargo compartment with a tarp or suitable cover before leaving the project site.
#2a (Loaded Haul Truck - Water)	Load haul trucks such that there is at least 6” of space between the top of material and the top edge of the truck bed, and apply water to the top of the load before leaving the site.
#2b (Loaded Haul Truck - Covered)	Cover loaded haul trucks with a tarp or suitable cover before leaving the project site.

9.3. For cleanup of Carryout and Track out, sweeping will be implemented as applicable:

Control Options	Description
#1 (Sweeping)	If any dirt or debris is tracked onto paved roads, sweep and remove it within 30 minutes.

10. Outdoor Transport using a Chute or Conveyor

For any outdoor transport using conveyors, the conveyor or process equipment upstream of the conveyor will be equipped with water spray bars in order to sufficiently wet the materials for the prevention of visible dust.

General Information:

4-A Water Application:

Water Application Equipment

Water Application Details	**Specifications**		
Equipment Used	Water Truck ☒	Water Trailer ☐	Water Wagon ☐
Number of application equipment available	To be determined. Will be sufficient for facility operation consistent with previously outlined control methodologies.		
Application equipment capacity			
Application Rate (gallons per acre)			
Application frequency (on typical dry day)	Up to every 2 hours		
Hours of operation	TBD		
After-hours contact & phone number	TBD		

Water Supply

Water Source	**Specifications**
Fire hydrants	Will not be used for dust control
Storage tanks	Stationary tanks are not currently part of dust control plan
Wells	60 acre feet per year
River/Pond	125 acre feet of river water per year

4-B Dust Suppressant Product:

At least one dust suppressant product will be chosen, though various dust suppressants may be utilized depending on site location and operational use case. Specifics of which dust control products will be used for each process will be determined in cooperation with the SJVAPCD as part of the permitting process. Dust suppressant's utilized on site will be chosen from the SJVAPCD "List 1: Products Which Meet the 50% Efficiency Requirement" available at:

https://www.valleyair.org/compliance/dust-control/reducing-dust-emissions/#streetsweepers

Recordkeeping

Records of Daily Track out Inspection/Cleanup, Daily Facility Watering using water trucks, Dust suppressant application, and other dust control activities outlined in the Regulation VIII record keeping form shall be maintained. Example record keeping sheets are included in this plan after the Site Plot Plan Figures.

Attachment 1: Plot Plan Figures
Attachment 2: Example Record Keeping Forms

Sensitive Receptors

Property Boundary

Exit Entrance Points

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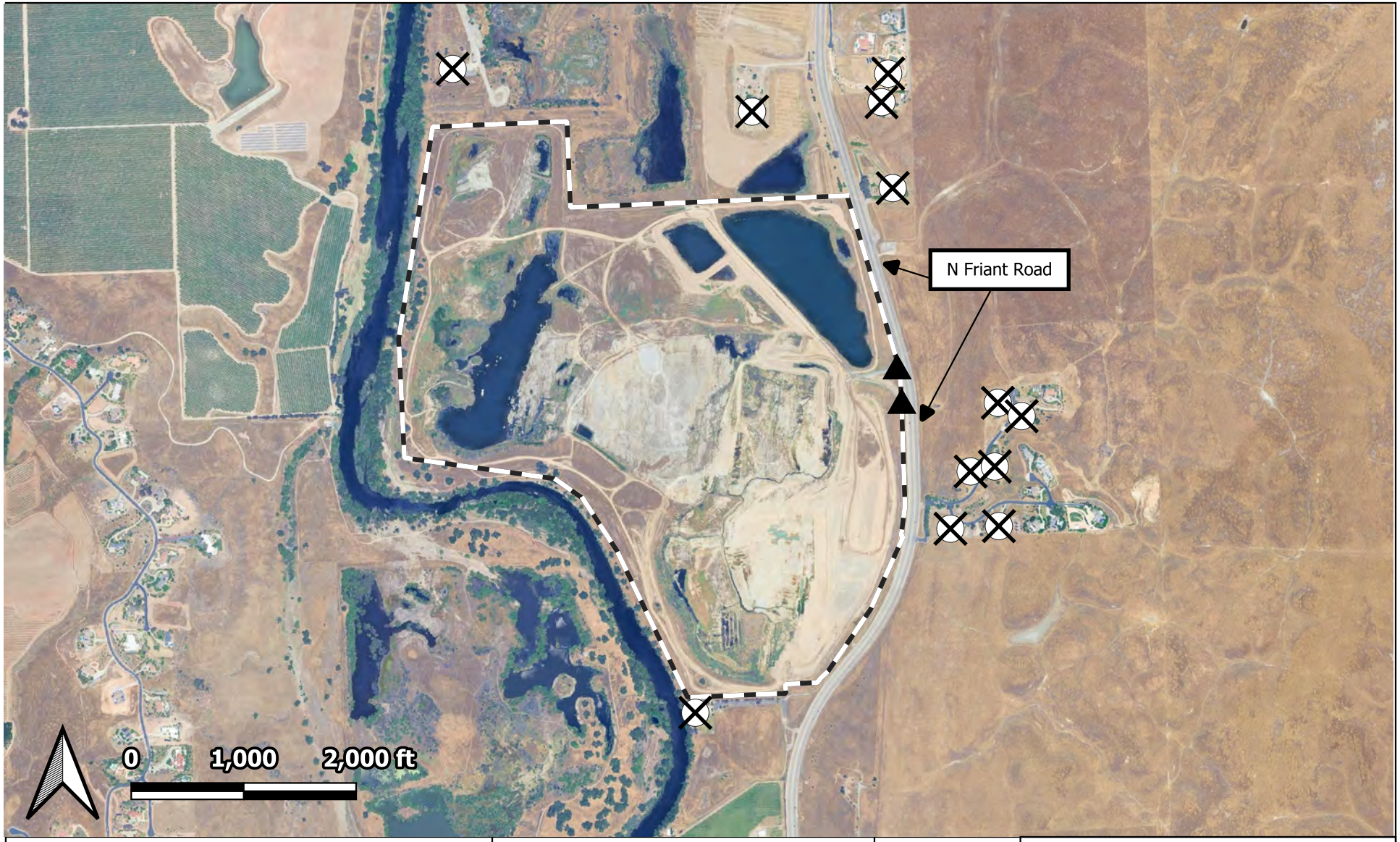
FIGURE 1

Plant Vicinity Map
CEMEX Rockfield Quarry
13475 N Friant Road
Fresno, California 93736

PROJECT #:	0250509.0111	DATE:	11-05-2025
SCALE:	As shown	DRAWN BY:	EJS



Sensitive Receptors

Property Boundary

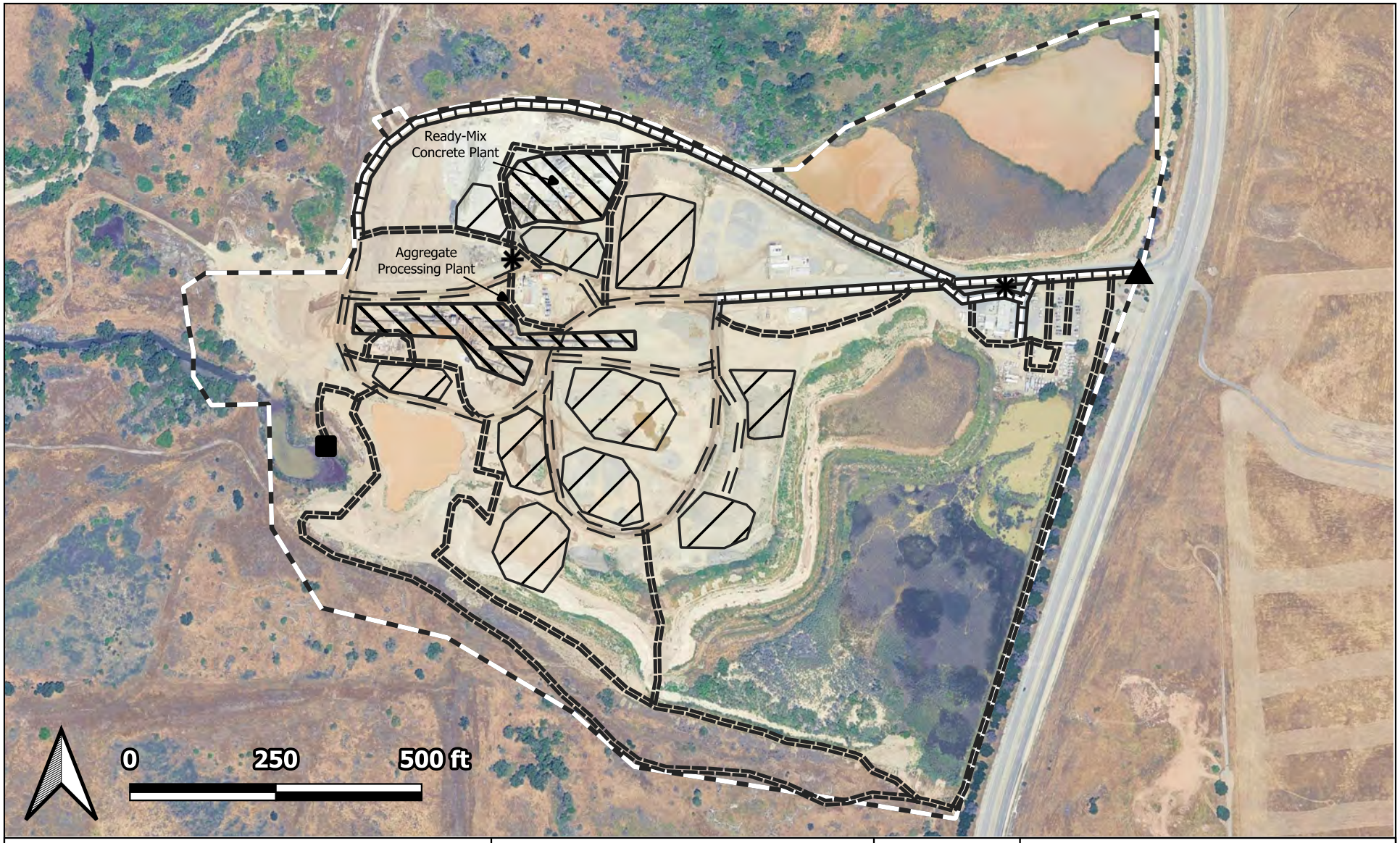
Exit Entrance Points

SESPE CONSULTING, INC.
A Trinity Consultants Company

FIGURE 2

Quarry Vicinity Map
CEMEX Rockfield Quarry
14765 N Friant Road
Fresno, California 93736

PROJECT #:	0250509.0111	DATE:	11-05-2025
SCALE:	As shown	DRAWN BY:	EJS



- Material Handling
- Stockpiles
- Water Supply_River Pump
- Water Supply_Well
- Exit Entrance Points
- Paved Haul Road
- Unpaved Access Road
- Unpaved Haul Road
- Property Boundary

SESPE CONSULTING, INC.
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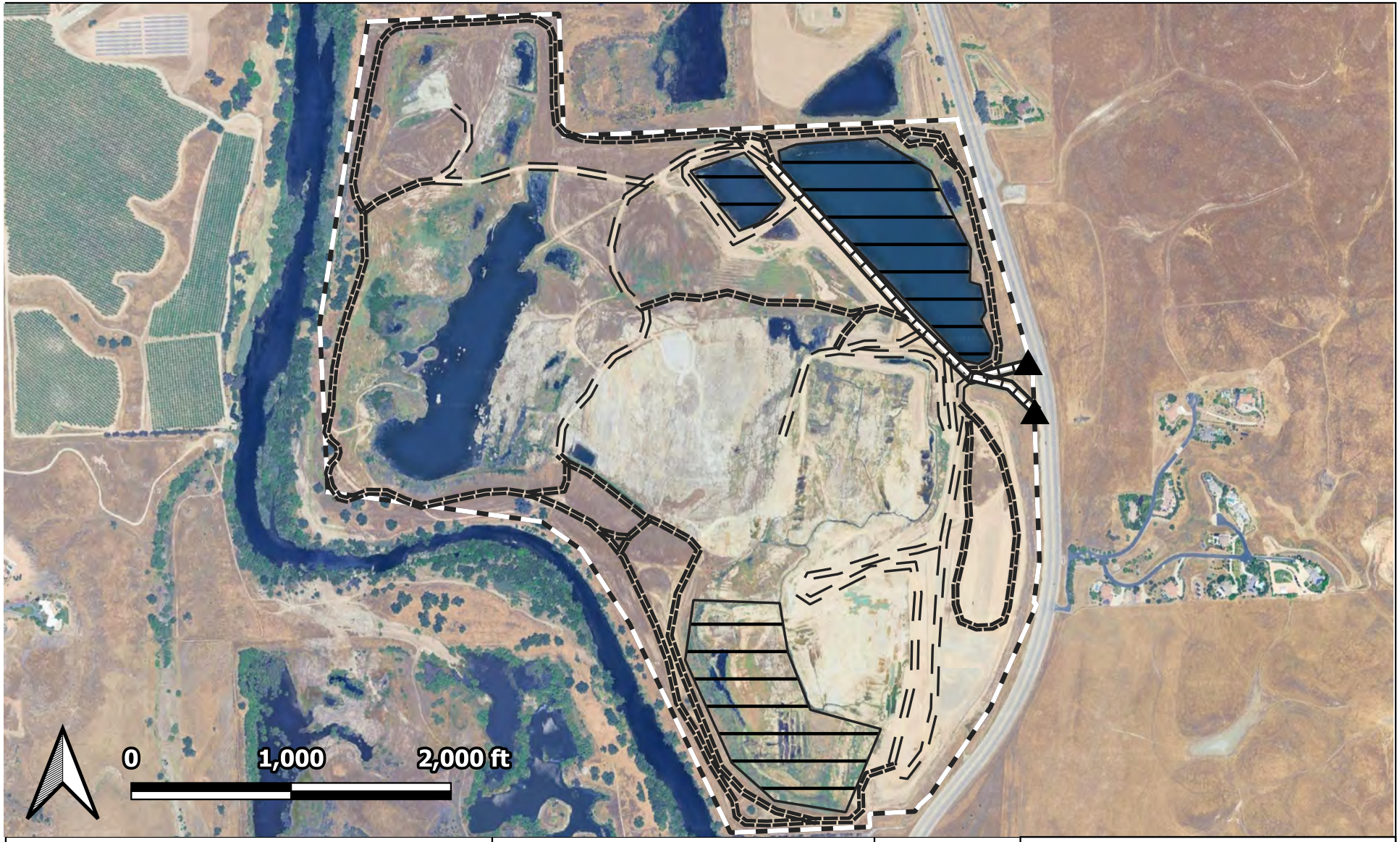
FIGURE 3

Plant Plot Plan
CEMEX Rockfield Quarry
13475 N Friant Road
Fresno, California 93736

PROJECT #:	0250509.0111	DATE:	11-07-2025
SCALE:	As shown	DRAWN BY:	EJS



Paved Haul Road

Unpaved Access Road

Unpaved Haul Road

Exit Entrance Points

Water Supply_Ponded Pits

Property Boundary

SESPE CONSULTING, INC.

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FIGURE 4

Quarry Plot Plan
CEMEX Rockfield Quarry
14765 N Friant Road
Fresno, California 93736

PROJECT #:	0250509.0111	DATE:	11-07-2025
SCALE:	As shown	DRAWN BY:	EJS

Rockfield Plant Daily Track-Out Inspection and Clean-up Log

Year: _____

Log for recording daily trackout inspections on N Friant Rd

Inspections to be conducted once daily at the end of the work day, or more frequently

All trackout must be removed by the end of the workday. Trackout extending more than 50 feet from the Cemex access road must be cleaned immediately

	Day																													
Month	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
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6																															
7																															
8																															
9																															
10																															
11																															
12																															

Legend

N **No trackout observed**

C **Trackout observed and cleaned**

Plant Manager : _____

Rockfield Quarry Daily Track-Out Inspection and Clean-up Log

Year: _____

Log for recording daily trackout inspections on N Friant Rd

Inspections to be conducted once daily at the end of the work day, or more frequently

All trackout must be removed by the end of the workday. Trackout extending more than 50 feet from the Cemex access road must be cleaned immediately

	Day																													
Month	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
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6																															
7																															
8																															
9																															
10																															
11																															
12																															

Legend

N **No trackout observed**

C **Trackout observed and cleaned**

Plant Manager : _____

Rockfield Plant Daily Water Truck Log

Completed By (Name) _____

Date _____

	Fill Area	Stockpiles	Access Roads	Main Haul Road	Operations	Other
00:00-01:00						
01:00-02:00						
02:00-03:00						
03:00-04:00						
04:00-05:00						
05:00-06:00						
06:00-07:00						
07:00-08:00						
08:00-09:00						
09:00-10:00						
10:00-11:00						
11:00-12:00						
12:00-13:00						
13:00-14:00						
14:00-15:00						
15:00-16:00						
16:00-17:00						
17:00-18:00						
18:00-19:00						
19:00-20:00						
20:00-21:00						
21:00-22:00						
22:00-23:00						
23:00-24:00						

Total Daily Estimated Water Applied: _____

Rockfield Quarry Daily Water Truck Log

Completed By (Name) _____

Date _____

	Fill Area	Stockpiles	Access Roads	Main Haul Road	Operations	Other
00:00-01:00						
01:00-02:00						
02:00-03:00						
03:00-04:00						
04:00-05:00						
05:00-06:00						
06:00-07:00						
07:00-08:00						
08:00-09:00						
09:00-10:00						
10:00-11:00						
11:00-12:00						
12:00-13:00						
13:00-14:00						
14:00-15:00						
15:00-16:00						
16:00-17:00						
17:00-18:00						
18:00-19:00						
19:00-20:00						
20:00-21:00						
21:00-22:00						
22:00-23:00						
23:00-24:00						

Total Daily Estimated Water Applied: _____

Rockfield Plant/Quarry Dust Suppressant Application Log

Completed By (Name) _____

Product Used & Solution % _____

Date / Time	Area Treated	Application Rate (Gal/Acre)	Equipment Used	Notes

Regulation VIII Record Keeping Form

Month:

FORM C: For Permanent / Long Term Dust Controls

Project Location: _____ City: _____ Size: _____ (Miles/ Acres)

Owner: _____ Address: _____ City: _____ Zip: _____

Contact Person: _____ Title: _____ Phone: _____

Permanent Activities

Describe the types of permanent dust controls implemented, the date, the activity, such as applying an organic dust suppressant, gravel, paving or a trackout control device. Add comments such as the amount used, where used, brand name.

Date	Dust Control Activity Performed (Gravel, paving)	Comments: Type of material, application rate.

Comments: _____

Retain for one year after project ends. Title V sources are required to retain for five years after project ends. Attach product information, maps and other specifications as appropriate unless already addressed in an approved or verified Fugitive PM10 Management Plan.

APPENDIX L CALIFORNIA RENEWABLE DIESEL PHASE-IN REPLACEMENT FOR ULTRA LOW SULFUR DIESEL AND CARBON INTENSITY

Memo and graphs.

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MEMORANDUM

SESPE CONSULTING, INC.
A Trinity Consultants Company

3990 Old Town Ave, Suite A203 • San Diego, CA 92110
Office (619) 894-8669 • Fax (805) 667-8104

Date: April 23, 2026

To: Pat Mitchell, Senior Counsel, Mitchell & Chadwick

From: Scott Cohen, Manager of Consulting Services, San Diego Office
Valerie Rosenkrantz, Managing Consultant

Cc: Ms. Christine Jones, Senior Manager Permitting & Land Entitlements, CEMEX

Re: **California LCFS Program and Renewable Diesel Emissions Reductions Documentation (Appendix L)**

Low Carbon Fuel Standard

The Low Carbon Fuel Standard (LCFS) is one of nine discreet early action measures to reduce California's greenhouse gas emissions (GHG) under the AB 32 Scoping Plan. The LCFS is designed to decrease the carbon intensity of California's transportation fuel pool and provide an increasing range of low-carbon and renewable fuels alternatives. The California Air Resources Board (CARB) approved the LCFS regulation in 2009; program implementation began in 2011. LCFS program amendments are periodically approved to strengthen and smooth the carbon intensity (CI) benchmarks.[1]

The LCFS program is based on the principle that each fuel has "life cycle" GHG emissions that include CO2, CH4, N2O, and other GHG contributors. This life cycle assessment examines the GHG emissions associated with the production, transportation, and use of a given fuel. The life cycle assessment includes direct emissions associated with producing, transporting, and using the fuels, as well as significant indirect effects on GHG emissions, such as changes in land use for some biofuels. The CI scores assessed for each fuel are compared to a declining CI benchmark for each year. Low carbon fuels below the benchmark generate credits, while fuels above the CI benchmark generate deficits. Credits and deficits are denominated in metric tons of GHG emissions. Providers of transportation fuels are now required to demonstrate that the mix of fuels they supply for use in California meets the LCFS carbon intensity standards, or benchmarks, for each annual compliance period.

Renewable Diesel Growth in California Fuel Pool

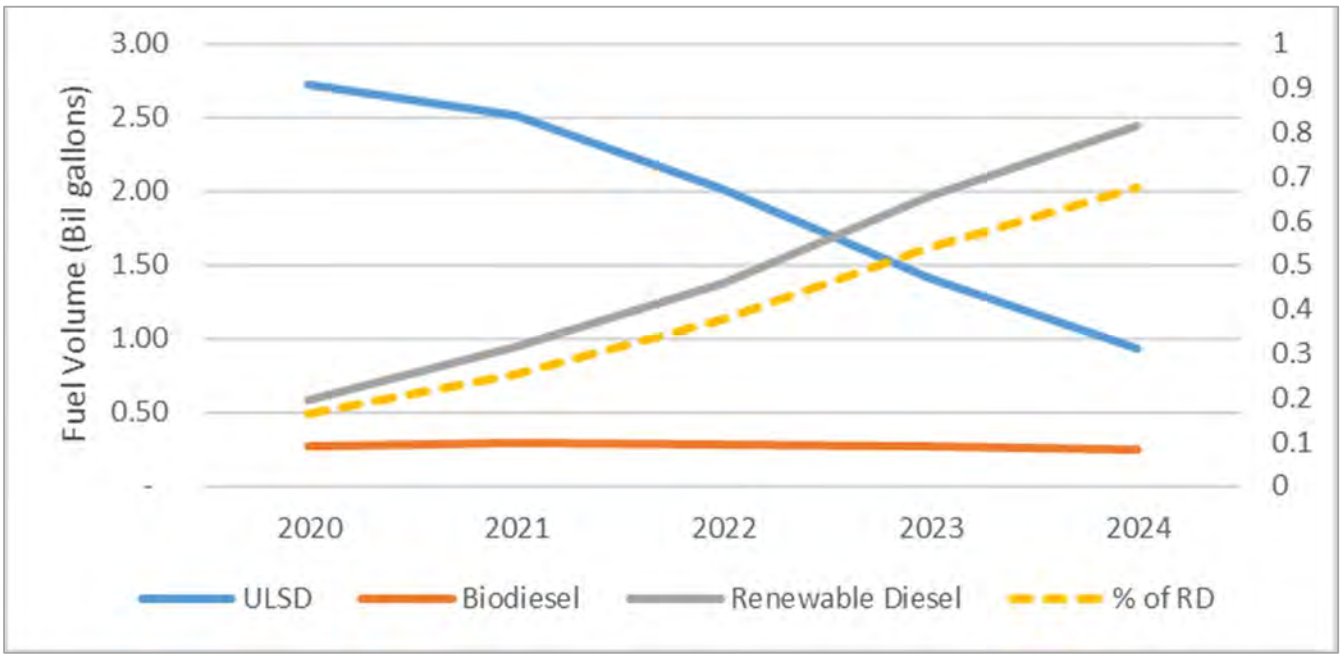
Renewable diesel (RD) currently makes up approximately 70% of the California diesel fuel pool. Over the last five years, this has trended upward from 16% in 2018 to the latest full year data of 2024 as seen in **Figure 1.**[2] As RD is

[1] CARB, 2025a, Low Carbon Fuel Stand Regulation, Table 2, Title 17, California Code of Regulations (CCR), sections 95480-95503, effective July 1, 2025. https://ww2.arb.ca.gov/sites/default/files/2025-08/2025_lcfs_fro_oal-approved_unofficial_08112025.pdf

[2] CARB 2025b, Quarterly LCSF Data Collected including total credits, deficits and volume of fuel reported under the LCFS program, https://ww2.arb.ca.gov/sites/default/files/2025-07/quarterlysummary_Q12025_2.xlsx

a drop-in fuel for fossil-derived Ultra Low Sulfur Diesel (ULSD), no additional additives are necessary, keeping its relative cost compared to biodiesel at a minimum. Therefore, the percentage of biodiesel (BD) within the diesel fuel pool is expected to remain stagnant or eventually be replaced by RD production, as both use the same feedstocks.

Figure 1. Renewable Diesel Growth in CA Fuel Pool



Source: CARB 2025b, LCFS Liquid Heavy Duty Fuel Use in CA between 2020 through 2024

The current Low Carbon Fuel Standard (LCFS) gasoline and diesel compliance targets will continue to increase the need for renewables to be blended or directly replace petroleum fuels to meet annual deadlines, suggesting that the ULSD fuel pool may eventually be dominated by RD, and other low carbon diesel fuel options.

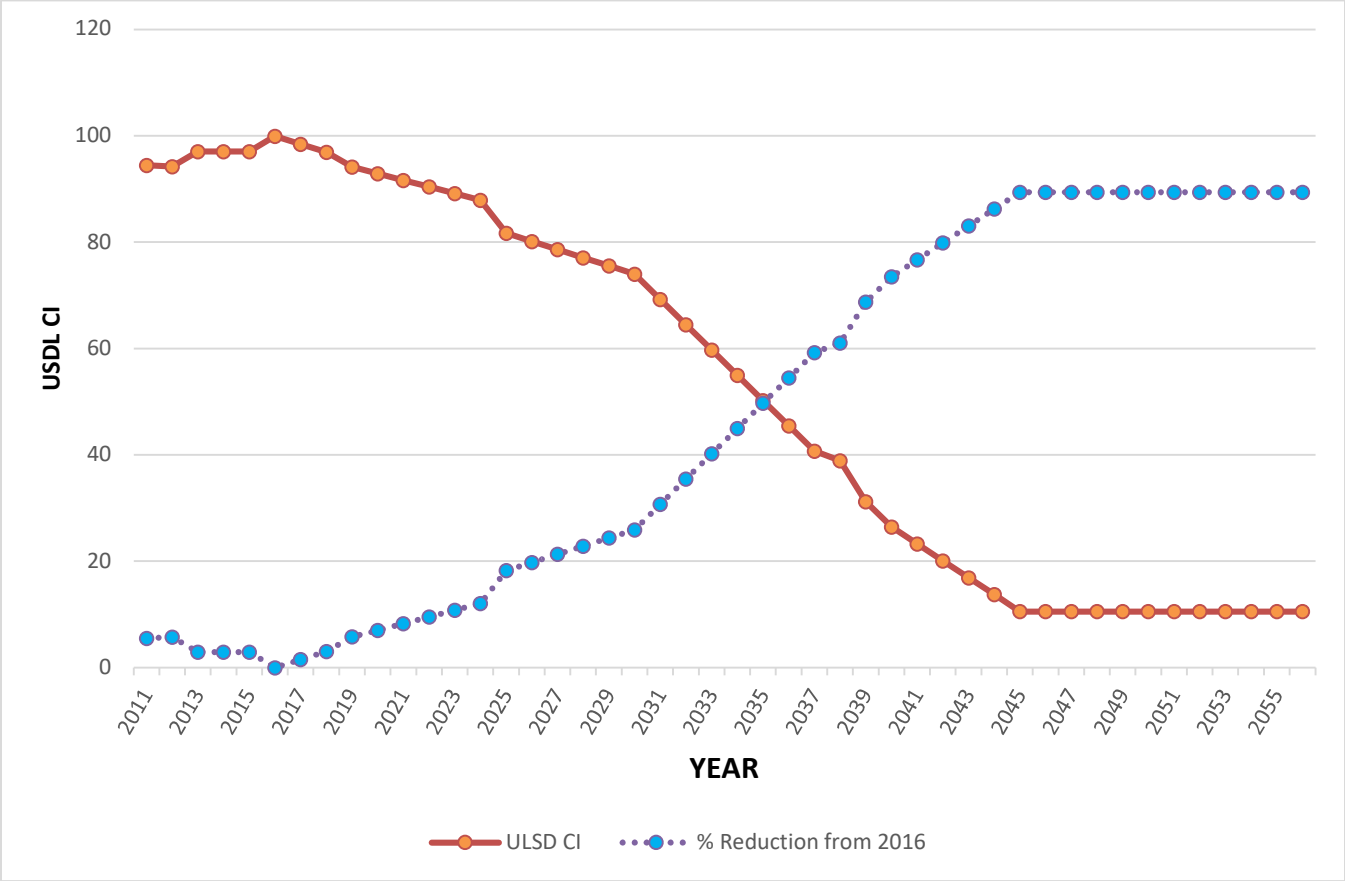
Two other programs that have been monitoring fuel production are the California Energy Commission (CEC) or the US Energy Information Administration (EIA) and these two programs also did not capture renewable fuel production data prior to 2010. As for data captured in 2011, the LCFS recorded Renewable Diesel (RD) production to be 1.8 million gallons while in comparison the Low-Sulfur Diesel Fuel (LSDF) production was reported to be approximately 3.6 billion gallons1 (Fuels tab); this 2011 data shows that RD is less than 0.05% of the fuels used in 2011. While there is no data from 2005, a conservative estimate would be that RD (and other low CI fuel types) was less than 0.05% percent of the fuel feed stock.

LCFS 2025 CI Benchmark Data

The 2025 CI benchmarks for the ultra-low sulfur diesel (ULSD) reflects the mix of diesel fuel types projected to be produced in California between 2025 and 2045. **Figure 2** illustrates the change in ULSD CI between 2011, the first year the LCFS program collected fuels data, and 2056, the year the CEMEX project is expected to achieve

maximum production.[3] The CI benchmark for year 2045 was projected to be the same for the years 2046 through 2056.

Figure 2. ULSD CI and Percent Reduction from Year 2016



Source: CARB 2025a, 2025 LCFS Regulation

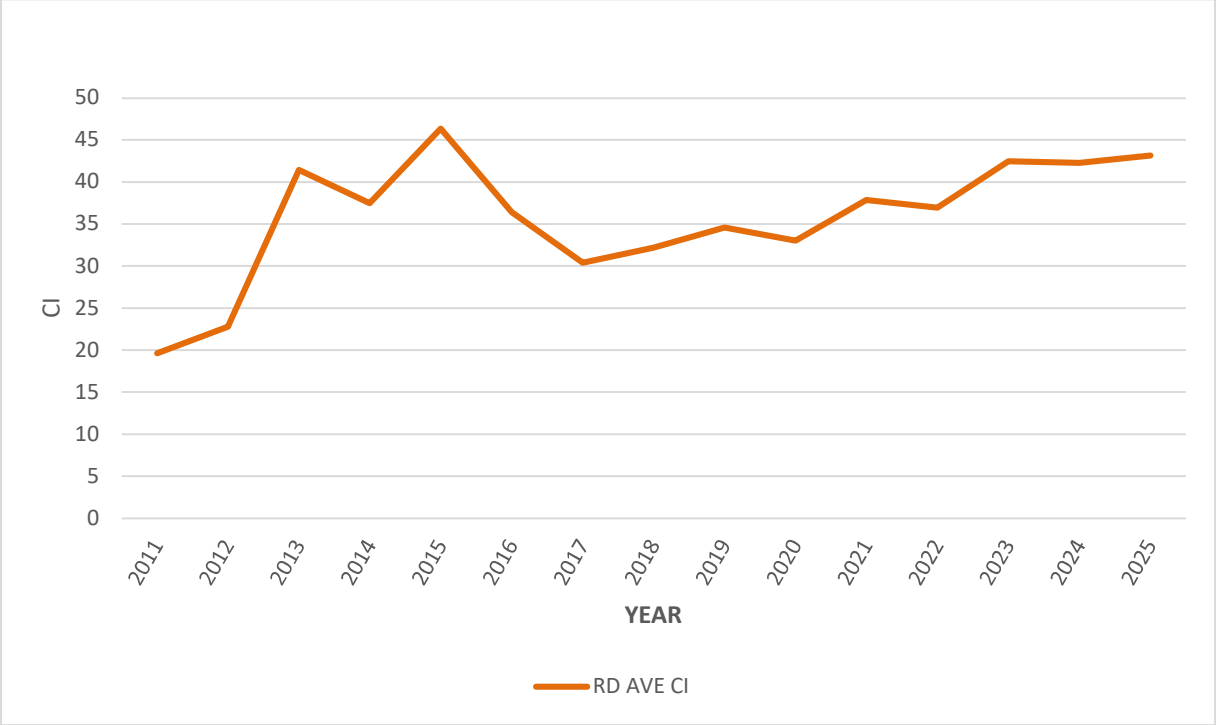
Carbon Intensity Reductions with Renewable Diesel

The carbon intensities (CIs) of renewable diesel (RD) and low sulfur diesel fuel (LSDF) have been estimated from CARB's Quarter LCFS data collection program.[4] CI is a reliable approximation of the difference in emissions between RD and LSDF. **Figure 3** illustrates the quarterly CI variations for RD between 2011 and 2025 with a current average CI of approximately 42.7 for the years 2023 through 2025. **Figure 4** illustrates the CI variations for LSDF for the same period and has an average CI of approximately 101.5 for the years 2023 through 2025.

[3] CARB, 2025a, Low Carbon Fuel Stand Regulation, Table 2, Title 17, California Code of Regulations (CCR), sections 95480-95503, effective July 1, 2025. https://ww2.arb.ca.gov/sites/default/files/2025-08/2025_lcfs_fro_oal-approved_unofficial_08112025.pdf

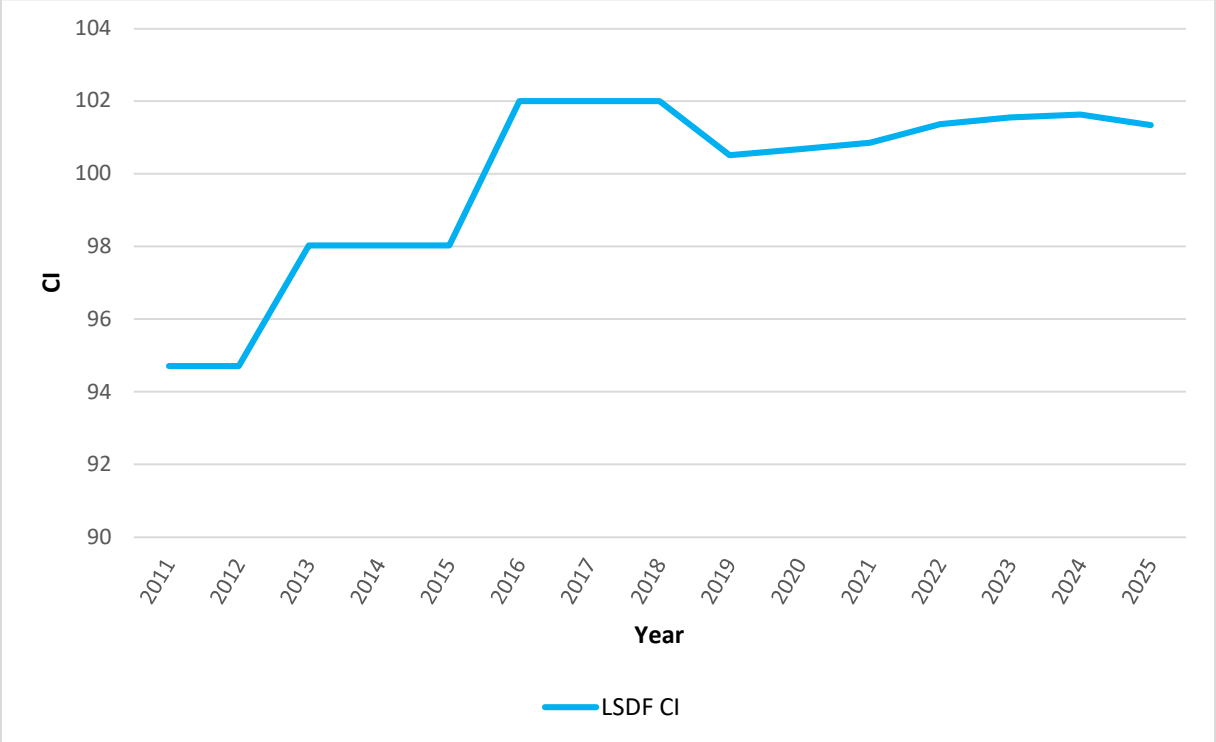
[4] CARB 2025b, Quarterly LCSF Data Collected including total credits, deficits and volume of fuel reported under the LCFS program, https://ww2.arb.ca.gov/sites/default/files/2025-07/quarterlysummary_Q12025_2.xlsx

Figure 3. Renewable Diesel CI Average



Source: CARB 2025b, Quarterly LCSF Data

Figure 4. LSDF CI Average

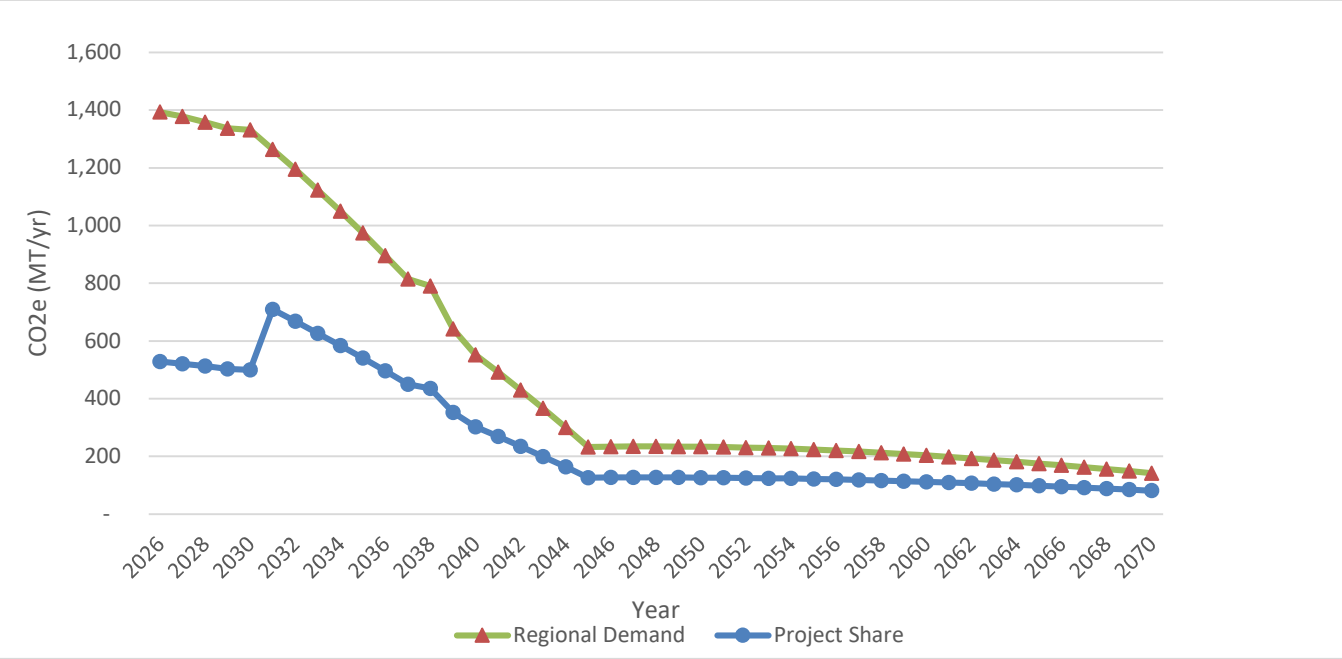


Source: CARB 2025b, Quarterly LCSF Data

Project Incremental Share of Regional Off-Site On-Road Demand GHGs

As described in Regional Aggregates Demand and Effect on Air Quality memo (Appendix J, dated April 21, 2026), the Project's fair share of the future increase in regional truck trips is much less than the PTE of those trucks. **Figure 5** below illustrates the Project's incremental share of maximum GHG emissions over time when accounting for the ULSD 2025 CI benchmarks data illustrated in **Figure 2** above and the projected CI reductions from the increase of RD in the diesel fuel pool. Based on **Figure 5**, the maximum off-site on-road GHG emissions would be realized in Year 2026.

Figure 5. Project's Fair Share of Off-Site On-Road Aggregate GHG Emissions



Source: Sespe 2026, Appendix J.

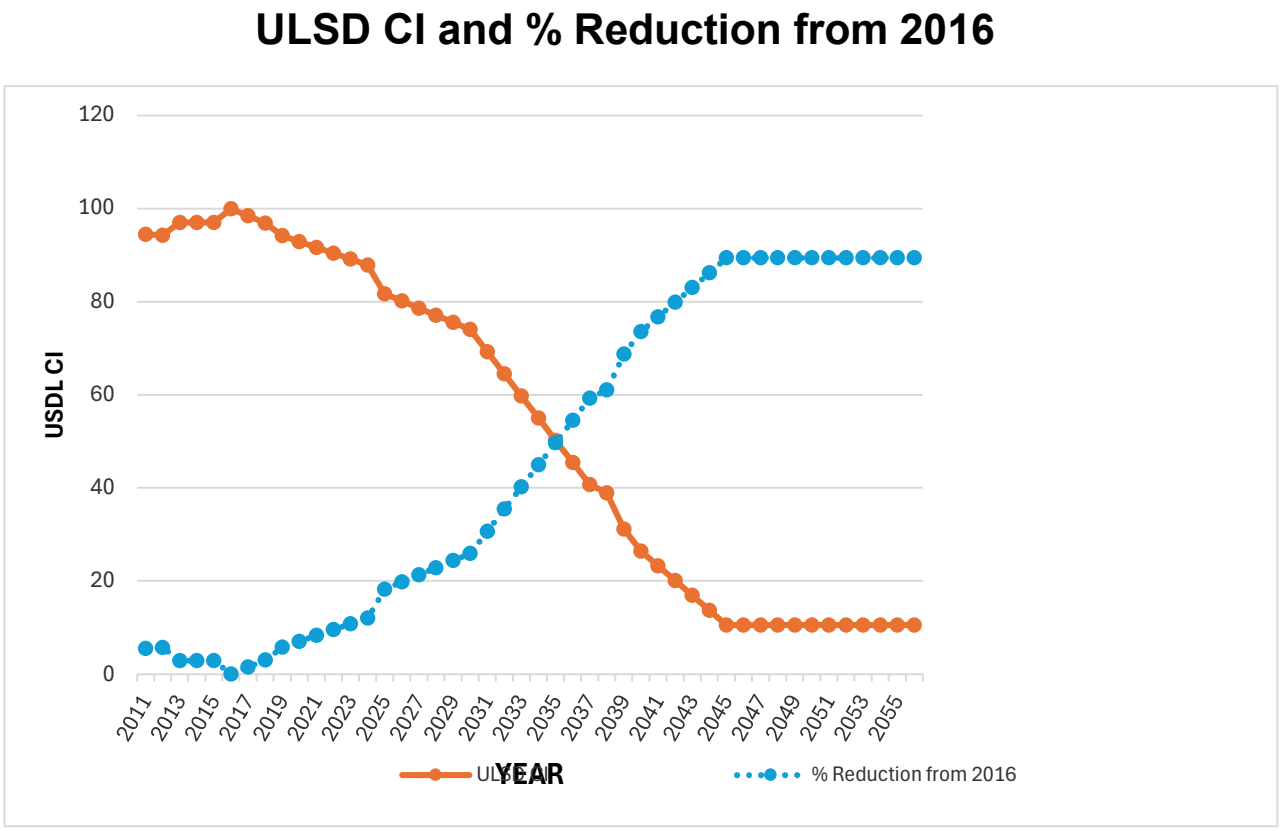
California In-Use Off-Road Diesel-Fueled Fleets Regulation

CARB additionally implemented amendments to sections 2449, 2449.1, and 2449.2 of title 13, California Code of Regulations to reduce oxides of nitrogen (NOx), diesel particulate matter (PM) and other criteria pollutant emissions from in-use off-road diesel fueled fleets in California.[5] The estimated emissions from CEMEX Rockfield operations includes extensive activities from off-road diesel fueled equipment. Of note is that beginning January 1, 2024, large and medium fleets, and on January 1, 2028, small fleets, must meet the tiered phase out requirements for this Regulation for In-Use Off-Road Diesel-Fueled Fleets. Additionally, beginning January 1, 2024, all fleets must meet the renewable diesel requirements specified in section 2449.1(f). Based on the analysis of data reported above from the LSCF Rule and averaged quarterly reporting as well as the California In-Use Off Road Diesel-Fuels Fleet Requirements, use of a 50% reduction when substituting RD for LSDF is reasonably conservative estimate of the change in CEMEX future off-road equipment Project GHG emissions. This is less than the 55% reduction in CI measured in 2025 between RD and LSDF (Tables 3 and 4) and the approximately 90% in ULSD projected for 2045 (Table 2).

[5] https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/off-roaddiesel/froa-1.pdf

Table 2. ULSD Carbon Intensity Values from LCFS Benchmarks

Year	ULSD CI	% Reduction from 2016	% Reduction from 2016
2011	94.47	4%	4
2012	94.24	4%	4
2013	97.05	1%	1
2014	97.05	1%	1
2015	97.05	1%	1
2016	99.97	-2%	-2
2017	98.44	0%	0
2018	96.91	2%	2
2019	94.17	4%	4
2020	92.92	6%	6
2021	91.66	7%	7
2022	90.41	8%	8
2023	89.15	9%	9
2024	87.89	11%	11
2025	81.7	17%	17
2026	80.17	19%	18.6
2027	78.63	20%	20
2028	77.1	22%	22
2029	75.57	23%	23
2030	74.03	25%	25
2031	69.27	30%	30
2032	64.51	34%	34
2033	59.75	39%	39
2034	54.99	44%	44
2035	50.23	49%	49
2036	45.47	54%	54
2037	40.71	59%	59
2038	38.95	60%	60
2039	31.19	68%	68
2040	26.44	73%	73
2041	23.26	76%	76
2042	20.09	80%	80
2043	16.92	83%	83
2044	13.74	86%	86
2045	10.57	89%	89



2046	10.57	89%	89
2047	10.57	89%	89
2048	10.57	89%	89
2049	10.57	89%	89
2050	10.57	89%	89
2051	10.57	89%	89
2052	10.57	89%	89
2053	10.57	89%	89
2054	10.57	89%	89
2055	10.57	89%	89
2056	10.57	89%	89

Source: CARB 2025, 2025 LCFS Regulation

Table 3. Renewable Diesel CI Average

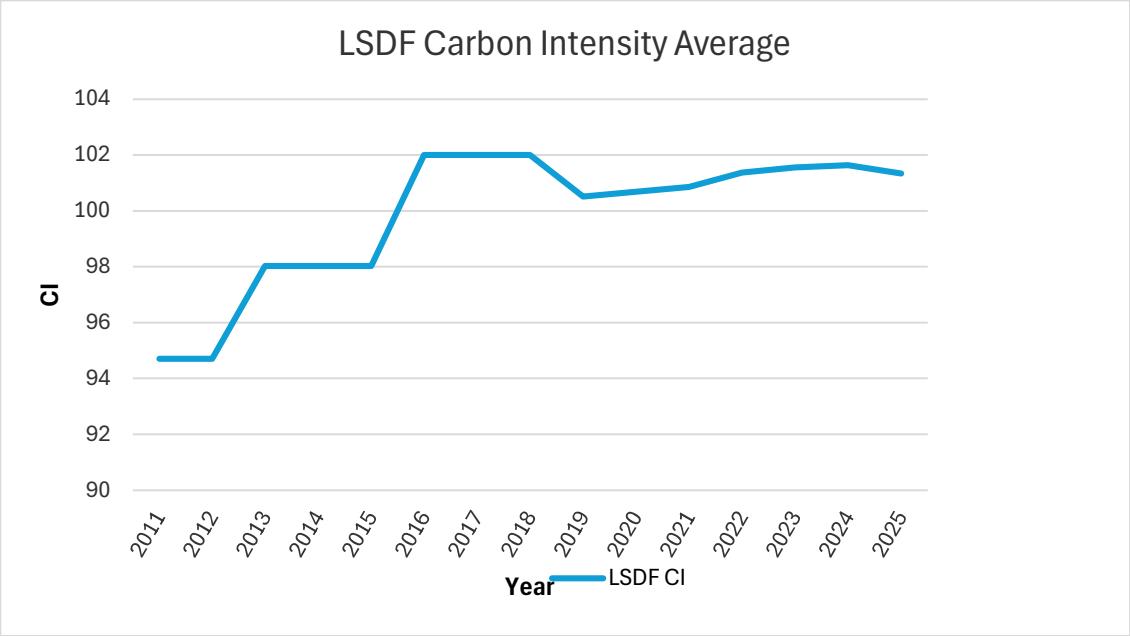
The RD CI average is directly from
https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/dashboard/quarterlysummary/quarterlysummary_Q32025.xlsx (Fuels Tab)

YEAR	RD AVE CI	
2011	19.65	
2012	22.77	
2013	41.45	
2014	37.46	
2015	46.38	
2016	36.40	
2017	30.41	
2018	32.17	
2019	34.59	
2020	33.04	
2021	37.86	
2022	36.96	
2023	42.47	
2024	42.29	
2025	43.17	42.64

RD MaX	46.3775		
ULSD (2% RD)	102.01		
% Reduction	55%	or round down to	50% assumed reduction for offroad requiremnet to burn only RD99 or RD10(

Table 4. LSDF CI Average

Year	Base	Inc	LSDF CI	
2011	94.71		94.71	
2012	94.71		94.71	
2013	98.03		98.03	
2014	98.03		98.03	
2015	98.03		98.03	
2016	102.01		102.01	
2017	102.01		102.01	
2018	102.01		102.01	
2019	100.45	0.06	100.51	
2020	100.45	0.23	100.68	
2021	100.45	0.41	100.86	
2022	100.45	0.92	101.37	
2023	100.45	1.1	101.55	
2024	100.45	1.18	101.63	
2025	100.45	0.89	101.34	101.5067



Note: The LSDF CI Average that was generated from the FPC list (downloadable through the LRT-CBTS tool) along with incremental deficit adjustments based on LCFS Crude Oil Life Cycle Assessment | California Air Resources Board (2023 year reported adjustment applied to 2025 CI).

APPENDIX D-4
REVISED SECTION 4.3, AIR QUALITY

4.3—AIR QUALITY

This section of the Draft EIR documents potential project impacts associated with air quality and air pollutant emissions. Impacts considered in this section include the potential for project air emissions to exceed established thresholds or to cause or contribute to exceedance of state or federal ambient air quality standards. The section also considers human health risks associated with air pollutant emissions resulting from the project and the potential for public nuisance as a result of project odors.

The information in this section is based on a peer review of Applicant-prepared studies and publicly available sources. The Applicant-prepared studies used are:

- *Air Quality, Health Risk, and Climate Change Impact Assessment*. CEMEX Rockfield Modification Project, County of Fresno, California. Prepared by Sespe Consulting, Inc. [Sespe]. December 4, 2019. (Appendix D-1, "Air Quality, Health Risk, and Climate Change Impact Assessment")
- *Rockfield Air Quality Section Addendum No. 2, Revision 2*. CEMEX Rockfield Modification Project. Prepared by Sespe. March 7, 2022. (Appendix D-2, "Addendum to Air Quality, Health Risk, and Climate Change Impact Assessment")
- *Air Quality, Health Risk, and Climate Change Impact Assessment*. CEMEX Rockfield Modification Project. Prepared by Sespe. Revised May 13, 2026. (Appendix D-3, "Air Quality, Health Risk and Climate Change Impact Assessment")

The *Air Quality, Health Risk, and Climate Change Impact Assessment* (Air Quality Assessment) was peer reviewed by County-retained Taylor Environmental Services, Inc. (Taylor Environmental) in September 2020. The peer review comments are on file with the County. In October of 2020, Sespe prepared *Addendum No. 2 (Version 1) to the Air Quality, Health Risk, and Climate Change Impact Assessment*. Comments were provided by Taylor Environmental and Sespe updated the document in response. In December 2020, Taylor Environmental confirmed that *Addendum No. 2 (Version 1)* adequately addressed the peer review comments. In May 2021, comments on *Addendum No. 2 (Version 1)* were provided by Benchmark Resources. Per Benchmark's comments, Sespe provided an updated document (*Addendum No. 2, Revision 1*) in June 2021. Further comments were provided by Benchmark in February 2022. In response, Sespe revised the addendum again in March 2022, creating *Addendum No. 2, Revision 2*. Benchmark confirmed that the *Rockfield Air Quality Section Addendum No. 2, Revision 2* (Addendum) completed in March 2022 adequately addressed all comments and questions. Comments collected during the 2025 public comment period for the Draft EIR lead to the revised May 13, 2026, *Air*

Quality, Health Risk and Climate Change Impact Assessment (Appendix D-3). Appendix D-3 replaces Appendix D-1 and D-2 in their entirety.

4.3.1 Environmental Setting

Location and the amount of air pollutants are the primary factors that influence air quality; however, topography, climate, and meteorological conditions are also influential factors because they determine the movement and dispersal of air pollutants. California is divided into fifteen air basins, each with its own unique regional climate. The Quarry Site and Plant Site (project sites) are located in the central portion of the San Joaquin Valley Air Basin (Basin).

Although marine air generally flows into the Basin from the San Joaquin River delta, the region's topographic features restrict air movement within the Basin. The Coast Range hinders wind access into the Valley from the west, the Tehachapi Mountains prevent southerly passage of air, and the Sierra Nevada mountain range to the east is a barrier to air movement. These topographic features result in weak air flow, which becomes blocked vertically by high barometric pressure over the Basin. As a result, the Basin is susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500 to 3,000 feet).

During the summer season, wind usually originates at the north end of the Valley, passing through Tehachapi Pass into the Mojave Desert Air Basin. During the winter, wind occasionally originates from the south end of the Valley and flows in a north-northwesterly direction. During the winter months, the Valley experiences light, variable winds, which are usually less than 10 miles per hour (mph). Low wind speeds combined with low inversion layers during the winter creates a climate conducive to the accumulation of carbon monoxide (CO) and suspended particulate matter.

The local climatology of the project sites are best represented by ambient temperature measurements at the Western Regional Climate Center (WRCC)-operated Friant Government Camp Station in Fresno County. The highest average monthly maximum temperatures of about 100°F occur in July (WRCC 2012a). The lowest average monthly minimum temperatures of about 37°F occur in December and January (WRCC 2012a). Average annual precipitation of approximately 14 inches occurs as rainfall primarily during the months of November through March (WRCC 2012b). Summer rainfall is minimal and generally limited to scattered thundershowers over the Sierra Nevada mountain range.

4.3.1.1 Environmental Factors Affecting Air Quality

Ambient concentrations of air pollutant emissions are determined by the amount of emissions released by pollutant sources and the atmosphere's ability to transport and dilute such emissions. Natural factors affecting transport and dilution include terrain, wind, atmospheric stability, and sunlight. Existing air quality conditions in the project area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutants. The environmental factors that affect ambient air pollutant concentrations are discussed separately below.

Topography, Wind Speeds, and Inversion Layers

Low wind speed conditions limit horizontal air dispersion and can result in the buildup of air pollutants. Poor air quality under low wind speed conditions can be especially pronounced in interior valleys such as the Basin, where the topography also contributes to the restriction of air movement and pollutant dispersion.

Inversion layers exist when the air temperature increases with elevation above the ground. The strength, altitude of, and duration of inversions determine the amount of vertical atmospheric mixing which occurs, which subsequently determines suspended particulate matter concentrations in the Basin. Temperature inversions occur in a stable atmosphere of warm air over cooler air hindering the upward dispersion of pollutants. Mixing ceases at the base of the inversion, which is also known as the mixing height. The Basin experiences two common types of inversions: radiation inversions and subsidence inversions.

Nocturnal cooling of an air layer near the Basin floor causes radiation inversions. It extends upward several hundred feet and occurs during the evening and early morning hours. During a radiation inversion, little vertical mixing occurs near the surface. The inversion dissipates when solar radiation warms the ground, which in turn heats the lower layers of the atmosphere. This heating causes the surface-based inversion to weaken, and finally dissipate, which allows vertical mixing through a greater depth in the atmosphere. Inversions are more persistent (stable) during the winter months, when inversions occur from 50 to 1,000 feet above the Basin floor. Studies in the southern part of the Basin indicate more frequent and persistent early morning radiation inversions than in the northern part of the valley due to the lack of marine air intrusion.

Subsidence inversions are caused by downward vertical motion in the atmosphere. As air descends, it warms due to compression, and as a result becomes warmer than the air beneath it. This is common when the semi-permanent Pacific High pressure system is

located off the west coast, which typically occurs during the summer months (San Joaquin Valley Air Pollution Control District [Air District] 2003).

Solar Radiation and its Impact on Photochemical Pollutants

The higher intensity and longer duration of solar radiation during the Valley's summer months provide ultraviolet light and warm temperatures that promote the formation of secondary photochemical pollutants (e.g., ozone). Sunlight intensity and summer temperatures are much higher in inland areas than near the coast, causing them to be especially prone to photochemical air pollution. In contrast, photochemical pollutants do not usually reach significant levels anywhere in the Valley during the winter, when temperatures are lower and daylight hours are shorter.

4.3.1.2 Pollutants and Health Effects

Air pollution contributes to a wide variety of adverse health effects. The U.S. Environmental Protection Agency (EPA) has established national ambient air quality standards (NAAQS) for six of the most common air pollutants—CO, lead, ground-level ozone (O_3), particulate matter, oxides of nitrogen (NO_x), and oxides of sulfur (SO_x)—known as "criteria" air pollutants. The California Air Resources Board (ARB) also has adopted California ambient air quality standards (CAAQS) for these same criteria air pollutants. In this Draft EIR, NAAQS and CAAQS are also referred to as the "state and federal ambient air quality standards." The presence of criteria pollutants in ambient air is generally caused by numerous, diverse, and widespread sources of emissions.

Ambient air quality standards are established to protect the public from adverse health effects of criteria pollutants and to provide protection against visibility impairment and damage to animals, crops, vegetation, or buildings.

The Office of Environmental Health Hazard Assessment (OEHHA) relies upon the following definition of "adverse respiratory health effect":

> *Medically significant physiologic or pathologic changes generally evidenced by one or more of the following:*
>
> 1. *Interference with the normal activity of the affected person or persons;*
> 2. *Episodic respiratory illness;*
> 3. *Incapacitating illness;*
> 4. *Permanent respiratory injury; and/or*
> 5. *Progressive respiratory dysfunction. (OEHHA, 6/2004).*

OEHHA considers the following "dimensions" of adverse effects when determining an adverse health effect:

1. *Biomarkers: These should be considered; however it must be kept in mind that few biomarkers have been validated sufficiently to establish their use for defining a point at which a response becomes adverse, consequently, not all changes in biomarkers should necessarily be considered adverse.*
2. *Quality of life: In recent years, decreased health-related quality of life has become widely accepted as an adverse health effect. The review committee concluded that reduction in quality of life, whether in healthy persons or persons with chronic respiratory disease, should be considered as an adverse effect.*
3. *Physiological impact: The committee recommended that small, transient reductions in pulmonary function should not necessarily be regarded as adverse, although permanent loss of lung function should be considered adverse. The committee also recommended that reversible loss of lung function in conjunction with symptoms should be considered adverse.*
4. *Symptoms: Air pollution-related symptoms associated with reduced quality of life or with a change in clinical status (i.e., requiring medical care or a change in medications) should be considered adverse at the individual level. At the population level, the committee suggested that any detectable increase in symptom frequency should be considered adverse.*
5. *Clinical outcomes: Detectable effects of air pollution on clinical measures should be considered adverse. More specifically, the ATS committee cited as examples increases in emergency department visits for asthma or hospitalizations for pneumonia, at the population level, or an increased need to use bronchodilator medication, at the individual level. The committee recommended that: "no level of effect of air pollution on population-level clinical indicators can be considered acceptable."*
6. *Mortality: Increased mortality should clearly be judged as adverse.*
7. *Population health versus individual risk: The committee concluded that a shift in risk factor distribution, and hence the risk profile of an exposed population, should be considered adverse when the relationship between the risk factor and the disease is causal, even if there is no immediate occurrence of obvious illness. (OEHHA, 6/2004).*

Based on these recommendations, many health outcomes found to be associated with criteria pollutants could be considered adverse including pulmonary function changes accompanied by symptoms, pulmonary function changes and respiratory symptoms that reduce quality of life, large changes in pulmonary function, clinical outcomes such as emergency department visits for asthma, hospitalization for respiratory and cardiovascular disease, and mortality. Research now shows that some highly susceptible

individuals may respond to common exposures at or close to natural background pollutant levels that are often unavoidable. Health effects that have been associated with each of the criteria pollutants are summarized below.

Ozone

Ground-level ozone is a secondary pollutant that forms through the reaction of NO_x and volatile organic compounds (VOCs) in the atmosphere by a photochemical process involving sun energy. Chemicals that are precursors to ozone formation can also be emitted by natural sources, particularly trees and other plants. Generally, air districts prioritize NO_x reductions over VOC reductions because NO_x reductions would have greater effect on reducing ozone concentrations and be more protective of public health.

Ground-level ozone can pose risks to human health, in contrast to the stratospheric ozone layer that protects the earth from harmful wavelengths of solar ultraviolet radiation. Short-term exposure to ground-level ozone can cause a variety of respiratory health effects, including inflammation of the lining of the lungs, reduced lung function, and respiratory symptoms such as cough, wheezing, chest pain, burning in the chest, and shortness of breath. Ozone exposure can decrease the capacity to perform exercise. Exposure to ozone can also increase susceptibility to respiratory infection. Exposure to ambient concentrations of ozone has been associated with the aggravation of respiratory illnesses such as asthma, emphysema, and bronchitis, leading to increased use of medication, absences from school, doctor and emergency department visits, and hospital admissions. Short-term exposure to ozone is associated with premature mortality. Studies have also found that long-term ozone exposure may contribute to the development of asthma, especially among children with certain genetic susceptibilities and children who frequently exercise outdoors. Long-term exposure to ozone can permanently damage lung tissue (EPA 2016a).

Other health effects of ozone include:

- difficulty to breathe deeply and vigorously,
- shortness of breath and pain when taking a deep breath,
- coughing and sore or scratchy throat,
- inflammation and damage to the airways,
- aggravation of lung diseases such as asthma, emphysema, and chronic bronchitis,
- increased frequency of asthma attacks,
- increased susceptibility of the lungs to infection, and
- continued damage to the lungs even when the symptoms have disappeared (EPA 2021a).

Nitrogen Oxides

NO_x is a generic term for the mono-nitrogen oxides which include nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas and NO_2 is a reddish brown gas. NO_x is formed from fuel combustion under high temperature or pressure. NO_x is a primary component of the photochemical reaction that results on the formation of ozone. It also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition (i.e., acid rain). NO_x decreases lung function and may reduce resistance to infection. Acute exposure to NO_2 may cause pulmonary edema, pneumonitis, and bronchitis. NO_2 is considered a relatively insoluble, reactive gas, such as phosgene and ozone. Once inhaled, NO_2 reaches the lower respiratory tract, affecting mainly the bronchioles and the adjacent alveolar spaces, where it may produce pulmonary edema within hours (EPA 2016b).

Sulfur Oxides

Fossil fuel combustion by electrical utilities and industry is the primary source of sulfur dioxide (SO_2) in the United States. SO_2 emissions that lead to high concentrations of SO_2 in the air generally also lead to the formation of other SO_x. SO_x can react with other compounds in the atmosphere to form small particles. These particles contribute to particulate matter pollution. People with asthma are especially susceptible to the effects of sulfur dioxide. Short-term exposures of asthmatic individuals to elevated levels of sulfur dioxide while exercising at a moderate level may result in breathing difficulties, accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Studies also provide consistent evidence of an association between short-term sulfur dioxide exposures and increased respiratory symptoms in children, especially those with asthma or chronic respiratory symptoms. Short-term exposures to sulfur dioxide have also been associated with respiratory-related emergency department visits and hospital admissions, particularly for children and older adults (EPA 2017).

Particulate Matter

Particulate matter is a generic term for a broad class of chemically and physically diverse substances that exist as discrete particles (liquid droplets or solids) over a wide range of sizes. Particles originate from a variety of man-made stationary and mobile sources, as well as from natural sources like forest fires. The chemical and physical properties of particulate matter vary greatly with time, region, meteorology, and the source of emissions (EPA 2020).

For regulatory purposes, EPA distinguishes between categories of particles based on size and has established standards for fine and coarse particles. PM_{10}, in general terms, is an abbreviation for particles with an aerodynamic diameter less than or equal to 10

micrometers (μm), and it represents inhalable particles small enough to penetrate deeply into the lungs (i.e., thoracic particles). PM_{10} is composed of a coarse fraction referred to as $PM_{10-2.5}$ or as thoracic coarse particles (i.e., particles with an aerodynamic diameter less than or equal to 10 μm and greater than 2.5 μm) and a fine fraction referred to as $PM_{2.5}$ or fine particles (i.e., particles with an aerodynamic diameter less than or equal to 2.5 μm). Thoracic coarse particles are emitted largely as a result of mechanical processes and uncontrolled burning. Important sources include resuspended dust (e.g., from cars, wind, etc.), industrial processes, construction and demolition operations, residential burning, and wildfires. Fine particles are formed chiefly by combustion processes (e.g., from power plants, gas and diesel engines, wood combustion, and many industrial processes) and by atmospheric reactions of gaseous pollutants (EPA 2020).

Although scientific evidence links harmful human health effects from exposures to both fine particles and thoracic coarse particles, the evidence is much stronger for fine particles than for thoracic coarse particles. Effects associated with exposures to both $PM_{2.5}$ and PM_{10} include premature mortality, aggravation of respiratory and cardiovascular disease (as indicated by increased hospital and emergency department visits), and changes in subclinical indicators of respiratory and cardiac function. Such health effects have been associated with short- and/or long-term exposure to particulate matter. Exposures to $PM_{2.5}$ are also associated with decreased lung function growth, exacerbation of allergic symptoms, and increased respiratory symptoms. Children, older adults, individuals with preexisting heart and lung disease (including asthma), and persons with lower socioeconomic status are among the groups most at risk for effects associated with particulate matter exposures. Information is accumulating and currently provides suggestive evidence for associations between long-term $PM_{2.5}$ exposure and developmental effects, such as low birth weight and infant mortality resulting from respiratory causes (EPA 2019).

Lead

Historically, the primary source of lead emissions to the air was combustion of leaded gasoline in motor vehicles (such as cars and trucks), prior to the eradication of leaded gasoline in the United States in the mid-1990s. Since then, the remaining sources of lead air emissions have been industrial sources, including lead smelting operations, battery recycling operations, and piston-engine small aircraft that use leaded aviation gasoline. Lead accumulates in bones, blood, and soft tissues of the body. Exposure to lead can affect development of the central nervous system in young children, resulting in neurodevelopmental effects such as lowered IQ and behavioral problems (EPA 2021b).

Carbon Monoxide

Gasoline-fueled vehicles and other on-road and non-road mobile sources are the primary sources of CO in the United States. Exposure to CO reduces the capacity of the blood to carry oxygen, thereby decreasing the supply of oxygen to tissues and organs. Reduction in oxygen supply to the heart, in particular, causes critical complications. People with any heart disease already have a reduced capacity for pumping oxygenated blood to the heart, which can cause them to experience myocardial ischemia (reduced oxygen to the heart), often accompanied by chest pain (angina), when exercising or under increased stress. For these people, short-term CO exposure further affects their body's already compromised ability to respond to the increased oxygen demands of exercise or exertion. Therefore, people with angina or heart disease are at the greatest risk from ambient CO. Other potentially at-risk populations include those with chronic obstructive pulmonary disease, anemia, diabetes, and those in prenatal or elderly life stages (EPA 2010).

4.3.1.3 Toxic Air Contaminants

Toxic air contaminants are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A wide range of sources, from industrial plants to motor vehicles, emit toxic air contaminants. Toxic air contaminants can be emitted directly and can also be formed in the atmosphere through reactions among different pollutants. This section and the Air Quality Assessment (Appendix D-1 as updated in Appendix D-3) focus on direct toxic air contaminant emissions that would be associated with project mining, production, and reclamation activities, not those formed in the atmosphere. Diesel particulate matter, respirable crystalline silica, and naturally occurring asbestos are toxic air contaminants of concern associated with proposed project sources and are specifically discussed below.

The health effects associated with toxic air contaminants are quite diverse and generally are assessed locally, rather than regionally. Toxic air contaminants can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis or genetic damage; or short-term acute effects, such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches. For evaluation purposes, toxic air contaminants are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure. Non-carcinogenic substances differ in that they are generally assumed to feature a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

Acute and chronic exposure to non-carcinogens is expressed as a Hazard Index, which is the ratio of expected exposure levels to an acceptable reference exposure levels.

Toxic air contaminants are primarily regulated through state and local risk management programs. These programs are designed to eliminate, avoid, or minimize the risk of adverse health effects from exposures to toxic air contaminants. A chemical becomes a regulated toxic air contaminant in California based on designation by OEHHA. As part of its jurisdiction under Air Toxics Hot Spots Program (Health and Safety Code Section 44360(b)(2)), OEHHA derives cancer potencies and reference exposure levels for individual air contaminants based on the current scientific knowledge that includes consideration of possible differential effects on the health of infants, children and other sensitive subpopulations, in accordance with the mandate of the Children's Environmental Health Protection Act (Senate Bill 25, Escutia, Chapter 731, Statutes of 1999, Health and Safety Code Sections 39669.5 et seq.).

Respirable Crystalline Silica

Respirable crystalline silica refers to crystalline silicon dioxide with aerodynamic diameter less than four microns (i.e., 0.0004 centimeters). Crystalline silica or quartz is ubiquitous in nature. Most dust generated by construction and mining activities including blasting produces dust particles larger than 4 microns. These particles are too large to reach the alveoli of the lungs which are the target organ. Thus, respirable crystalline silica constitutes a tiny fraction of the dust from these sources and does not represent a significant health risk to neighbors of these types of projects. To result in toxic effects the silica needs to be crystalline, smaller than 4 microns, inhaled, and not exhaled.

Inhalation of respirable crystalline silica initially causes respiratory irritation and an inflammatory reaction in the lungs. Silicosis results from chronic exposure; it is characterized by the presence of histologically unique silicotic nodules and by fibrotic scarring of the lung. Lung diseases other than cancer associated with silica exposure include silicosis, tuberculosis/silicotuberculosis, chronic bronchitis, small airways disease, and emphysema. Ambient air exposures do not cause concern but levels to which workers (e.g., miners, sandblasters) may be exposed have been shown to cause cancer.

Diesel Particulate Matter

Diesel particulate matter is used as a surrogate for the mixture of compounds in diesel exhaust that have the potential to contribute to mutations in cells which can lead to cancer. These compounds include, but are not limited to, arsenic, benzene, formaldehyde, and nickel.

Long-term exposure to diesel exhaust particles poses the highest cancer risk of any toxic air contaminant evaluated by OEHHA. The ARB has estimated that about 70% of the cancer risk that the average Californian faces from breathing toxic air contaminants stems from diesel exhaust particles. In a comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely than workers who were not exposed to diesel emissions to develop lung cancer. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health, have calculated similar cancer risks from diesel exhaust as those calculated by OEHHA.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. People with allergies, existing cardiovascular disease, the elderly, and children considered sensitive populations for diesel particulate matter exposure. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks.

Naturally Occurring Asbestos

In Fresno County, naturally occurring asbestos is another toxic air contaminant of concern. Asbestos is the common name for a group of naturally occurring fibrous silicate minerals that can separate into thin but strong and durable fibers, with principal forms including chrysotile, crocidolite, amosite, tremolite, actinolite, and anthophyllite (OEHHA 2000). Naturally occurring asbestos is found in some areas throughout California, most commonly where ultramafic rock or serpentinite rock is present. When construction activities occur in areas with naturally occurring asbestos in the soils or rock, the asbestos fibers can become airborne and may be inhaled, which can cause chronic local inflammation and disrupt orderly cell division, both of which can facilitate the development of asbestosis (a noncancerous lung disease involving fibrotic scarring of the lungs) and cancer (OEHHA 2000).

4.3.1.4 Regional Air Quality and Attainment Status

The determination of whether a region's air quality is healthful or unhealthful is made by comparing contaminant levels in ambient air samples to the state and federal ambient air quality standards. Table 4.3-1, "Ambient Air Quality Standards," summarizes current standards.

Both the ARB and EPA use monitoring station data to designate an area's attainment status with respect to the state and federal ambient air quality standards, respectively, for criteria air pollutants. The purpose of these designations is to identify areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are "nonattainment," "attainment," and "unclassified." The "unclassified" designation is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. In the Basin, ozone (one-hour and eight-hour), PM_{10}, and $PM_{2.5}$ are designated as "nonattainment"; the remaining criteria pollutants are designated as "attainment" or "unclassified."

Table 4.3-1
Ambient Air Quality Standards

Pollutant	Average Time	California Standards[1]	National Standards[2]	
		Concentration[3]	*Primary*[3,4]	*Secondary*[3,5]
Ozone	1 hour	0.09 ppm (180 µg/m³)	—	Same as Primary Standard
	8 hours	0.070 ppm (137 µg/m³)	0.070 ppm (**137**~~147~~ µg/m³)	
NO_2	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)	0.053 ppm (100 µg/m³)	Same as Primary Standard
	1 hour	0.18 ppm (339 µg/m³)	0.100 ppm (188 µg/m³)	
CO	8 hours	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	None
	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	
SO_2	24 hours	0.04 ppm (105 µg/m³)	0.14 ppm (for certain areas)	—
	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)	—
	3 hours	—	—	0.5 ppm (1300 µg/m³)
	1 hour	0.25 ppm (655 µg/m³)	0.075 ppm (196 µg/m³)	—
PM_{10}	24 hours	50 µg/m³	150 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m³	—	
$PM_{2.5}$	24 hours	No Separate State Standard	35 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m³	**9.0**~~12.0~~ µg/m³	15.0 µg/m³

Pollutant	Average Time	California Standards[1]	National Standards[2]	
		Concentration[3]	*Primary[3,4]*	*Secondary[3,5]*
Lead[6]	30-day Average	1.5 µg/m³	—	—
	Calendar Quarter	—	1.5 µg/m³	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 µg/m³	
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m³)	—	—
Vinyl chloride	24 hours	0.01 ppm (26 µg/m³)	—	—
Sulfates	24 hours	25 µg/m³	—	—
Visibility-reducing particles	8 hours (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer because of particles when the relative humidity is less than 70%	—	—

Table Source: California Air Resources Board 2024~~2016~~

Table Notes:

ppm = parts per million by volume.

µg/m³ = micrograms per cubic meter.

mg/m³= milligrams per cubic meter.

1. California standards for ozone, CO, SO_2 (1-hour and 24-hour), NO_2, suspended particulate matter (PM_{10}, $PM_{2.5}$), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For NO_2 and SO_2, the standard is attained when the 3-year average of the 98th and 99th percentile, respectively, of the daily maximum 1-hour average at each monitor within an area does not exceed the standard (effective April 12, 2010). For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 micrograms per cubic meter (µg/m³) is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr.
   Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm (parts per million) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
5. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
6. The California Air Resources Board has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

The Air District maintains ambient air quality monitoring stations throughout the Basin. Air pollutants monitored at each station may differ; thus, data from the closest representative station that monitors each pollutant is used as background concentrations for purposes of impact assessment. The closest ambient air quality monitoring station to the project site is the Clovis-Villa station (Air Quality Station ID 06-019-5001). This station is located approximately 9 miles south of the project sites and measures ozone, PM_{10},

$PM_{2.5}$, NO_2, CO, non-methane hydrocarbons, and speciated-VOCs. The station is constructed to monitor at a neighborhood scale covering an area between 0.5 and 4.0 kilometers in range. Data is collected for the purpose of observing the highest concentration of pollutants in the area (Air District 2020).

SO_2 is recorded at the Fresno–Garland station located approximately 12 miles south of the project sites. The station is constructed to monitor at neighborhood and urban scales covering an area between 0.5 and 50 kilometers in range (Air District 2019).

Ambient concentrations and number of days when the air quality standards were exceeded in the five-year period from 2020~~2013~~ through 2024~~2017~~ are presented in Table 4.3-2, "Ambient Air Quality in the Project Area," and Table 4.3-3, "Number of Days Exceeding Air Quality Standards." As shown in Tables 4.3-2 and 4.3-3, CO, SO_2, and NO_2 levels did not exceed state or federal standards during the five-year period. Ozone levels exceeded the state one-hour and eight-hour standards and the federal eight-hour standard each year of the five-year period. PM_{10} levels exceeded the 24-hour state standard and the annual state standard for each year of the five-year period and ~~the annual state standard for at least two years of the five-year period;~~ the 24-hour federal standard for at least one year of the five-year period ~~was not exceeded~~. $PM_{2.5}$ levels exceeded the federal 24-hour standard for at least four years ~~each year~~ of the five-year period, the annual federal standard for at least two years of the five-year period and the annual state standard for at least one year of the five-year period. ~~and met or exceeded the state and federal annual standards for at least two years of the five-year period.~~

Table 4.3-2
Ambient Air Quality in the Project Area

Concentration Averaging Period	Monitoring Station	Ambient Air Quality Standard	~~2013~~ 2020	~~2014~~ 2021	~~2015~~ 2022	~~2016~~ 2023	~~2017~~ 2024
OZONE							
Max. 1-hr.	Clovis North Villa Ave (Site No. 5001)	0.09 ppm (state)	~~0.123~~ 0.142	~~0.118~~ 0.123	~~0.116~~ 0.109	~~0.113~~ 0.102	~~0.138~~ 0.109
Max. 8-hr.		0.070 ppm (state) 0.075 ppm (federal)	~~0.104~~ 0.108	~~0.103~~ 0.100	~~0.098~~ 0.084	~~0.095~~ 0.083	~~0.100~~ 0.092
NITROGEN DIOXIDE							
Max. 1-hr.	Clovis North Villa Ave (Site No. 5001)	0.18 ppm (state) ~~0.100 ppm (federal)~~	~~0.054~~ 0.060	~~0.059~~ 0.060	~~0.059~~ 0.050	~~0.049~~ 0.050	~~0.0588~~ 0.050
		0.100 ppm (federal)	0.051	0.046	0.043	0.041	0.040
Annual		0.030 ppm (state) ~~0.053 ppm (federal)~~	~~ND~~ 0.009	~~ND~~ 0.007	~~0.010~~ 0.009	~~ND~~ 0.007	~~0.010~~ 0.006
		0.053 ppm (federal)	0.010	0.008	0.009	0.008	0.007

Concentration Averaging Period	Monitoring Station	Ambient Air Quality Standard	~~2013~~ 2020	~~2014~~ 2021	~~2015~~ 2022	~~2016~~ 2023	~~2017~~ 2024
CARBON MONOXIDE							
Max. 1-hr.	Clovis North Villa Ave (Site No. 5001)	20 ppm (state) 35 ppm (fed.)	~~2.4~~ 2.9	~~2.2~~ 1.3	~~1.5~~ 1.3	~~1.6~~ 1.5	~~1.6~~ 1.4
Max. 8-hr.		9.0 ppm (state) 9.0 ppm (federal)	~~1.7~~ 2.6	~~1.4~~ 1.2	~~1.8~~ 1.1	1.3	~~1.2~~ 1.0
RESPIRABLE PARTICULATE MATTER (PM_{10})							
Max. 24-hr.	Clovis North Villa Ave (Site No. 5001)	50 µg/m³ (state)	~~121.9~~ 296.0	~~84.3~~ 208.8	~~101.3~~ 120.0	~~74.9~~ 103.1	~~99.4~~ 119.1
Max. 24-hr.		150 µg/m³ (federal)	~~119.0~~ 180.9	~~82.3~~ 125.0	~~105.3~~ 127.0	~~76.2~~ 104.7	~~103.2~~ 122.7
Annual		20 µg/m³ (state)	~~ND~~ 50.8	~~ND~~ 43.2	~~33.7~~ 36.2	~~32.7~~ 30.5	~~ND~~ 33.3
FINE PARTICULATE MATTER ($PM_{2.5}$)							
Max. 24-hr.	Clovis North Villa Ave (Site No. 5001)	35 µg/m³ (federal)	~~103.4~~ 193.7	~~72.8~~ 104.6	~~80.7~~ 41.9	~~50.4~~ 34.7	~~69.5~~ 51.3
Annual		12 µg/m³ (state)	~~ND~~ 18.4	ND	~~13.0~~ 10.5	~~11.6~~ 8.5	~~13.6~~ 10.5
Annual		15 µg/m³ (federal)	~~15.9~~ 18.4	~~16.6~~ 15.1	~~15.0~~ 10.5	~~12.5~~ 8.5	~~13.7~~ 10.6
SULFUR DIOXIDE							
Max. 1-hr.	Fresno-Garland (Site No. 11)	0.075 ppm (federal) 0.25 ppm (state)	~~0.006~~ 0.016	~~0.007~~ 0.008	~~0.011~~ 0.003	~~0.008~~ 0.005	~~0.008~~ 0.011
Max. 24-hr.		0.04 ppm (state) 0.14 ppm (federal)	~~0.003~~ 0.002	0.003	~~0.002~~ 0.001	0.002	0.002

Table Source: Sespe ~~2019~~2026.
Table Notes: Max. = maximum; ppm = parts per million; µg/m³ = micrograms per cubic meter; ND—insufficient data available to determine.

Table 4.3-3
Number of Days Exceeding Air Quality Standards

Monitoring Site	Year	Days Exceeding State 1-Hour O_3	Days Exceeding State 8-Hour O_3	Days Exceeding Federal 8-Hour O_3	Days Exceeding State 24-Hour PM_{10}[1]	Days Exceeding Federal 24-Hour $PM_{2.5}$[1]
Clovis North Villa Ave.	2020 ~~2013~~	12 ~~13~~	41 ~~66~~	36 ~~38~~	117.5 ~~ND~~	40 ~~25.1~~
	2021 ~~2014~~	9 ~~26~~	37 ~~84~~	34 ~~56~~	112.4 ~~ND~~	22 ~~40.4~~
	2022 ~~2015~~	3 ~~18~~	26 ~~51~~	23 ~~28~~	73.8 ~~50.3~~	4.3 ~~15.4~~
	2023 ~~2016~~	3 ~~26~~	23 ~~63~~	21 ~~46~~	44 ~~61.3~~	0 ~~8.2~~

Monitoring Site	Year	Days Exceeding State 1-Hour O_3	Days Exceeding State 8-Hour O_3	Days Exceeding Federal 8-Hour O_3	Days Exceeding State 24-Hour PM_{10}[1]	Days Exceeding Federal 24-Hour $PM_{2.5}$[1]
	2024 ~~2017~~	16 ~~13~~	51 ~~50~~	45 ~~23~~	66 ~~ND~~	7 ~~25.4~~

Table Source: Sespe ~~2019~~ 2026.
Table Notes: ND—insufficient data available to determine; PM_{10} = particles with an aerodynamic diameter less than or equal to 10 micrometers; $PM_{2.5}$ = particles with an aerodynamic diameter less than or equal to 2.5 micrometers.
1. Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and 3 days, respectively. "Number of days exceeding the standards" are mathematical estimates.

4.3.2 Regulatory Setting

4.3.2.1 Federal

U.S. Environmental Protection Agency

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The U.S. EPA is responsible for implementing most aspects of the Clean Air Act, which include NAAQS for major air pollutants, performance standards for new and modified sources, hazardous air pollutant standards, approval of state attainment plans, motor vehicle emission standards, stationary source emission standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions. NAAQS are established for "criteria pollutants" under the Clean Air Act, which are ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead.

NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. NAAQS (other than for ozone, NO_2, SO_2, PM_{10}, and $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. Ozone, NO_2, SO_2, PM_{10}, and $PM_{2.5}$, are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The Clean Air Act requires EPA to reassess NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed NAAQS must prepare a state implementation plan that demonstrates how those areas will attain the standards within mandated time frames. NAAQS are presented in Table 4.3-1 above.

Standards of Performance for Asphalt Hot-Mix Facilities

Standards of Performance for Asphalt Hot-Mix Facilities (40 CFR, Part 60, Subpart I) prohibits any new hot-mix asphalt facility from discharging gases that contain particulate matter in excess of 90 milligrams per dry standard cubic meter (mg/dscm) (0.04 grain per dry standard cubic foot [gr/dscf]) and/or exhibit 20% opacity or greater. EPA Test Method

5 is used to determine particulate matter concentration and outlines sampling methodology.

Standards of Performance for Nonmetallic Mineral Processing Plants

Standards of Performance for Nonmetallic Mineral Processing Plants (40 CFR, Part 60, Subpart OOO) is applicable to new, modified, or reconstructed nonmetallic mineral processing facilities (with certain exceptions, such as fixed sand and gravel plants and crushed stone plants with capacities of 25 tons per hour or less, or portable sand and gravel plants and crushed stone plants with capacities of 150 tons per hour or less). Subpart OOO includes different requirements for facilities that commence construction, modification, or reconstruction after August 31, 1983, and after April 22, 2008; the requirements for the latter date are described. Subpart OOO includes particulate matter standards, as well as monitoring, testing, reporting, and recordkeeping requirements. Within 60 days after reaching maximum production rate, but no later than 180 days after initial startup, Subpart OOO restricts emissions from affected facilities equipped with capture systems used to capture and transport particulate matter to a control device. Emissions are prohibited in excess of 0.032 grams per dry standard cubic meter (0.014 grams per dry standard cubic foot), and from exhibiting visible emissions based on quarterly monitoring. Subpart OOO also prohibits the discharge of any fugitive emissions from affected facilities without capture systems and fugitive emissions escaping capture systems that exhibit greater than 7% opacity (12% for crushers without capture systems).

Regulations Affecting New Diesel Engines

EPA regulates emissions from new non-road (i.e., off-road, portable, and stationary) internal combustion engines by tiered standards (e.g., compression-ignition engines in 40 CFR 89.112, 40 CFR 1039.101, and 40 CFR 1039.102). Emissions from new on-road engines are regulated using standards that apply by model year, class of vehicle, and fuel type (e.g., heavy-heavy duty diesel engines in 40 CFR 86.004-11, 40 CFR 86.007-11, and 40 CFR 86.099-11). These regulations affect manufacturers but are relevant to the proposed project because diesel engines are the primary source of proposed project combustion emissions.

4.3.2.2 State

California Air Resources Board

The Clean Air Act delegates the regulation of air pollution control and the enforcement of NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to the ARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county

levels. The ARB is responsible for ensuring implementation of the California Clean Air Act and the federal Clean Air Act and regulating emissions from motor vehicles, mobile equipment, and consumer products. The ARB also sets health-based air quality standards and control measures for toxic air contaminants. The ARB has established CAAQS, which are generally more restrictive than NAAQS. CAAQS describes adverse conditions (i.e., pollution levels must be below these standards before a basin can attain the standard). CAAQS for ozone, CO, SO_2 (1 hour and 24 hours), NO_2, PM_{10}, and $PM_{2.5}$ and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. NAAQS and CAAQS are presented in Table 4.3-1 above.

Toxic Air Contaminant Identification and Control Act

California's comprehensive air toxics program was established in the early 1980s. The Toxic Air Contaminant Identification and Control Act (AB 1807, 1983) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987) requires a Statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

Under AB 1807, the ARB is required to use certain criteria when prioritizing pollutants for control of air toxics. In selecting substances for review, the ARB must consider criteria relating to "the risk of harm to public health, amount or potential amount of emissions, manner of, and exposure to, usage of the substance in California, persistence in the atmosphere, and ambient concentrations in the community." AB 1807 also requires the ARB to use available information gathered from the AB 2588 program to include in the prioritization of compounds. The list of toxic air contaminants includes all Federal hazardous air pollutants plus the following pollutants: 1,2-dibromoethane, 1,2-dichloroethane, hexavalent chromium, cadmium, inorganic arsenic, nickel, inorganic lead, diesel particulate matter, and environmental tobacco smoke (17 CCR Section 93000 and Section 93001).

Under AB 2588, industrial facilities are required to report air toxic emissions, ascertain health risks and notify nearby residents of significant risks. In September 1992, the Hot Spots Act was amended by Senate Bill 1731, which required facilities that pose a significant health risk to reduce their risk through a risk management plan. The emissions inventory and risk assessment methodologies from the AB 2588 Program are used in the Air Quality Assessment (Appendix D-1 as updated in Appendix D-3) as discussed below in Section 4.3.3.3, "Analysis Methodology."

Idling of Commercial Heavy-Duty Trucks

In January 2005, the ARB adopted an Airborne Toxic Control Measure (ATCM) to control emissions from idling trucks. The ATCM, which became effective February 1, 2005,

prohibits idling for more than 5 minutes for all diesel-fueled commercial motor vehicles with a gross vehicular weight ratings over 10,000 pounds that are or must be licensed for operation on highways. The ATCM contains several exceptions that allow trucks to idle during the following periods: due to traffic conditions, for vehicle inspections, and when queueing. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling (ARB 2020).

In-Use Off-Road Diesel-Fueled Fleets

In July 2007, the ARB adopted the Regulation for In-Use Off-Road Diesel-Fueled Fleets (Off-Road Diesel Regulation) to reduce particulate matter and NO_X emissions from existing off-road heavy-duty diesel vehicles in California. This regulation requires that specific fleet average requirements are met for NO_X emissions and for particulate matter emissions. Where average requirements cannot be met, Best Available Control Technology (BACT) requirements apply. All self-propelled off-road diesel vehicles 25 horsepower (hp) or greater used in California and most two-engine vehicles (except on-road two-engine sweepers) are subject to the Off-Road Diesel Regulation. This includes vehicles that are rented or leased (rental or leased fleets).

The Off-Road Diesel Regulation:

- requires all vehicles be reported to the ARB and labeled,
- restricts the adding of older vehicles into fleets starting on January 1, 2014,
- requires fleet owners to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (VDECS) i.e., exhaust retrofits,
- imposes limits on idling and requires a written idling policy, and
- requires a disclosure when selling vehicles.

All fleets must meet emission performance and reporting requirements by January 1, 2028. Annual reporting requirements, including the Responsible Official Affirmation of Reporting form, must be completed by March 1, 2028. Large fleets must report annually from 2012 to 2023, medium fleets from 2016 to 2023, and small fleets from 2018 to 2028. For each annual reporting date, a fleet must report any changes to the fleet, hour meter readings (for low-use vehicles and vehicles used a majority of the time, but not solely, for agricultural operations), and also must submit the Responsible Official Affirmation of Reporting (ROAR) form. Following January 1, 2023, small fleets may no longer add a vehicle with a Tier 2 engine to its fleet. The engine tier must be Tier 3 or higher. Medium and large fleets may not add tier 2 engines as of January 1, 2018. The goal of the In-Use

Off-Road Diesel-Fueled Fleets Regulation is to reduce particulate matter and NO_x emissions from in-use (existing) off-road heavy-duty diesel vehicles in California (ARB 2020).

In-Use On-Road Diesel-Fueled Vehicles

On December 12, 2008, the ARB adopted an ATCM to reduce NO_x and particulate matter emissions from most in-use on-road diesel trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. This regulation affects individuals, private companies, and Federal agencies that own diesel vehicles with a Gross Vehicle Weight Rating (GVWR) greater than 14,000 lbs. that operate in California. The regulation also applies to publicly and privately owned school buses; however, their compliance requirements are different, and reporting is not required. The regulation does not apply to state and local government vehicles and public transit buses because they are already subject to other regulations. Vehicles that are exempt from other heavy duty diesel regulations, such as Cargo Handling Equipment, Drayage Truck, and Solid Waste Collection Vehicle regulations, may be subject to the Truck and Bus Regulation (regulation). Drayage and solid waste collection trucks with 2007 to 2009 model year engines must meet the requirements of the regulation by January 1, 2023.

Heavier trucks and buses with a GVWR greater than 26,000 pounds must comply with a schedule by engine model year or owners can report to show compliance with more flexible options. All heavier vehicles with 1996 or newer model year engines should have a particulate matter filter (OEM or retrofit). By January 1, 2023, all trucks and buses must have 2010 model year engines with few exceptions.

Lighter trucks and buses with a GVWR of 14,001 to 26,000 lbs. have replacement requirements starting January 1, 2015. The Engine Model Year Schedule for Lighter vehicles shown in the table to the right lists the compliance dates by engine model year for existing lighter trucks. Starting January 1, 2015, lighter vehicles with engines that are 20 years or older must be replaced with newer trucks (or engines). Starting January 1, 2020, all remaining vehicles need to be replaced so that they all have 2010 model year engines or equivalent emissions by January 1, 2023 (California Air Resources Board 2020).

4.3.2.3 Local

San Joaquin Valley Air Pollution Control District

The 1976 Lewis Presley Air Quality Management Act established the San Joaquin Valley Air Pollution Control District and other air districts throughout the state. The Federal Clean Air Act Amendments of 1977 required that each state adopt an implementation

plan outlining pollution control measures to attain the Federal standards in nonattainment areas of the state.

The ARB coordinates and oversees both state and federal air pollution control programs in California. The ARB oversees activities of local air districts and is responsible for incorporating air quality management plans developed by each air district into the State Implementation Plan (SIP) for Federal EPA approval. The ARB maintains air quality monitoring stations throughout the state in conjunction with local air districts. Data collected at these stations are used by the ARB and EPA to classify areas as "attainment" or "nonattainment" with respect to each pollutant and to monitor progress towards attaining air quality standards. ARB has divided the state into 15 air basins. Significant authority for air quality control is delegated to local air districts that regulate emissions from stationary sources and develop attainment plans. In addition, the California Clean Air Act provides the local air districts with the authority to manage transportation activities and regulate stationary source emissions. Indirect sources of pollution are those sources related to a stationary facility or development project but otherwise outside air district authority to regulate. An example of this would be the motor vehicles at an intersection, a mall, and on highways. As a state agency, the ARB regulates motor vehicles and fuels for their emissions.

The Air District and Fresno Council of Governments are responsible for formulating and implementing the air quality and transportation plans for the Fresno County area of the Basin. The Air District has adopted several attainment plans to achieve state and federal air quality standards. The Air District continuously monitors the region's progress implementing attainment plans and periodically reports to the ARB and the EPA. Finally, the Air District periodically revises attainment plans to reflect new conditions and requirements in accordance with schedules mandated by the California Clean Air Act and associated amendments.

Attainment Plans

Attainment plans relevant to the proposed project are summarized below.

Ozone Attainment Plans:

- **2004 Extreme 1-Hour Ozone Attainment Demonstration Plan**. This Plan, adopted by the Air District in 2004, sets forth measures and emission reduction strategies designed to attain the Federal 1-hour ozone standard by November 15, 2010. This Plan was approved by the EPA on March 8, 2010; however, the EPA's approval was subsequently withdrawn effective November 26, 2012, in response to a decision issued by the U.S. Court of Appeals for the Ninth Circuit (Sierra Club v. U.S. E.P.A., (9th Cir. 2012) 671

F.3d 955) remanding EPA's approval of these State Implementation Plan revisions. Concurrent with EPA's final rule, the ARB is withdrawing the Plan. On May 6, 2014, the Air District submitted a formal request to the U.S. EPA, asking that the EPA determine the Basin has attained the Federal 1-hour ozone standard which was revoked in 1997.

- **2007 8-Hour Ozone Plan**. This Plan sets forth measures and a "dual path" strategy to attain the Federal 8-hour ozone standard in the Basin by reducing emissions of ozone and particulate matter precursors. The Plan includes provisions that improve pollution control technologies for mobile and stationary sources, and Federal funding for incentive- based measures that reduce emissions. Local measures were to be adopted by the Air District before 2012. This Plan was approved by the EPA on March 1, 2012. On November 26, 2012, however, the EPA withdrew its determination that the Plan satisfied the Clean Air Act requirements due to emission growth caused by growth in vehicle-miles traveled (VMT). Other determinations in the EPA's March 1, 2012, rule approving the Plan remain unchanged and in effect.
- **2016 Ozone Plan for 2008.** 8 Hour Ozone Standard. In order to meet the December 31, 2031, deadline for attainment, this plan incorporates emissions reduction strategies for stationary sources including regulatory actions; incentive programs; technology advancement programs; policy and legislative activities; public outreach, education, and communication; and undefined strategies under "black box" provisions. The Plan demonstrates that existing regulations go above and beyond the Federal Reasonably Available Control Technology (RACT) requirement. The Plan also emphasizes that mobile source emissions, which fall under state and federal jurisdiction, make up over 85% of the Valley's NO_x emissions. For this reason, the District request that the ARB and EPA adopt and implement strategies so that sources outside District authority would be controlled enabling the standard to be met without the need for "black box" provisions. Moreover, the plan states that the ARB and EPA action will be essential to attain the state and federal air quality standards.
- **2022 Plan for the 2015 8-Hour Ozone Standard.** The 2022 Ozone Plan for the San Joaquin Valley establishes a comprehensive strategy to attain the Federal 2015 8-hour ozone standard of 70 ppb by the 2037 deadline. Developed using advanced air quality modeling and the best available science, the plan builds on decades of emission reduction efforts by the San Joaquin Valley Air Pollution Control District and ARB. It demonstrates that a 72% reduction in NOx emissions by 2037 will ensure expeditious

attainment of 2015 8-hour ozone standard. The plan integrates regulatory development, outreach, research, and incentive programs.

Particulate Matter Attainment Plans:

- **2007 PM_{10} Maintenance Plan.** On October 25, 2007, the ARB approved the 2007 PM_{10} Maintenance Plan and Request for Re-designation with modifications to the transportation conformity budgets. On September 25, 2008, the EPA approved the PM_{10} maintenance plan.
- **2008 $PM_{2.5}$ Plan**. The EPA set the first $PM_{2.5}$ standard in 1997 and in 2005 designated the Valley as nonattainment for the 1997 standard. The 1997 standard has two metrics for attainment: an annual average of 15 $\mu g/m^3$ and a 24- hour average of 65 $\mu g/m^3$. The Air District adopted the 2008 $PM_{2.5}$ Plan in April 2008 to demonstrate how the Valley would come into attainment of the 1997 $PM_{2.5}$ standard by no later than April 2015. EPA subsequently lowered the 24-hour standard to 35 $\mu g/m^3$ in 2006 and re-issued the nonattainment designation for the Valley in 2009.

  The 2008 Plan is designed to assist the Basin in attaining each $PM_{2.5}$ standard, including the ones adopted by EPA in 1997 and 2006, and the state standard. On July 13, 2011, the EPA issued a proposed rule partially approving and disapproving the 2008 $PM_{2.5}$ Plan. Subsequently, on November 9, 2011, the EPA issued a final rule approving most of the Plan with an effective date of January 9, 2012. However, the EPA disapproved the plan's contingency measures because they would not provide sufficient emission reductions.
- **2012 $PM_{2.5}$ Plan**. The 2012 $PM_{2.5}$ Plan builds on the prior $PM_{2.5}$ plans and demonstrates attainment of the newer 2006 24-hour $PM_{2.5}$ standard by the Federal attainment deadline of 2019, with the majority of the Valley actually experiencing attainment before 2019. Using the Air District Governing Board's guiding principles adopted in February 2012, this plan emphasizes public health as the number one priority in meeting NAAQS.

  The 2012 $PM_{2.5}$ Plan is a multifaceted strategy that utilizes a combination of conventional and innovative control strategies to reduce emissions of $PM_{2.5}$ and other pollutants that form $PM_{2.5}$. The Air District's successes in adopting regulations and other strategies that have improved air quality provide the foundation for the Plan. In developing the Plan, the Air District claims to have left "no stone unturned" in evaluating potential strategies to reduce emissions.

In addition to reducing direct emissions of $PM_{2.5}$, the 2012 $PM_{2.5}$ Plan focuses on reducing oxides of nitrogen (NO_x) emissions, which is a predominant pollutant not only in the formation of $PM_{2.5}$ but also ozone. This overlapping effect and emphasis on reducing NO_x emissions addresses the area's primary air quality challenges, $PM_{2.5}$ and ozone. Along with comprehensive efforts at the local level to reduce emissions, reducing mobile source emissions that are not under the direct authority of the Air District are critical to attaining the standard. The 2012 $PM_{2.5}$ Plan includes state and federal measures that will provide significant new emissions reductions in the coming years. As outlined below, the Plan's comprehensive control strategy includes regulatory actions, incentive programs, technology advancement, policy and legislative positions, public outreach, participation and communication, and additional strategies.

- **2015 Plan for the 1997 $PM_{2.5}$ Standard**. The 2015 Plan for the 1997 $PM_{2.5}$ Standard was adopted on April 16, 2015, and addresses the EPA annual $PM_{2.5}$ standard of 15 μg/m3 as well as the EPA 24-hour $PM_{2.5}$ standard of 65 μg/m3 both of which were established in 1997. The plan's strategy focuses on attaining the standard quickly, as well as prioritizing $PM_{2.5}$ emissions that pose the most health risk to residents.
- **2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard**. The 2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard was adopted by the District on September 15, 2016. This Plan addresses the $PM_{2.5}$ NAAQS of 12 μg/m3 with an attainment deadline of December 31, 2021, established in 2012. This Plan demonstrates the impracticability of attainment before the deadline and requests the area be reclassified from moderate to serious nonattainment.
- **2018 Plan for the 1997, 2006 and 2012 $PM_{2.5}$ Standards**. Adopted on November 15, 2018, the plan includes significant incentive based control measures as well as control measures for stationary and area industrial sources. The plan also calls on the ARB to act in order to achieve reductions of mobile sources.
- **SB 656 Particulate Matter Control Measure Implementation Schedule**. Senate Bill (SB) 656 was enacted in 2003 and codified as Health and Safety Code Section 39614. SB 656 seeks to reduce exposure to PM_{10} and $PM_{2.5}$ and make further progress toward attainment of the NAAQS and CAAQS for PM_{10} and $PM_{2.5}$. SB 656 required the California Air Resources Board, in consultation with local air districts, to develop and adopt lists of "the most readily available, feasible, and cost-effective" particulate matter control measures. Subsequently, air districts were required to adopt

implementation schedules for relevant control measures. In June 2005, The Air District adopted its SB 656 Particulate Matter Control Measure Implementation Schedule and has adopted each relevant strategy into their rules.

- **2024 Plan for the 2012 Annual PM2.5 Standard.** The 2024 Plan for the 2012 $PM_{2.5}$ Standard was adopted to address the annual $PM_{2.5}$ NAAQS of 12 $\mu g/m^3$ established in 2012. The plan outlines BACM and BACT measures, incentive programs, and requests an attainment deadline extension due to the impracticability of meeting the standard on time. It emphasizes continued collaboration with ARB and the EPA to reduce emissions from sources beyond District authority.

Rules and Regulations

The Air District establishes and administers a program of rules and regulations to attain and maintain state and national air quality standards and regulations related to toxic air contaminants. Rules and regulations that may apply to the proposed project during construction and/or operations include the following:

- **Regulation I (General Provisions)**
  - **Rule 1160 (Emission Statements)**

    Rule 1160 requires owners/operators of stationary sources that emit NO_x or ROG to submit annual emission inventories. More information can be found in the Air Resources Board's "Instructions for the Emission Data System Review and Update Report" document.
- **Regulation II (Permits)**
  - **Rule 2010 (Permits Required)**

    Rule 2010 requires newly proposed non-exempt sources of emissions to obtain an Authority to Construct prior to construction. Prior to operation of the new source, the Air District also requires that a Permit to Operate be obtained. Permits to Operate must be posted and maintained on or near the source of the air pollution.
  - **Rule 2201 (New and Modified Stationary Source Review)**

    Rule 2201, last amended April 2023, establishes Air District's program to limit emissions at new and modified sources so that there is no net increase in emissions within the Basin. Rule 2201 uses BACT and mechanisms such as emissions offsets, to ensure that AAQS are met or maintained. Criteria pollutants are regulated under this rule, including VOC, NO_x, SO_x, PM_{10}, $PM_{2.5}$, and CO. Under Rule 2201, BACT is required if the emissions of a

regulated pollutant would exceed two (2) pounds per day. In addition, emission offsets to mitigate an increase in emissions from a new or modified stationary source would be required if the facility's emissions exceed the following amounts:

- 20,000 pounds per year of NO_x or VOC;
- 200,000 pounds per year of CO;
- 54,750 pounds per year of SO_x; or
- 29,200 pounds per year of PM_{10}.

– **Rule 2280 (Portable Equipment Registration)**

Rule 2280 outlines the procedure and requirements associated with the registration of portable emissions units. Sand and gravel screening, rock crushing, and RAP crushing operations are among operations eligible for registration of portable equipment, if a portable diesel-fired engine will be used to power processing equipment. Rule 2280 would be applicable to the project if temporary construction requires equipment (such as a generator set) under Rule 2280.

– **Rule 2530 (Federally Enforceable Potential to Emit)**

The purpose of Rule 2530, last amended in June 2024, is to restrict a facility's potential to emit so that the facility may be exempt from the requirements of Rule 2520 (Federally Mandated Operating Permits). This Rule applies to the following sources:

- Major air toxics sources;
- Any stationary source that emits or has the potential to emit 100 tons per year of any air contaminant;
- Any major source;
- Any emissions unit;
- Any emissions unit, including an area source, subject to a standard or other requirement promulgated pursuant to Section 111 (NSPS) or 112 (HAPs) of the CAA published after July 21, 1992;
- Any source required to have a preconstruction review permit pursuant to the requirements of the prevention of significant deterioration (PSD) program under Title I of the Federal Clean Air act; and,
- Any source in a source category designated, pursuant to 40 CFR Part 70.3, by rule of the EPA

Rule 2530 also includes recordkeeping and reporting requirements. Rule 2530 allows facilities to be excluded from the Title V program (see Rule 2520) by taking limits or keeping records to demonstrate that their emissions are below the applicable thresholds. This process is also referred to as a "synthetic minor" or Federally Enforceable State Operating Permit (FESOP).

- **Regulation III (Fees)**

  Regulation III contains rules related to District fees. The project may be subject to fees related to permitting, air toxics, dust, ozone, as well as others.

- **Regulation IV (Prohibitions)**
  - **Rule 4001 (New Source Performance Standards)**

    Rule 4001 codifies the Air District's adoption and incorporation of Federal New Source Performance Standards (NSPS) as set forth in 40 CFR Part 60. NSPS apply to a variety of stationary sources, including asphalt plants and aggregate processing plants. The regulation imposes emissions standards for relevant pollutants and requires that specified emission performance standards, control equipment, and monitoring devices be installed at all new, modified, or reconstructed facilities to limit emissions. The regulation includes test methods, monitoring, notification, and recordkeeping requirements. The asphalt plant and aggregate plant are subject to 40 CFR Part 60, Subparts I and OOO, respectively; those regulations are discussed in previous sections.

  - **Rule 4101 (Visible Emissions)**

    Rule 4101 prohibits emissions of visible air contaminants, other than water vapor, from resulting in greater than Number 1 on Ringelmann Chart (i.e., 20% opacity) for a combined period of more than 3 minutes in any hour.

  - **Rule 4102 (Nuisance)**

    To protect public health, Rule 4102 prohibits any person from discharging such quantities of air contaminants that cause injury, detriment, nuisance, or annoyance to a considerable number of persons or to the public.

  - **Rule 4201 (Particulate Matter Concentration)**

    Rule 4201 establishes a particulate matter concentration standard governing release or discharge of dust, fumes, or total suspended particulate matter emissions into the atmosphere from any single-source operation exceeding 0.1 grains/dry standard cubic foot of gas (gr/dscf).

- **Rule 4202 (Particulate Matter Emission Rate)**

  Rule 4202 limits the weight rate of particulate matter emissions. The Rule specifies allowable emissions rates based on a process weight rate equation and calculations for various rates in an associated table within the rule.

- **Rule 4301 (Fuel Burning Equipment)**

  Rule 4301 limits the emission of air contaminants from fuel burning equipment. Included in this rule are requirements that fuel burning equipment not discharge:

  - combustion contaminants exceeding 0.1 gr/dscf at 12% carbon dioxide;
  - Discharge greater than 200 lbs. per hour of sulfur compounds;
  - Discharge greater than 140 pounds per hour of nitrogen compounds; or,
  - Discharge greater than 10 pounds per hour of combustion contaminants.

- **Rule 4307 (Boilers, Steam Generators, and Process Heaters)**

  Rule 4307 establishes NO_x and CO emissions limits for boilers, steam generators, and process heaters. This rule applies to units fired on gaseous or liquid fuel, having heat input of between 2.0 and 5.0 million British thermal units per hour (MMBtu/hr) or greater. The applicable limits for new units are 9 ppmv NO_x at 3% oxygen and 400 ppmv CO at 3% oxygen. The rule includes monitoring and recordkeeping requirements. Compliance with the emission limits must be determined by periodic source testing. This rule applies to the hot oil heater in the asphalt plant.

- **Rule 4309 (Dryers, Dehydrators, and Ovens)**

  Rule 4309 establishes NO_x and CO emissions limits for dryers, dehydrators, and ovens. This Rule applies to units fired on gaseous or liquid fuel, having a total rated heat input of 5.0 MMBtu/hr. or greater. The applicable limits for burners at asphalt plants are 4.3 ppmv NO_x at 19% oxygen and 42 ppmv CO at 19% oxygen when fired on gaseous fuel. The Rule includes monitoring and recordkeeping requirements.

  Compliance with the emission limits must be determined by periodic source testing or an approved alternate emissions monitoring system.

- **Regulation VIII (Fugitive PM_{10} Prohibitions)**

  The rules under Regulation VIII are intended to reduce ambient concentrations of particulate matter (PM_{10} or larger) and were developed pursuant to EPA guidance for Serious PM_{10} Nonattainment Areas. These rules are applicable to

specified anthropogenic sources. Applicability of each rule is discussed below, and requirements are presented for rules that apply to the project. Rule 8081 is omitted because it only applies to agricultural sources.

- **Rule 8021 (Construction, Demolition Excavation, Extraction, and Other Earthmoving Activities)**

  Rule 8021 prohibits construction, demolition, excavation, extraction, or other earthmoving activities unless the appropriate requirements are sufficiently implemented to limit visible dust emissions (VDE) to 20% opacity. Blasting emissions are exempt from this rule.

- **Rule 8031 (Bulk Materials)**

  Rule 8031 requires facilities that perform outdoor handling, storage, and transport of bulk materials to use prescribed methods to limit VDE to 20% opacity or to comply with the conditions for a stabilized surface as defined in Rule 8011 (General Requirements). Methods to limit VDE listed in Rule 8031 include:

  - Applying water or chemical/organic stabilizers/suppressants;
  - Constructing and maintaining sufficient barriers to obstruct wind;
  - Maintaining stabilized surfaces on piles; covering bulk materials with tarps, plastic, or other suitable material; limiting on-site vehicle speed;
  - Loading haul trucks to limit VDE;
  - Applying water on the top of loads to limit VDE;
  - covering haul trucks with tarps or other covers to limit VDE; and
  - Maintaining haul trucks to prevent spillage or loss of bulk materials.

- **Rule 8041 (Carryout and Trackout)**

  The purpose of Rule 8041 is to prevent or limit fugitive dust emissions from carryout and trackout on paved public roads or the paved shoulders of paved public roads. Facilities subject to Rules 8021, 8031, 8061, or 8071 must also comply with this rule. Rule 8041 requires that affected facilities prevent and/or clean up carryout and trackout at the end of each workday. Cleanup of carryout and trackout is accomplished by manually sweeping and picking up, operating a rotary brush or broom accompanied by sufficient wetting to limit VDE to 20% opacity, operating a PM_{10}-efficient street sweeper that has a pick- up efficiency of at least 80%, or flushing with water if curbs and gutters are not present and where the use of water will not result in a source of trackout material or other adverse impacts, such as a water quality violation under the National Pollutant Discharge Elimination

System program. Rule 8041 requires that owners/operators of sites with paved interior roads use a trackout control device to reduce carryout and trackout. Rule 8041 prohibits the use of blower devices, dry rotary brushes, or brooms for removal of carryout and trackout on public roads.

- **Rule 8051 (Open Areas)**

  The purpose of Rule 8051 is to limit fugitive dust emissions from open areas. The rule applies to open areas 0.5 acre or more within urban areas, and 3.0 acres or more within rural areas, that contain at least 1,000 square feet of disturbed surface area. Whenever open areas are disturbed or vehicles are used in open areas, control measures are required to comply with the conditions of a stabilized surface and to limit VDE to 20% opacity. Control measures to be used include: applying and maintaining water or other chemical dust suppressants to unvegetated areas; establishing vegetation on previously disturbed areas; or paving, applying, and maintaining gravel. Where evidence is acquired that open areas are disturbed due to trespassing, such activities should be prevented by posting "No Trespassing" signs or installing physical barriers such as fences.

- **Rule 8061 (Paved and Unpaved Roads)**

  The purpose of Rule 8061 is to limit fugitive dust emissions from paved and unpaved roads by implementing control measures and design criteria. This rule applies to any new or existing public or private paved or unpaved roads, road construction projects, and road modification projects. Rule 8061 requires that new or modified paved roads have certain specifications based on the road's existing or projected annual average daily trips (AADT). Requirements include minimum paved or stabilized shoulder widths, as well as curbing, intersection, and median specifications. The Rule prescribes requirements for maintenance of public paved roads, including specifications for PM_{10}-efficient sweepers and road cleanup. Rule 8061 requires unpaved road segments with 26 or more AADT to stabilize surfaces by application of water, chemical dust suppressant, washed gravel, or similar measures. Unpaved roads with fewer than 26 AADT are exempt from some requirements of this rule.

- **Rule 8071 (Unpaved Vehicle/Equipment Traffic Areas)**

  This rule limits fugitive dust emissions from unpaved vehicle and equipment traffic areas with 50 or more AADT by stabilizing road surfaces with water, chemical dust suppressant, washed gravel, or similar measures.

Unpaved vehicle and equipment traffic areas with less than 50 AADT are exempt from Rule 8071.

Air District CEQA Air Quality Analysis and Modeling Guidance

The Air District has developed CEQA air quality analysis and modelling guidance, but notes that this guidance is dated and may not be the best approach if one is trying to use currently accepted methods such as those employed by OEHHA (Air District 2012). For this reason, the Air Quality Assessment (Appendix D-3 ~~D-1~~) is written based on the Air Toxics Hotspots Program Guidance Manual for the Preparation of Risk Assessments (OEHHA 2015).

Voluntary Emissions Reduction Agreement (VERA) Program

The Air District creates VOC, NO_x, and PM_{10} emissions reductions by providing incentive funding primarily to owners of engines who volunteer to replace older, high polluting engines with lower emitting alternatives (e.g., new engine, electric/battery, etc.). Emissions reductions administered by the Air District satisfy requirements for banking emissions reduction credits under Rule 2301 insofar as the emissions reductions are real, surplus, permanent, quantifiable, and enforceable. Some of the funding for these projects comes from VERAs between the Air District and developers of land use projects that require additional mitigation of these pollutants in order to reduce their project emissions impacts to less than the significance thresholds in the associated CEQA document (e.g., EIR). Section 9.2 in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) (Air District 2015) states:

> *"Design elements, mitigation measures, and compliance with District rules and regulations may not be sufficient to reduce project - related impacts on air quality to a less than significant level. In such situations, project proponents may enter into a Voluntary Emission Reduction Agreement (VERA) with the District to reduce the project related impact on air quality to a less than significant level. A VERA is a mitigation measure by which the project proponent provides pound - for - pound mitigation of air emissions increases through a process that funds and implements emission reduction projects. A VERA can be implemented to address impacts from both construction and operational phases of a project.*
>
> *To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate project specific emissions by providing funds to the District. The District's role is to administer the implementation of the VERA consisting of identifying emissions reductions projects, funding those projects and verifying that emission reductions have been successfully achieved. The VERA implementation process also provides opportunity for the project proponent to identify*

specific emission reduction projects to be administered by the District. The funds are disbursed by the District in the form of grants. Types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy - duty trucks with new, cleaner, more efficient heavy - duty trucks, and replacement of old farm tractors.

The District verifies the actual emission reductions that have been achieved as a result of completed grant contracts, monitors the emission reduction projects, and ensures the enforceability of achieved reductions. The initial agreement is generally based on the projected maximum emissions increases as calculated by a District approved air quality impact assessment, and contains the corresponding fiscal obligation. However, the District has designed flexibility into the VERA such that the final mitigation can be based on actual emissions related to the project as determined by actual equipment used, hours of operation, etc. After the project is mitigated, the District certifies to the Lead Agency that the mitigation is completed, providing the Lead Agency with an enforceable mitigation measure demonstrating that project specific emissions have been mitigated to less than significant. ~~[Underline added].~~

To ensure all feasible mitigation measures are incorporated into the project to reduce project air quality impact to less than significant, the District recommends the project proponent (and/or Lead Agency) engage in discussion with the District to have the VERA adopted by the District prior to the finalization of the environmental document. This process will allow the environmental document to appropriately characterize the project emissions and demonstrate that the project impact on air quality will be mitigated to less than significant under CEQA as a result of the implementation of the adopted VERA.

The District has been developing and implementing VERA contracts with project proponents to mitigate project specific emissions since 2005. It is the District's experience that implementation of a VERA is a feasible mitigation measure, which effectively achieves the emission reductions required by a Lead Agency, including mitigation of project-related impacts on air quality by supplying real and contemporaneous emissions reductions.

Therefore, Lead Agencies should require the project proponent to negotiate a VERA with the District prior to the Lead Agency's final approval of the CEQA document. This allows the Lead Agency to disclose to the public the certainty that the VERA is assuring full mitigation of air quality impacts as specified in the environmental review document or equivalent documentation certified by the Lead Agency. The 2017 Annual Financial Report states:

Under a VERA, two mitigation approaches are available: "pollutant-by-pollutant" and "net zero". The mitigation of project emissions impacts "pollutant-by-pollutant" means that each NO_x, VOC and PM_{10} project emission will be mitigated individually to their respective significance threshold level. The mitigation of project emissions impacts to "net zero" means that the sum of NO_x, VOC and PM_{10} combined project emissions will be fully mitigated by the sum of NO_x, VOC and PM_{10} combined emission reductions achieved under the VERA. The "net zero" concept is limited to the three pollutants NO_x, VOC and PM_{10}, due to their strong interrelatedness. NO_x is the driving pollutant for both the wintertime particulate matter problem and the summertime ozone problem (in combination with VOC). The District considers "net zero" mitigation to result in a less than significant air quality impact for these three pollutants, even if VOC or PM_{10} emissions remain above their individual significance thresholds after mitigation, because this means that the mitigation has achieved excess reductions of NO_x, the critical component to the Valley's air quality issues. [Underline added].

The District strongly recommends the "net-zero" approach. This method results in a significantly larger amount of NO_x reduction, which is the primary driver to the formation of ozone and particulate matter in the Valley."

The 2017 Financial Report describes the amount of funding and emissions reductions that have occurred in the VERA Program and during the last year as follows:

"The District has entered into thirty-two VERAs since 2005. One hundred percent (100%) of all off-site mitigation fees are used by the District to fund emission reduction projects through its Incentives Programs, achieving emission reductions on behalf of the project. Additionally, developers pay an administrative fee equal to four percent (4%) of the required off-site fees. This fee is to cover the District's cost of administering the off-site emission reduction projects.

To date, in addition to avoiding approximately 12,500 tons of NO_x and PM_{10} emissions from new development through the incorporation of on-site mitigation and clean-air design measures into projects subject to Rule 9510, the District has confirmed approximately 6,900 tons of reductions in NO_x and PM_{10} emissions have been achieved through the investment of ISR and VERA funds in its emission reduction incentive programs.

This year the District achieved emission reductions totaling 501 tons NO_x and 102 tons PM_{10}, for a combined total of 603 tons at a cost effectiveness of $ 8,123 per ton of emissions reduced."

Based on language in recent Governing Board approved VERAs, an applicant can propose to pre-pay for potential excess emissions of NO_x, VOC, and/or PM_{10} (i.e., "criteria pollutants") should emissions from permit-exempt, mobile sources be found to be significant even with the implementation of all feasible mitigation measures. Similarly, permitted, stationary sources would purchase emissions credits if they exceed applicable significance thresholds except that the emissions reductions would need to have been banked by another facility and issued certificates by the Air District as emissions reduction credits under the Air ~~District~~ District's stationary source permitting program.

Applicants that enter a VERA may pay up-front for potential excess emissions predicted for the entire project; or for shorter periods called "project phases." Project phases as short as three months or long as one year have been allowed in VERAs with the choice of duration left to the Applicant's discretion. Project phases in context of a VERA are periods for which emissions are pre-paid and after which the actual excess emissions above the significance thresholds may be calculated by the Applicant and reconciled with the amount of emissions reductions achieved by the District with Applicant funds. If actual emissions during a project phase were less than the significance thresholds in the environmental document, then the emissions reductions purchased would roll-over to serve as a pre-payment for a future project phase. If actual emissions exceed one or more significance thresholds, then pre-paid emissions reductions equal to the actual excess project emissions for each pollutant would be deducted from the amount of emissions reductions achieved by the District. The remaining reductions achieved by the District after subtracting the actual excess emissions above the significance threshold would then roll-over to a future project phase. Alternatively, the Applicant may transfer emissions reductions to another project within the District that requires mitigation of emissions impacts under CEQA.

Fresno County General Plan

The *Fresno County General Plan* (Fresno County 2024) Open Space and Conservation Element includes the following policies related to air quality that apply to the proposed project:

Open Space and Conservation Element

Section G. Air Quality

Goal OS-G: To improve air quality and minimize the adverse effects of air pollution in Fresno County.

Policy OS-G.2: The County shall ensure that air quality impacts identified during the CEQA review process are fairly and consistently mitigated. The

County shall require projects to comply with the County's adopted air quality impact assessment and mitigation procedures.

Policy OS-G.11: The County shall continue, through its land use planning processes, to avoid inappropriate location of residential uses and sensitive receptors in relation to uses that include, but are not limited to, industrial and manufacturing uses and any other uses which have the potential for creating a hazardous or nuisance effect.

Policy OS-G.14: The County shall include fugitive dust control measures as a requirement for subdivision maps, site plans, and grading permits. This will assist in implementing the SJVAPCD's particulate matter of less than ten (10) microns (PM_{10}) regulation (Regulation VIII). Enforcement actions can be coordinated with the Air District's Compliance Division.

Policy OS-G.15: The County shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.

Fresno County Ordinance Code

The Fresno County Ordinance Code has the following regulations related to air quality that apply to the proposed project:

Title 15—Building and Construction

Chapter 15.04—General Provisions

15.04.120—Public Nuisance in Construction and Demolition

Any person to whom a permit has been issued as provided herein for the repair, alteration, demolition or construction of any structure shall comply with each of the following:

A. Take reasonable precaution to prevent or control the movement of wind born dust created by such activities;

B. Promptly remove all dust and mud tracked into a public street by the movement of vehicles, equipment, materials and personnel;

Zoning Ordinance of Fresno County—Land Use and Planning

The Zoning Ordinance of Fresno County – Land Use and Planning, last amended ~~June 2018~~March 2026, has policies and ordinances related to air quality. Specifically, ~~Section 858, "Regulations for Surface Mining and Reclamation in All Districts,"~~

Section 834.4.220, "Mineral Extraction Sites," contains the following countywide development standards:

~~**Section 858—Regulations for Surface Mining and Reclamation in All Districts**~~
Section 834.4.220—Mineral Extraction Sites

~~**H. Mining and Reclamation Standards**~~
I. Mining and Reclamation Standards

8. All interior roads within the site shall be maintained so as to control the creation of dust.

14. Stockpiles of overburden and minerals shall be managed to minimize water and wind erosion.

20. Good operating practices shall at all times be utilized to minimize noise, vibration, dust and unsightliness…

Surface mining operators are required to forward an annual surface mining report to the Department of Conservation (DOC) and to the County Department of Public Works and Development Services. The County is required to conduct or cause an inspection of the surface mining operation within six months of receipt of the operator's annual report to determine whether the surface mining operation is in compliance with the approved conditional use permit, approved mining and reclamation plan, approved financial assurances, and state regulations pertaining to mining. The County must submit the completed inspection form to the DOC within 30 days along with statements on compliance with SMARA, any inconsistencies with SMARA, and any pending action on the mine and reclamation plan, amendments, or financial assurances. It should be noted that the time frames specified in the County's ordinance have been superseded by statutory amendments to SMARA, effective January 2018. The County will implement that currently applicable requirements associated with state review of SMARA-related documents.

4.3.3 Significance Thresholds and Analysis Methodology

4.3.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact on air quality if it would:

a) conflict with or obstruct implementation of the applicable air quality plan;
b) result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard;

c) expose sensitive receptors to substantial pollutant concentrations; or

d) result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

4.3.3.2 Significance Thresholds

The Appendix G significance criteria are qualitative criteria. The Air District has established quantitative thresholds to facilitate the evaluation of the significance criteria. These thresholds are summarized in the following tables:

- Table 4.3-4, "Air Quality Significance Thresholds—Criteria Pollutants,"
- Table 4.3-5, "Air Quality Significance Thresholds—Toxic Air Contaminants and Odor,"
- Table 4.3-6, "Ambient Air Quality Standards," and
- Table 4.3-7, "Significant Impact Level Threshold Values."

Table 4.3-4
Air Quality Significance Thresholds—Criteria Pollutants

Criteria Pollutants			
Pollutant	***Construction Phase (ton/year)***	***Operation Phase Permit-Required (Stationary) Sources (ton/year)***	***Operation Phase Permit-Exempt (Mobile) Sources (ton/year)***
CO	100	100	100
NO_X	10	10	10
ROG	10	10	10
SO_x	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

Table Sources: Air District 2015a.
Table Notes: As indicated in the *Guidance for Assessing and Mitigating Air Quality Impacts* (Air District 2015b), "permit-required" sources are stationary sources (e.g., processing plant, hot-mix asphalt plant, ready-mix concrete plant, recycling plant), and "permit-exempt" sources are mobile sources (e.g., haul trucks, excavators).
CO = carbon monoxide; NO_x = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Table 4.3-5
Air Quality Significance Thresholds—Toxic Air Contaminants and Odor

Recommended Toxic Air Contaminants and Odor Thresholds	
Toxic Air Contaminants (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 20 in 1 million Chronic & Acute Hazard Index ≥ 1.0 (project increment)
Odor	More than one confirmed complaint per year averaged over a three-year period, or three unconfirmed complaints per year averaged over a three-year period. (Screening distance is one mile for asphalt batch plants)

Table Sources: Air District ~~ND1~~ SJVAPCD Air Quality Thresholds of Significance-Toxic Air Contaminants and ~~ND2~~. SJVAPCD "Guidance for Assessing and Mitigating Air Quality Impacts". (SJVAPCD, 2015)

Table 4.3-6
Ambient Air Quality Standards

Ambient Air Quality Standards	
Screening Criteria	100 lb/day of any criteria pollutant after implementation of mitigation measures.
Modeling Criteria	If modeling is required because emissions exceed the screening criteria (100 lb/day), then the project would have a significant impact on an ambient air quality standard if the project concentration plus background concentration measured at the closest air monitoring station exceeds the most stringent state or federal ambient air quality standards (see Table 4.3-1, above) or Significant Impact Level (see Table 4.3-7, below) in cases where background concentration already exceeds or nearly exceeds the ambient air quality standards.

Table Sources: Air District 2015b.
Table Notes: lb/day = pounds per day

Table 4.3-7
Significant Impact Level Threshold Values

Pollutants[a]	Averaging Period	Class I (µg/m³)	Class II (µg/m³)	Class III (µg/m³)
$PM_{2.5}$	Annual	0.03 ~~0.05~~	0.13 ~~0.2~~	0.13 ~~0.2~~
	24-hour	0.27	1.2	1.2
Fugitive $PM_{2.5}$	Annual	--	0.63	--
	24-hour	--	2.5	--
PM_{10}	Annual	0.32	1	--
	24-hour	0.2	5	--
Fugitive PM_{10}	Annual	--	2.08	--
	24-hour	--	10.4	--
Carbon Monoxide (CO)	Annual	--	500	--
	24-hour	--	2000	--
Nitrogen Dioxide (NO_2)	Annual	0.1	1	--
	24-hour	--	7.5	--

Pollutants[a]	Averaging Period	Class I (µg/m³)	Class II (µg/m³)	Class III (µg/m³)
Sulfur Dioxide (SO_x)	Annual	0.08	1	--
	24-hour	0.2	5	--
	3-hour	1	25	--
	1-hour	--	7.8	--

Table Sources: Air District 2019b.
Table Notes:
a = Classes refer to the type of receptor being protected and correspond to the primary and secondary ambient air quality standards presented in Table 4.3-1. Up to date as of ~~12/4/2019~~ 5/6/2024.
µg/m³ = micrograms per cubic meter.
-- = no significant impact level exists.
CO = carbon monoxide; NO_2 = nitrogen dioxide; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

4.3.3.3 Analysis Methodology

The following sections summarizes the methods for evaluating emissions of criteria air pollutants and potential ambient air quality and health impacts associated with project emissions. Detailed methodology is provided in the Air Quality Assessment (Appendix D-1)~~, and~~ the associated Addendum (Appendix D-2), and the May 13, 2026, revision (Appendix D-3). Appendix D-3 replaces Appendix D-1 and D-2 in their entirety. The general analysis approach was to estimate the increase in emissions from proposed mining, processing, and reclamation operations relative to emissions from existing mining and processing operation at the project sites (which are the existing on the ground physical conditions referred to as the CEQA baseline) and compare the estimated increase to the significance thresholds adopted by Air District.

Project Design Features and Assumptions

Table 4.3-8, "Rockfield Modification Project Components of Air Quality and Greenhouse Gas Modelling," summarizes the project features incorporated into the Air Quality Assessment analysis.

Table 4.3-8
Rockfield Modification Project Components of Air Quality and Greenhouse Gas Modelling

Activity	Description
CONSTRUCTION[1]	
Aggregates Plant_Construction	Construction of aggregates processing plant at the Quarry Site. Expected schedule of 10 months ~~5 days~~.
Grading	Expected schedule of 20~~5~~ days.
Paving	Paving of approximately one mile of road. Expected schedule of 10 days.
Site Preparation	Clearing of Quarry Site and site preparation. Expected schedule of 10 days.

Activity	Description
RESOURCE RECOVERY AND PROCESSING	
Mining Method	Addition of hard rock mining to Quarry Site activities. Addition of primary crusher and hydraulic shovel in pit. Increased use of excavator and dozer operations, in addition to excavation by hydraulic shovel or front-end loader. Addition of drilling and blasting will be required.
Processing	Extracted resources at the Quarry Site will be processed onsite at the relocated ready-mix concrete and hot-mix asphalt plants starting at phase 2, rather than being transported to the Plant Site for processing. Adding processing plant equipment to manufacture sand.
Estimated Annual Aggregates Production	Increase from 1,374,272 tons per year to 3,000,000 tons per year.
Estimated Annual Ready Mix Production	Increase from 189,550 cubic yards per year to 300,000 cubic yards per year.
Estimated Annual Recycle Plant Production	Increase from 25,000 tons per year to 200,000 tons per year.
Estimated Annual Asphalt Plant Production	Increase from 0 tons per year to 500,000 tons per year at a new hot-mix asphalt plant, burning natural gas or propane with best available control technology (BACT).
Hours of Operation	6 days per week, Monday through Saturday (For health risk assessment, modeled conservatively as 7 days per week, 12 hours per day. For criteria pollutant emissions, modeled based on maximum hour and day, by activity levels.)

Table Source: Sespe ~~2019~~ 2026.
Table Notes:
1. The construction of the aggregate plant on the Quarry Site was conservatively assumed to occur in conjunction with the operation of the plant (i.e., the analysis assumed some plant equipment would be operating even during times when it may actually be under construction). This approach is conservative because it results in higher emissions in the model than if construction of plant equipment were estimated separately.

Impacts assessment incorporated the following general assumptions:

- The excavation and associated equipment would operate in compliance with applicable air quality regulations.
  - Diesel engines would continue to comply with applicable state regulations (e.g., ATCM) including establishment of an idling policy, and limiting idle time to less than five minutes (13 CCR Section 2449).
  - Fugitive dust emissions would continue to be controlled through implementation of controls and compliance measures within Air District Rules 8011, 8021, 8031, 8041, 8051, 8061, and 8071. A formalized dust control plan has been provided, and the emissions reduction achieved as a result of the plan are included in the emissions calculations including control methods and efficiencies (see Appendix D-3, Sub appendix K, Fugitive Dust Control Plan).

- Hazardous substances or acutely hazardous substances would not be stored on either of the project sites in quantities that would trigger chemical accident prevention provisions of the CAA or the implementing regulation (40 CFR Part 68).
- The construction of the aggregate plant on the Quarry Site was conservatively assumed to occur in conjunction with the operation of the plant (i.e., the analysis assumed the plant equipment would be operating even during times when it may actually be under construction). This approach is conservative because it results in higher emissions in the model than if construction of plant equipment were estimated separately.
- The project will accept a Condition of Approval to limit excavation to 3,000,000 tons per year.
- A waste factor of 15 percent is anticipated for processing mined alluvium and a waste factor of 5 percent is anticipated for processing of mined hard rock. In order to incorporate waste factors conservatively, the Plant Site was modeled with a waste factor of 15 percent and the Quarry Site was modeled with a waste factor of 10 percent.
- Emissions from placement of waste fines in the bottom of the quarry pit were evaluated and included processing and onsite transport of mined and waste materials.
- Off-site truck travel emissions were re-assessed based on the project's increment of future increases in regional aggregates demand for the Fresno-Production-Consumption region. The regional increment analysis used methods Fresno County previously applied in the Riverbend Sand and Gravel Mine Project. For further discussion of the regional increment analysis, see Final EIR Appendix D-5 and Sub-Appendix J of Appendix D-3.

Design features of the project include:

- Emissions characteristics of off-road vehicle engines in any particular year match those in the California Emissions Estimator Model (CalEEMod).
- Paving of roads on Quarry Site prior to year 30 of the project.

Emissions Calculations Methodologies

Emissions from combustion sources associated with the proposed project primarily consist of non-road diesel engines in off-road vehicles. Exceptions may include water and service trucks, which are on-road but assumed to have off-road engines for purposes of this analysis. This is a conservative assumption because on-road engines generally emit less pollutants as compared to off-road engines manufactured in the same calendar year

(i.e., an on road 2010 model year engine is cleaner than a 2010 off-road engine). Emissions from dust sources associated with the proposed project include windblown dust and other storage pile area emissions (e.g., loading and handling), dozer/quarrying emissions, drop emissions from material transfer, and processing plants.

Emissions from off-road engines were calculated using the CalEEMod default method and emissions factors. Blasting emissions calculations used AP-42 methodology and speciation profiles for air toxics from San Diego County Air Pollution Control District (San Diego County APCD) (EPA 1995; San Diego County APCD 2021). AP-42 and San Diego County APCD emissions factors/profiles were used because the Air District lacks guidance for blasting emissions, and links to both AP-42 and San Diego County APCD resources are provided on the Air District emissions factor webpage (Air District 2021). Dust emissions from aggregate handling and dropping, and dust emissions from travel on unpaved roads within the project sites, were predicted using AP-42 standard emissions factors (EPA 1995).

Baseline Emissions

Baseline emissions were calculated by analyzing fuel use data, engine information, and production records provided by the Applicant. Historical data for production, fuel use, and pollutant emissions were chosen to represent maximum activity levels onsite and utilized to determine the baseline emissions. Historical production data is summarized in Table 4.3-9, "Historical Production Data."

Table 4.3-9
Historical Production Data

Material Produced	Max Hour	Max Day	Annual
Aggregate (tons)	475	6,000 ~~3,166.63~~	1,580,413 ~~1,374,272~~
Recycled Material (tons)	225	1,500	25,000
Asphalt (tons)	0	0	0
Ready Mix (cubic yards)	190	1,267	189,550

Table Source: Sespe 2026~~2019~~.

Baseline emissions calculations results are demonstrated below in Table 4.3-10, "Baseline Maximum Hourly Emissions," Table 4.3-11, "Baseline Maximum Daily Emissions," and Table 4.3-12, "Baseline Maximum Annual Emissions." Permit-required (stationary) equipment and permit-exempt (mobile) equipment emissions are separated as they have separate significance thresholds.

Table 4.3-10
Baseline Maximum Hourly Emissions

Source	ROG (lb/hr)	CO (lb/hr)	NO_X (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_X (lb/hr)
STATIONARY (PERMIT-REQUIRED)						
Aggregates Plant	-	-	-	1.3	0.4	-
Ready Mix Plant	-	-	-	0.4 ~~0.3~~	0.1	-
Asphalt Plant	-	-	-	-	-	-
Recycle Plant	-	-	-	0.4	0.0~~5~~	-
Stockpiles	-	-	-	1.3	0.4	-
Total Stationary	-	-	-	3.4 ~~3.3~~	0.9	-
MOBILE (PERMIT-EXEMPT)						
Off-road Engines	1.7	9.5	22.7	0.9	0.8	0.0
On-road Vehicles (onsite)	0.2 ~~0.3~~	0.5 ~~0.8~~	2.3 ~~3.5~~	84.1~~3~~	17.9 ~~24.7~~	0.0
On-road Vehicles (offsite)	0.2 ~~9.8~~	0.6 ~~32.9~~	1.6 ~~140.3~~	0.3 ~~17.9~~	0.1 ~~7.4~~	0.0 ~~0.6~~
Quarrying	-	-	-	10.0~~.3~~	2.9 ~~3.0~~	-
Blasting	-	-	-	-	-	-
Material Handling	-	-	-	0.1 ~~1.6~~	0.0 ~~0.5~~	-
Total Mobile	2.1 ~~11.8~~	10.6 ~~43.2~~	26.6 ~~166.5~~	95.4 ~~115.0~~	21.7 ~~36.4~~	0.0 ~~0.6~~

Table Source: Sespe 2026 ~~2019~~.
Table Notes: As indicated in the *Guidance for Assessing and Mitigating Air Quality Impacts* (Air District 2015b), "permit-required" sources are stationary sources (e.g., processing plant, hot-mix asphalt plant, ready-mix concrete plant, recycling plant), and "permit-exempt" sources are mobile sources (e.g., haul trucks, excavators). As noted in Appendix D-3, baseline on-road emission estimates used 2005 production data and Year 2018 emission factors from EMFAC; this produces lower baseline values than if Year 2005 emissions from EMFAC were applied.
- = source does not have emissions.
lb/hour = pounds per hour.
CO = carbon monoxide; NO_X = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Table 4.3-11
Baseline Maximum Daily Emissions

Source	ROG (lb/day)	CO (lb/day)	NO_X (lb/day)	PM_{10} (total) (lb/day)	$PM_{2.5}$ (lb/day)	SO_X (lb/day)
STATIONARY (PERMIT-REQUIRED)						
Aggregates Plant	-	-	-	16.8 ~~8.9~~	4.9 ~~2.6~~	-
Ready Mix Plant	-	-	-	2.5 ~~2.3~~	0.7	-
Asphalt Plant	-	-	-	-	-	-
Recycle Plant	-	-	-	4.3 ~~2.4~~	0.6 ~~0.3~~	-
Stockpiles	-	-	-	31.6 ~~8.8~~	9.2 ~~2.6~~	-
Total Stationary	-	-	-	55.3 ~~22.3~~	15.4 ~~6.1~~	-
MOBILE (PERMIT-EXEMPT)						
Off-road Engines	39.2 ~~11.6~~	216.7 ~~63.4~~	501.0 ~~151.4~~	20.6 ~~5.8~~	19.0 ~~5.4~~	0.5 ~~0.2~~
On-road Vehicles (onsite)	2.1 ~~1.7~~	5.3 ~~5.5~~	22.8 ~~23.4~~	917.7 ~~562.2~~	194.9 ~~164.8~~	0.0 ~~0.1~~
On-road Vehicles (offsite)	2.7 ~~65.3~~	5.6 ~~219.3~~	20.2 ~~935.0~~	3.3 ~~119.5~~	1.0 ~~49.0~~	- ~~3.9~~

Source	ROG (lb/day)	CO (lb/day)	NO_X (lb/day)	PM_{10} (total) (lb/day)	$PM_{2.5}$ (lb/day)	SO_X (lb/day)
Quarrying	-	-	-	25.5 ~~68.5~~	7.4 ~~20.0~~	-
Blasting	-	-	-	-	-	-
Material Handling	-	-	-	1.2 ~~10.9~~	0.4 ~~3.2~~	-
Total Mobile	44.0 ~~78.6~~	227.6 ~~288.1~~	544.0 ~~1109.8~~	968.2 ~~766.9~~	222.8 ~~242.4~~	0.5 ~~4.2~~

Table Source: Sespe ~~2019~~ 2026.
Table Notes: As indicated in the *Guidance for Assessing and Mitigating Air Quality Impacts* (Air District 2015b), "permit-required" sources are stationary sources (e.g., processing plant, hot-mix asphalt plant, ready-mix concrete plant, recycling plant), and "permit-exempt" sources are mobile sources (e.g., haul trucks, excavators). As noted in Appendix D-3, baseline on-road emission estimates used 2005 production data and Year 2018 emission factors from EMFAC; this produces lower baseline values than if Year 2005 emissions from EMFAC were applied.
- = source does not have emissions.
lb/day = pounds per day.
CO = carbon monoxide; NO_x = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Table 4.3-12
Baseline Maximum Annual Emissions

Source	ROG (ton/year)	CO (ton/year)	NO_X (ton/year)	PM_{10} (total) (ton/year)	$PM_{2.5}$ (ton/year)	SO_X (ton/year)
STATIONARY (PERMIT-REQUIRED)						
Aggregates Plant	-	-	-	2.2 ~~2.0~~	0.6	-
Ready Mix Plant	-	-	-	0.2	0.1	-
Asphalt Plant	-	-	-	-	-	-
Recycle Plant	-	-	-	0.0	0.0	-
Stockpiles	-	-	-	5.8	1.7	-
Total Stationary	-	-	-	8.2 ~~7.9~~	2.4 ~~2.3~~	-
MOBILE (PERMIT-EXEMPT)						
Off-road Engines	4.8 ~~4.3~~	26.6 ~~24.3~~	61.6 ~~56.2~~	2.6 ~~2.4~~	2.4 ~~2.2~~	0.1 ~~0.05~~
On-road Vehicles (onsite)	0.2	0.5 ~~0.7~~	2.0 ~~3.0~~	88.7	18.8 ~~26.0~~	0.0~~1~~
On-road Vehicles (offsite)	0.7 ~~4.2~~	6.7 ~~14.1~~	2.7 ~~60.2~~	0.4 ~~7.7~~	0.1 ~~3.8~~	0.0 ~~0.3~~
Quarrying	-	-	-	16.6 ~~15.2~~	4.9 ~~4.4~~	-
Blasting	-	-	-	-	-	-
Material Handling	-	-	-	0.1 ~~1.4~~	0.0 ~~0.4~~	-
Employee Trips	0.5 ~~0.8~~	6.2	0.4 ~~0.7~~	0.0	0.0	0.0
Total Mobile	6.2 ~~9.5~~	40.0 ~~45.3~~	66.6 ~~120.1~~	108.4 ~~115.5~~	26.2 ~~36.8~~	0.1 ~~0.3~~

Table Source: Sespe ~~2019~~ 2026.
Table Notes: As indicated in the *Guidance for Assessing and Mitigating Air Quality Impacts* (Air District 2015b), "permit-required" sources are stationary sources (e.g., processing plant, hot-mix asphalt plant, ready-mix concrete plant, recycling plant), and "permit-exempt" sources are mobile sources (e.g., haul trucks, excavators). As noted in Appendix D-3, baseline on-road emission estimates used 2005 production data and Year 2018 emission factors from EMFAC; this produces lower baseline values than if Year 2005 emissions from EMFAC were applied.
- = source does not have emissions.
ton/year = tons per year.
CO = carbon monoxide; NO_x = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Proposed Project Emissions

Construction Phase

Construction phase emissions are shown in Table 4.3-13, "Construction Phase Emissions." Construction consists of building the aggregate processing plant at the Quarry Site, and grading, paving, and site preparation (Table 4.3-8).

Table 4.3-13
Construction Phase Emissions

Units	ROG	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_x
Pounds per Day	4.8	5.04 ~~34.1~~	4.87 ~~54.5~~	1.23 ~~337.3~~	0.64~~41.0~~	0.01 ~~0.064~~
Tons per Year	0.0478	0.92 ~~0.32~~	0.89 ~~0.49~~	0.22 ~~0.95~~	0.12 ~~0.17~~	0.00~~054~~

Table Source: Sespe 2026 ~~2019~~.

Operation Phase

Operation phase emissions are based on the maximum proposed aggregate production and processing volumes anticipated during the entire 100-year project duration, and are summarized in Table 4.3-14, "Operation Phase Maximum Activity."

Table 4.3-14
Operation Phase Maximum Activity

Material Produced	Max Hour[1]	Max Day[2]	Annual[2]
Aggregate (tons)	1,100 ~~475 and~~	14,000 ~~10,500~~	3,000,000
Asphalt (tons)	500 ~~or 500~~	3,333 ~~6,000~~	500,000
Ready Mix (cubic yards)	190 ~~or 382~~	1,266 ~~2,284~~	300,000
Recycled Material (tons)	225 ~~or 225~~	1,500 ~~2,700~~	200,000

Table Source: Sespe ~~2019~~ 2026.

~~**Table Notes:**~~

~~1. Cells with two values are Plant Site and Quarry Site amounts, respectively. When the two values are separated by "and," both sites were assumed to operate simultaneously and when separated by "or" were assumed to operate exclusively at one site or the other; not both simultaneously.~~

2. ~~Cells with one value represent the total amount for the Plant and Quarry Sites combined.~~

Estimated emissions based on proposed project activities at the Plant Site and Quarry Site are summarized in the following tables:

- Table 4.3-15, "Operation Phase Maximum Hourly Emissions,"
- Table 4.3-16, "Operation Phase Maximum Daily Emissions," and
- Table 4.3-17, "Operation Phase Maximum Annual Emissions."

The maximum operation phase emissions are based on the emissions that would occur during maximum proposed aggregate production and processing volumes that could occur during the 100-year project duration, as identified in Table 4.13-14. This

means that the estimates in Tables 4.13-15, 4.13-16, and 4.13-17 represent the maximum emissions for that source/pollutant combination that may occur during either Stage 1 or Stage 2 operations.

Table 4.3-15
Operation Phase Maximum Hourly Emissions

Source	ROG (lb/hr)	CO (lb/hr)	NO_x (lb/hr)	PM_{10} (lb/hr)			$PM_{2.5}$ (lb/hr)	SO_x (lb/hr)
				Fugitive	*Diesel*	*Total*		
STATIONARY (PERMIT-REQUIRED)								
Aggregates Plant	-	-	-	5.9	-	5.9	1.7	-
Ready Mix Plant	-	-	-	0.4	-	0.4 ~~0.3~~	0.1	-
Asphalt Plant	12.2 ~~16.0~~	66.5 ~~65.0~~	4.4	1.7	-	1.7 ~~12.0~~	0.54 ~~0.1~~	1.7
Recycle Plant/ Engine	0.2	1.2	2.6	0.4	0.1	0.5 ~~0.4~~	0.1 ~~0.0~~	-
~~Stockpiles~~ Aggregates Storage	-	-	-	2.5	-	2.5 ~~2.8~~	0.7 ~~0.8~~	-
Total Stationary	12.4 ~~16.0~~	67.7 ~~65.0~~	7.0 ~~4.4~~	10.8	0.1	10.9 ~~21.3~~	3.2 ~~2.8~~	1.7
MOBILE (PERMIT-EXEMPT)								
Off-road Engines	1.1 ~~1.4~~	7.0 ~~8.4~~	13.2 ~~16.0~~	-	0.5	0.5 ~~0.1~~	0.5 ~~0.1~~	0.0 ~~0.03~~
On-road Vehicles (onsite)	0.2~~0.0~~	2.1 ~~0.1~~	5.1 ~~0.8~~	91.3	0.3	91.6 ~~54.7~~	19.4 ~~16.0~~	0.0 ~~0.002~~
On-road Vehicles (offsite)	0.3 ~~0.7~~	6.2 ~~5.2~~	0.6 ~~31.5~~	1.2	0.0	1.2 ~~17.3~~	0.2 ~~5.3~~	0.0 ~~0.1~~
Quarrying	-	-	-	27.7	-	27.7 ~~23.1~~	8.1 ~~6.7~~	-
Blasting	-	36.9	9.4	-	-	-	-	1.1
Material Handling	-	-	-	0.3	-	0.3 ~~2.7~~	0.1 ~~5.3~~	-
Total Mobile	1.6 ~~2.1~~	52.1 ~~50.6~~	28.2 ~~57.6~~	120.6	0.8	121.4~~97.8~~	28.3~~33.4~~	1.1 ~~1.2~~

Table Source: Sespe ~~2019~~ 2026.
Table Notes: As indicated in the *Guidance for Assessing and Mitigating Air Quality Impacts* (Air District 2015b), "permit-required" sources are stationary sources (e.g., processing plant, hot-mix asphalt plant, ready-mix concrete plant, recycling plant), and "permit-exempt" sources are mobile sources (e.g., haul trucks, excavators). As noted in Appendix D-3, Project on-road emission estimates used Year 2026 emission factors from the current version of EMFAC; this recalculation was applied in response to comments on the Draft EIR and produces more up to date on-road mobile source emissions for the proposed Project operations.
- = source does not have emissions.
lb/hour = pounds per hour.
CO = carbon monoxide; NO_x = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Table 4.3-16
Operation Phase Maximum Daily Emissions

Source	ROG (lb/day)	CO (lb/day)	NO_x (lb/day)	PM_{10} (total) (lb/day)			$PM_{2.5}$ (lb/day)	SO_x (lb/day)
				Fugitive	*Diesel*	*Total*		
STATIONARY (PERMIT-REQUIRED)								
Aggregates Plant	-	-	-	59.5	-	59.5 ~~39.0~~	17.4 ~~11.4~~	-
Ready Mix Plant	-	-	-	2.5	-	2.5 ~~2.3~~	0.7	-
Asphalt Plant	81.3 ~~106.7~~	445.5 ~~433.3~~	30.3 ~~29.1~~	11.9	-	11.9 ~~79.7~~	3.9 ~~0.9~~	11.3
Recycle Plant	3.2	15.1	34.8	4.3	1.0	5.3 ~~2.4~~	1.6 ~~0.3~~	0.1
~~Stockpiles~~ Aggregate Storage	-	-	-	60.0	-	60.0 ~~18.7~~	17.5 ~~5.5~~	-
Total Stationary	84.5 ~~106.7~~	460.6 ~~433.3~~	65.1 ~~29.1~~	138.2	1.0	139.3 ~~142.2~~	41.1 ~~18.7~~	11.4 ~~11.3~~
MOBILE (PERMIT-EXEMPT)								
Off-road Engines	42.0 ~~9.3~~	263.5 ~~55.9~~	489.9 ~~106.3~~	-	20.0	20.0 ~~0.4~~	18.3 ~~0.4~~	0.8 ~~0.2~~
On-road Vehicles (onsite)	9.4 ~~0.1~~	116.3 ~~0.9~~	42.5 ~~5.2~~	806.6	1.4	808.0 ~~364.6~~	171.2 ~~106.5~~	0.2 ~~0.0~~
On-road Vehicles (offsite)	1.4 ~~4.5~~	24.9 ~~34.9~~	6.0 ~~210.1~~	8.7	0.2	8.9 ~~115.0~~	2.0 ~~35.5~~	0.0 ~~0.7~~
Quarrying	-	-	-	88.9	-	88.9 ~~154.0~~	26.1 ~~45.0~~	-
Blasting	-	469.0 ~~245.7~~	119.0 ~~62.3~~	-	-	-	-	14.0 ~~7.3~~
Material Handling	-	-	-	3.2	-	3.2 ~~18.2~~	0.9 ~~35.5~~	-
Total Mobile	52.7 ~~13.9~~	873.7 ~~337.3~~	657.4 ~~384.0~~	907.5	21.6	929.0 ~~652.2~~	218.5 ~~222.9~~	15.1 ~~8.2~~

Table Source: Sespe ~~2019~~ 2026.
Table Notes: As indicated in the *Guidance for Assessing and Mitigating Air Quality Impacts* (Air District 2015b), "permit-required" sources are stationary sources (e.g., processing plant, hot-mix asphalt plant, ready-mix concrete plant, recycling plant), and "permit-exempt" sources are mobile sources (e.g., haul trucks, excavators). As noted in Appendix D-3, Project on-road emission estimates used Year 2026 emission factors from the current version of EMFAC; this recalculation was applied in response to comments on the Draft EIR and produces more up to date on-road mobile source emissions for the proposed Project operations.
- = source does not have emissions.
lb/day = pounds per day.
CO = carbon monoxide; NOX = oxides of nitrogen; ROG = Reactive Organic Gases; SOx = oxides of sulfate; PM2.5 = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM10 = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Table 4.3-17
Operation Phase Maximum Annual Emissions

Source	ROG (ton/yr)	CO (ton/yr)	NO_x (ton/yr)	PM_{10} (total) (ton/yr)			$PM_{2.5}$ (ton/yr)	SO_x (ton/yr)
				Fugitive	Diesel	Total		
STATIONARY (PERMIT-REQUIRED)								
Aggregates Plant	-	-	-	5.6	-	5.6	1.6	-
Ready Mix Plant	-	-	-	0.3	-	0.3	0.1	-
Asphalt Plant	6.1 ~~8.0~~	33.8 ~~32.5~~	2.4 ~~2.2~~	0.9	-	0.9 ~~6.0~~	0.3 ~~0.1~~	0.9
Recycle Plant	0.1	0.6	1.1	0.2	0.0	0.2 ~~0.2~~	0.0	0.0
~~Stockpiles~~ Aggregates Processing	-	-	-	11.0	-	11.0 ~~12.3~~	3.2 ~~11.4~~	-
Total Stationary	6.2 ~~8.0~~	34.4 ~~32.5~~	3.5 ~~2.2~~	17.9	0.0	18.0 ~~24.3~~	5.3 ~~13.2~~	0.9
MOBILE (PERMIT-EXEMPT)								
Off-road Engines	5.0 ~~5.2~~	31.6 ~~25.1~~	58.2 ~~60.2~~	-	2.3	2.3 ~~0.2~~	2.2 ~~0.2~~	0.1
On-road Vehicles (onsite)	0.0	0.2 ~~0.1~~	0.6 ~~0.7~~	73.9	0.0	73.9 ~~59.5~~	15.7 ~~17.4~~	0.0
On-road Vehicles (offsite)	0.5 ~~0.6~~	5.7 ~~4.0~~	1.0 ~~28.5~~	0.7	0.0	0.7 ~~15.7~~	0.2 ~~4.8~~	0.0 ~~0.1~~
Quarrying	-	-	-	6.9	-	6.9 ~~31.5~~	2.0 ~~9.5~~	-
Blasting	-	50.3	12.8 ~~11.6~~	-	-	-	-	1.5
Material Handling	-	-	-	0.3	-	0.3 ~~3.7~~	0.1 ~~1.1~~	-
~~Employee Trips~~	~~0.1~~	0.8 ~~0.5~~	~~0.1~~	-	-	~~0.0~~	~~0.0~~	~~0.0~~
Total Mobile	5.5 ~~5.9~~	87.8 ~~79.9~~	72.5 ~~101.0~~	81.7	2.4	84.1 ~~110.7~~	20.1 ~~33.0~~	1.6 ~~1.7~~

Table Source: Sespe ~~2019~~ 2026.
Table Notes: As indicated in the Guidance for Assessing and Mitigating Air Quality Impacts (Air District 2015b), "permit-required" sources are stationary sources (e.g., processing plant, hot-mix asphalt plant, ready-mix concrete plant, recycling plant), and "permit-exempt" sources are mobile sources (e.g., haul trucks, excavators). As noted in Appendix D-3, Project on-road emission estimates used Year 2026 emission factors from the current version of EMFAC; this recalculation was applied in response to comments on the Draft EIR and produces more up to date on-road mobile source emissions for the proposed Project operations.
- = source does not have emissions.
ton/yr = tons per year.
CO = carbon monoxide; NOx = oxides of nitrogen; ROG = Reactive Organic Gases; SOx = oxides of sulfate; PM2.5 = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM10 = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Health Risk

Exposure to equipment exhaust and fugitive dust can lead to various health impacts. Specifically, the following three types of public health impacts are commonly associated with exposure to trace metals in dust and diesel particulate matter:

1) Cancer risk (reported as a probability)
2) Acute non-cancer risk (reported as a Hazard Index)
3) Chronic non-cancer risk (reported as a Hazard Index)

The preparation of health risk assessments is a multi-step process. The first step is to identify potential contaminants that may contribute to public health risks (hazard identification. The second step is to assess the amount of contaminants that may reach the public (exposure assessment). The third step is to calculate the magnitude of the health risk as a result of exposure to harmful contaminants on the basis of the toxicology of the contaminants (dose-response assessment and risk characterization). The health risk assessment for the proposed project was performed using current best practices including methods from the OEHHA (2015) risk assessment guidelines.

Hazard Identification and Quantification

For air toxics sources, hazard identification involves the pollutant(s) of concern emitted by a facility, and the types of adverse health effects associated with exposure to the chemical(s), including whether a pollutant is a potential human carcinogen or is associated with other types of adverse health effects. Diesel particulate matter is the primary toxic air contaminant emitted by off-road engines used in mining projects.

As described in Section 4.3.1.3, "Toxic Air Contaminants," diesel particulate matter, respirable crystalline silica, and naturally occurring asbestos are toxic air contaminants of concern associated with proposed project sources. The health risk assessment considered whether health risk from asbestos should be quantified. It was determined based on review of available geologic maps and language in the Asbestos ATCM's (17CCR Sections 93105 and 93106) that asbestos is unlikely to be a concern and so was not included in the HRA. The geotechnical assessment for the proposed project (Appendix F-1) confirms that the project sites are not located in a region of California noted for rock types that contain naturally occurring asbestos and a review of on-site core samples for several borings did not indicate the presence of ultramafic rock constituents. Therefore, the proposed project would not result in health risk impacts from exposure to naturally occurring asbestos.

Diesel particulate matter has an assigned cancer potency factor (CPF) and a non-cancer reference exposure level that are used to evaluate the health risk. Fugitive dust

is generally inert but does contain trace metals and respirable crystalline silica. As documented in Appendix D-1 as updated in Appendix D-3, soil sampling of the project sites was conducted to determine potential concentrations of metals and respirable crystalline silica in the site soils. The health risk analysis conservatively assumed that toxic air contaminants are present in soil onsite at the highest concentration reported by the laboratory throughout the samples taken. Toxic air contaminants that were not detected during sampling are assumed to be present at the Minimum Detection Level.

Air District standard speciation profiles and data determined via sampling were combined with calculated PM_{10} emissions to determine the mass of each toxic air contaminant, and dispersion coefficients to quantitatively predict the ground level concentration of each toxic air contaminant, to which individuals may be exposed (see exposure assessment subsection below). The concentrations were then combined with exposure parameters to quantify the dose received by each receptor and for each exposure pathway. In the case of non-cancer risk, the exposures were then summed on a target organ by target organ basis using Hotspots Analysis and Reporting Program Air Dispersion Modeling and Risk Assessment Tool Version 2 (HARP2 risk model) to determine the maximum Hazard Index among the target organs in the body. The maximum target organ Hazard Index was then compared to the non-cancer significance criteria (i.e., 1.0 Hazard Index) as discussed in the following subsections.

Exposure Assessment

The purpose of exposure assessment is to estimate the extent of public exposure to emitted substances. In practice this means estimating exposures for those emitted substances for which potential cancer risk or non-cancer health hazards for acute, repeated 8-hour, and chronic exposures will be evaluated. This involves emission quantification, modeling of environmental transport, evaluation of environmental fate, identification of exposure routes, identification of exposed populations, and estimation of short-term (e.g., 1-hour maximum), 8-hour average, and long-term (annual) exposure levels.

HARP2 risk model software was used to model ground level concentrations at specific off-site locations. HARP2 incorporates the EPA-approved air dispersion model, American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD). Air dispersion modeling for the proposed project was performed using AERMOD View by Lakes Environmental (Version 13.0.0 ~~9.7.0~~ running AERMOD executable Version 24142).

Modeled receptors are shown on the following figures:

- Figure 4.3-1, "Non-Residential Sensitive Receptor Locations,"
- Figure 4.3-2, "Detailed Model Receptor Locations," and
- Figure 4.3-3, "Plant Site Labeled Receptor Locations."

~~225 cartesian grid receptors,~~ 26 discrete receptors~~,~~ and 6857 ~~156~~ fence-line/grid ~~plant boundary~~ receptors were modeled. Receptors for residents and workers were modeled at ground level.

Sources of emissions were assigned positive emissions values and baseline sources were assigned negative values (i.e., to represent sink) so that the health risk assessment results represent the change in health risk from the proposed project relative to baseline conditions. In order to obtain the most conservative possible health risk assessment, the model assumes mining would place as close as possible to residential receptors. Concentration of mining emissions into a small area near receptors allows the model to demonstrate potential risk in the worst-case scenario. Chronic and cancer risks were evaluated at locations where long-term occupancy is reasonably expected (≥1 year), while maximum acute risk was assessed at the project fence line, with risk attenuation documented as distance increases.

The model was segmented into two intervals that were chosen to coincide with onsite activity changes and project consolidation at the Quarry Site after 30 years. The segments of the HRA model were chosen to coincide with onsite activity changes and represent years 1-70 for Stage 1 (years 1 through 30, with activities at both the Plant Site and Quarry Site, and parts of Stage 2 (years 31-70), with activities at only the Quarry Site) and Stage 2 (years ~~30~~31 through 100, with activities at only the Quarry Site). Each HRA phase was evaluated separately to reflect changes in onsite activities and emission locations. To capture the full 70-year duration, the first HRA segment combined the risks from each phase by summing the risks from both phases, resulting in a cumulative risk estimate that reflects continuous exposure over a 70-year operational period. Although the ~~second interval represents the final 70~~ project represents~~years of the~~ 100 years of operation, the preparation of two 70-year HRA models meets SJVAPCD guidance to use a 70-year analysis.~~project, consistent with Air District guidance, it was modeled for 30 years which represents 95th percentile of residency durations at a single location.~~

Dose-Response Assessment

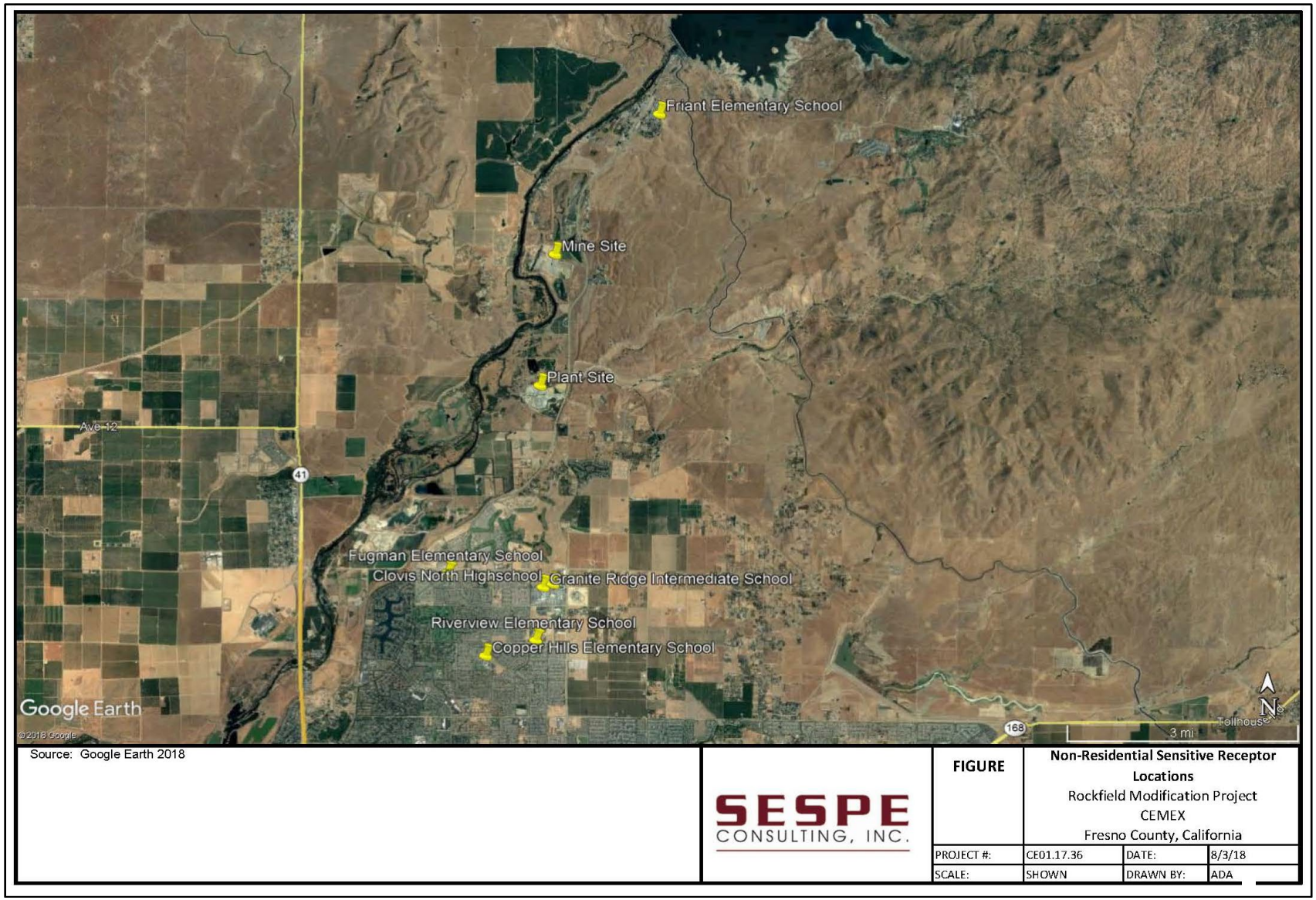
Dose-response assessment is the process of characterizing the relationship between exposure to an agent and incidence of an adverse health effect in exposed populations.

In quantitative carcinogenic risk assessment, the dose-response relationship is expressed in terms of a potency slope that is used to calculate the probability or risk of cancer associated with intensity of the exposure. For noncarcinogenic effects, dose-response data developed from animal or human studies are used to develop acute, repeated 8-hour, and continuous exposure reference exposure levels. The non-cancer reference exposure levels are defined as the concentration at which no adverse non-cancer health effects are anticipated even in sensitive members of the general population, with infrequent one-hour exposures, repeated 8-hour exposures over a significant fraction of a lifetime, or continuous exposure over a significant fraction of a lifetime, respectively.

Risk Characterization

Risk characterization is the final step of the health risk assessment. In this step, information developed through the exposure assessment is combined with information from the dose-response assessment to characterize risks at each receptor. A general summary of the risk characterization components includes the following:

- The locations of the point of maximum impact (PMI), the maximum exposed individual sensitive receptor (MEIR), and the maximum exposed individual off-site worker (MEIW) are identified. The PMI, MEIW, and MEIR for cancer risk and for noncancer hazard indices may not occur at the same location; and should be identified.
- The location of any specified sensitive receptors (e.g., schools, hospitals, daycare, or eldercare facilities) are identified.
- Estimates of population-wide cancer burden are assessed if maximum incremental cancer risk greater than zero for residential receptors. The cancer burden is calculated by multiplying the cancer risk at a census block centroid by the number of people who live in the census block, and adding up the estimated number of potential cancer cases across the zone of impact. The result of this calculation is a single number that is intended to estimate the number of potential cancer cases within the population that was exposed to the emissions.



SOURCE: Sespe Consulting, Inc. 2019

Non-Residential Sensitive Receptor Locations
ROCKFIELD MODIFICATION PROJECT
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Figure 4.3-1

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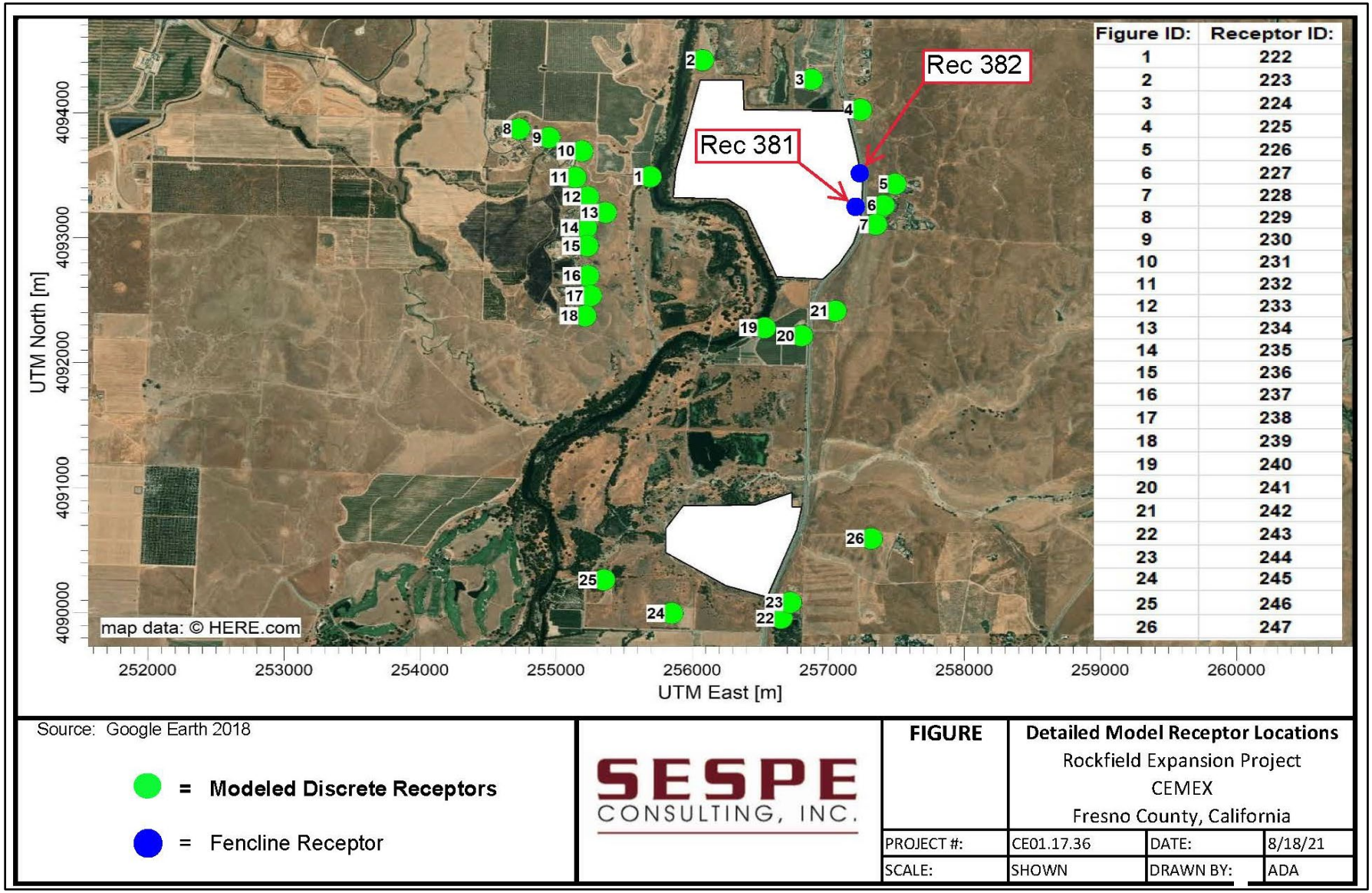

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SOURCE: Sespe Consulting, Inc. 2022

Detailed Model Receptor Locations
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 4.3-2

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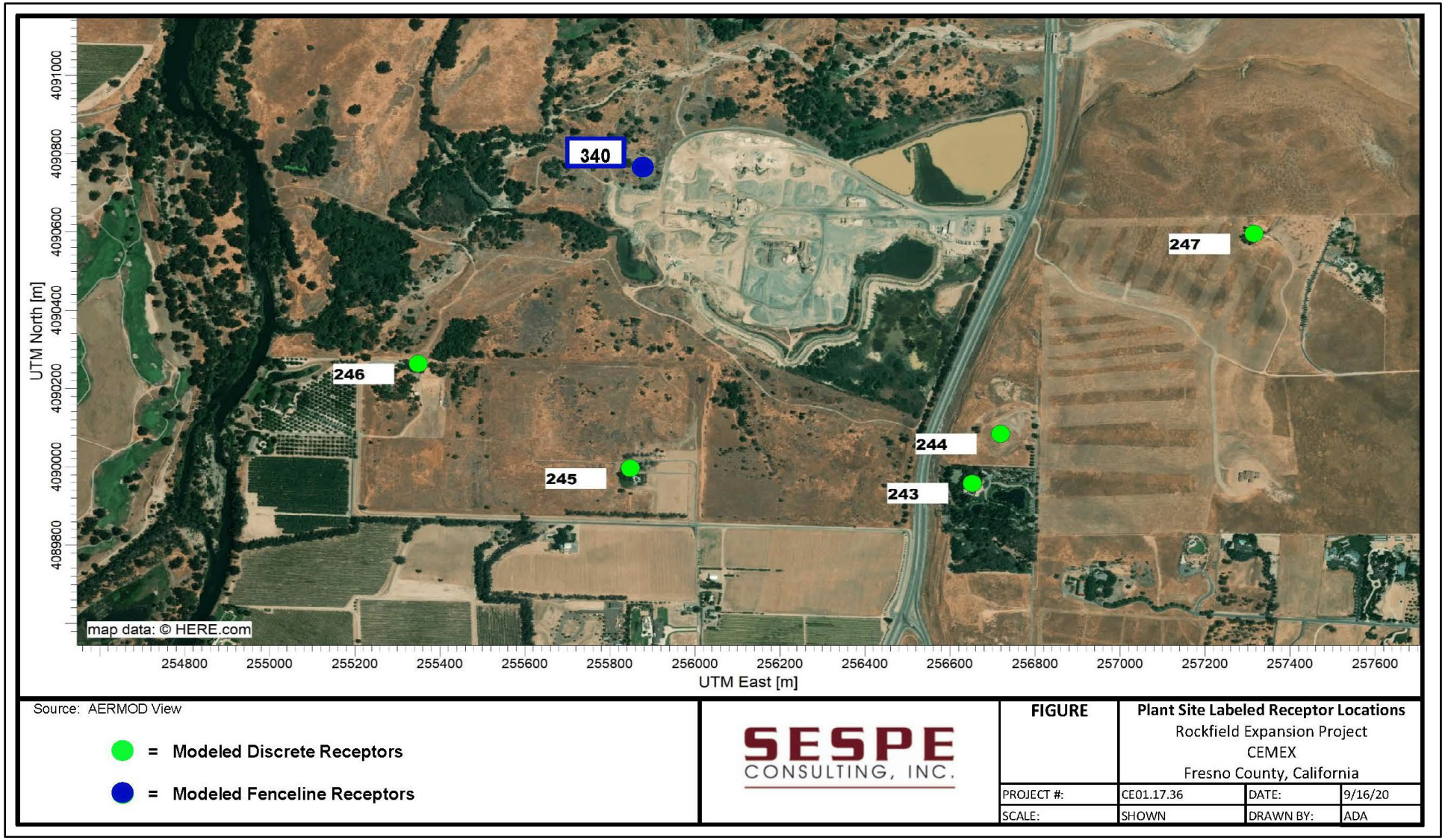

SOURCE: Sespe Consulting, Inc. 2022

Plant Site Labeled Receptor Locations
ROCKFIELD MODIFICATION PROJECT
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Figure 4.3-3

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Odor

There are sensitive receptors located within one mile of the Plant Site and Quarry Site, and therefore odor concerns associated with the asphalt plant cannot be screened out based on distance (Table 4.3-5). For consideration of odors, the odor complaint history was reviewed to determine whether or not the past operation of this asphalt plant on the Plant Site (even though it stopped operating in 2009 and therefore is not a contributor to the existing environmental setting for the project) resulted in odor complaints. This review disclosed no odor complaints for the past operation of the asphalt plant. Advances in odor control technology, wind direction, and the location of the asphalt plant relative to the nearest sensitive receptors were also considered.

4.3.4 Project Impacts and Mitigation Measures

Impact 4.3-1: Conflict with or Obstruct Implementation of the Applicable Air Quality Plan

The Air District's air quality attainment plans are discussed in the "San Joaquin Valley Air Pollution Control District" subsection. Potential control measures that may be pursued to reduce emissions are described in the attainment plans. These measures would be implemented as rules and therefore would undergo the associated public rulemaking process, which allows for quarry operators to provide input on the feasibility of compliance with proposed rules. Thus, it is unlikely that such a process would result in a requirement with which the proposed project could not comply. Furthermore, aggregates production is proportional to population growth, which is a factor that is accounted for in attainment plans. Lastly, as described below in Impact 4.3-2, the proposed project would not result in any significant and unavoidable air quality impacts related to criteria air pollutant emissions. For these reasons, the proposed project would not obstruct implementation of an air quality attainment plan and this impact would be less than significant.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: None required.

Impact 4.3-2: Result in a Cumulatively Considerable Net Increase of Any Criteria Pollutant for which the Project Region is Non-Attainment Under an Applicable Federal or State Ambient Air Quality Standard

Project operations associated with mining, processing, and reclamation activities would emit the criteria air pollutants ROG, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ from construction equipment and from mobile equipment and motor vehicles associated with excavation

and blasting, and operation of an aggregate plant, ready-mix concrete plant, asphalt plant, and portable recycle plant on the Plant Site and Quarry Site.

The CEQA Guidelines define cumulative impacts as two or more individual effects which, when considered together, are either significant or "cumulatively considerable", meaning they add considerably to a significant environmental impact. An adequate cumulative impact analysis considers a project over time and in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed. A Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project would comply with the requirements in a previously approved plan or mitigation program, including but not limited to an air quality attainment or maintenance plan that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (14 CCR Section 15064(h)(3)).

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development. Future attainment of state and federal ambient air quality standards is a function of successful implementation of the Air District's attainment plans. Consequently, the Air District's application of thresholds of significance for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality. Thus, if the increase in emissions relative to baseline conditions exceeds thresholds for ROG, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$, then the proposed project would result in a cumulatively considerable net increase of a criteria pollutant for which the Air District is in non-attainment under applicable state or federal ambient air quality standards. Air District attainment significance criteria for criteria pollutants are presented in Table 4.3-4 alongside non-attainment pollutants for disclosure purposes.

Based on the analysis described in Section 4.3.4.3, "Analysis Methodology," the proposed project's construction and operation phase emissions are summarized and compared to significance criteria in Table 4.3-18, "Construction Phase Criteria Pollutant Annual Emissions," and Table 4.3-19, "Operation Phase Criteria Pollutant Annual Emissions."

Table 4.3-18
Construction Phase Criteria Pollutant Annual Emissions

	ROG (ton/year)	CO (ton/ year)	NO_X (ton/ year)	PM_{10} (ton/ year)	$PM_{2.5}$ (ton/year)	SO_x (ton/ year)
Construction	0.0478	0.92 ~~0.32~~	0.89 ~~0.49~~	0.22 ~~0.95~~	0.12 ~~0.17~~	0.000 ~~0.00054~~
Threshold	10	100	10	15	15	27
Significant?	No	No	No	No	No	No

Table Source: Sespe **2026** ~~2019~~.
Table Notes:
ton/year = tons per year.
CO = carbon monoxide; NO_X = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Table 4.3-19
Operation Phase Criteria Pollutant Annual Emissions

Criteria Pollutant	Permit-Required (Stationary) Sources (ton/yr)			Permit-Exempt (Mobile) Sources (ton/yr)		
	Project Emissions	*Significance Criteria*	*Project Exceeds?*	*Project Emissions*	*Significance Criteria*	*Project Exceeds?*
ROG	6.2 ~~6.1~~	10	No	-0.1 ~~3.9~~	10	No
CO	34.3 ~~33.8~~	100	No	49.4 ~~33.8~~	100	No
NO_x	3.4 ~~2.4~~	10	No	5.2 ~~23.3~~	10	No
PM_{10}	9.8 ~~16.2~~	15	No ~~Yes~~	-25.4 ~~5.3~~	15	No
$PM_{2.5}$	2.9 ~~12.2~~	15	No	-6.3 ~~4.0~~	15	No
SO_X	0.9	27	No	1.4	27	No

Table Source: Sespe ~~2021~~ 2026.
Table Notes:
Bold values indicate that the criteria pollutant emissions exceed the significance criteria.
Negative values represent emissions reductions relative to baseline emissions due to newer technology and lower emission equipment requirements, particularly those described in the "In-Use Off-Road Diesel-Fueled Fleets" and "In-Use On-Road Diesel-Fueled Vehicles."
As noted in Appendix D-3, Project on-road emission estimates used Year 2026 emission factors from the current version of EMFAC; this recalculation was applied in response to comments on the Draft EIR and produces more up to date on-road mobile source emissions for the proposed Project operations. As indicated in the Guidance for Assessing and Mitigating Air Quality Impacts, "permit-required" sources are stationary sources (e.g., processing plant, hot-mix asphalt plant, ready-mix concrete plant, recycling plant), and "permit-exempt" sources are mobile sources (e.g., haul trucks, excavators).
ton/year = tons per year.
CO = carbon monoxide; NO_X = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

The impact analysis for a project's potential to exceed or contribute to exceedance of an ambient air quality standard normally involves modeling emissions to predict the concentration of pollutant(s) off-site. The Air District has established a screening level of 100 pounds per day (lbs/day) that may be used to avoid modeling impacts that are unlikely to result in exceedances. If a project exceeds this screening level, then additional

modeling is required to determine whether project emissions would exceed applicable ambient air quality standard and, therefore, result in a potentially significant impact requiring mitigation.

Baseline emissions from sources located at the project sites were subtracted from future emissions at the project sites to estimate the increase in emissions on-site for comparison to the 100 lbs/day screening level as shown in Table 4.3-20, "Net Increase in Unmitigated Daily Emissions and Model Screening Level Comparison."

Table 4.3-20
Net Increase in Unmitigated Daily Emissions and Model Screening Level Comparison

Scenario	CO (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	SO_X (lb/day)
On-Site Baseline	228.4 ~~78.4~~	544.0 ~~199.3~~	1,023.5 ~~767.9~~	238.2 ~~228.3~~	0.5 ~~0.3~~
On-Site Project	1,323.4 ~~1,194.5~~	669.4 ~~203.3~~	1,057.8 ~~1,183.6~~	257.1 ~~371.4~~	26.6 ~~30.3~~
On-Site Increase from Project	1,095.0 ~~1,116.~~1	125.4 ~~4.0~~	34.3 ~~415.7~~	18.8 ~~143.1~~	26.1 ~~30.0~~
Screening Criteria	100	100	100	100	100
Exceeds Criteria?	Yes	Yes ~~No~~	No ~~Yes~~	No ~~Yes~~	No

Table Source: Sespe 2026~~2021~~.
Table Notes:
lb/day = pounds per day. CO = carbon monoxide; NO_X = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

As shown in Table 4.3-18, the construction phase of the proposed project would not generate emissions that could exceed the screening level for any criteria pollutants. As shown in Table ~~4.3-19 and~~ 4.3-20, proposed project mining, processing, and production operations could generate emissions that exceed the ~~annual screening level for PM_{10}, and the~~ daily screening level for CO, and NO_x ~~PM_{10}, and $PM_{2.5}$~~. Therefore, the proposed project could potentially result in a cumulatively considerable net increase of these criteria pollutants. Note that for permit-exempt (mobile) sources, the emissions of ROG, NO_x, PM_{10}, and $PM_{2.5}$ would decrease due to technological advancement that facilitates the continued reduction in emissions from mobile diesel-powered equipment.

The potential health risks of CO, and NO_x ~~PM_{10}, and $PM_{2.5}$~~ are described above in Section 4.3.2.2, "Pollutants and Health Effects." Ambient air quality standards are established to protect the public from adverse health effects of criteria pollutants and to provide protection against visibility impairment and damage to animals, crops, vegetation, or buildings. Because the proposed project could result in emissions that exceed the Air District's thresholds of significance for criteria pollutants, the adverse health effects, visibility impairment, and damage described above in Section 4.3.2.2 could be caused or

exacerbated as a result of the proposed project emissions. Mitigation Measure 4.3-2a would require that all equipment with off-road engines ~~to~~ be retrofitted or upgraded to meet the Tier 4 Interim Particulate Emissions standard and Mitigation Measure 4.3-2b would require dust from unpaved roads and stockpiles to be controlled by the application of dust suppressants. The estimated criteria air pollutant emissions with application of Mitigation Measure 4.-2a, -2b, and -2c are presented in Table 4.3-21, "Mitigated Operation Phase Criteria Air Pollutant Annual Emissions," and Table 4.3-22, "Mitigated Net Change in Daily Emissions."

Table 4.3-21
Mitigated Operation Phase Criteria Air Pollutant Annual Emissions

	Permit-Required (Stationary) Sources (ton/yr)			Permit-Exempt (Mobile) Sources (ton/yr)		
Criteria Pollutant	***Project Emissions with Mitigation***	***Significance Criteria***	***Project Exceeds?***	***Project Emissions with Mitigation***	***Significance Criteria***	***Project Exceeds?***
ROG	6.2 ~~6.1~~	10	No	-0.1 ~~3.9~~	10	No
CO	34.3 ~~33.8~~	100	No	49.4 ~~33.8~~	100	No
NO_X	3.4 ~~2.4~~	10	No	5.2 ~~23.3~~	10	No
PM_{10}	4.3 ~~14.6~~	15	No	-67.4 ~~60.8~~	15	No
$PM_{2.5}$	1.3 ~~9.8~~	15	No	-17.1 ~~20.1~~	15	No
SO_X	0.9	27	No	1.4	27	No

Table Source: Sespe 2026~~2021~~.
Table Notes: Negative values represent emissions reductions relative to baseline emissions due to newer technology and lower emission equipment requirements, particularly those described in the "In-Use Off-Road Diesel-Fueled Fleets" and "In-Use On-Road Diesel-Fueled Vehicles", and due to implementation of Mitigation Measure 4.3-2a and b. As noted in Appendix D-3, Project on-road emission estimates used Year 2026 emission factors from the current version of EMFAC; this recalculation was applied in response to comments on the Draft EIR and produces more up to date on-road mobile source emissions for the proposed Project operations.
tons/year = tons per year.
CO = carbon monoxide; NO_X = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Table 4.3-22
Mitigated Net Change in Daily Emissions

Scenario	CO (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	SO_X (lb/day)
On-Site Baseline	228.4 ~~78.4~~	544.0 ~~199.2~~	1,010.9 ~~764.7~~	234.5 ~~227.4~~	0.5 ~~0.3~~
On-Site Future	1,323.4 ~~1,194.5~~	669.4 ~~203.3~~	573.4 ~~678.1~~	136.7 ~~223.9~~	26.6 ~~30.3~~

Scenario	CO (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	SO_X (lb/day)
On-Site Project with Mitigation	1,095.0 ~~1,116.1~~	125.4 ~~4.1~~	-437.5 ~~86.6~~	-97.8 ~~3.5~~	26.1 ~~30.0~~
Screening Criteria	100	100	100	100	100
Exceeds Criteria?	Yes	Yes ~~No~~	No	No	No

Table Source: Sespe ~~2021~~ **2026**.
Table Notes: Negative values represent emissions reductions relative to baseline emissions due to newer technology and lower emission equipment requirements, particularly those described in the "In-Use Off-Road Diesel-Fueled Fleets" and "In-Use On-Road Diesel-Fueled Vehicles", and due to implementation of Mitigation Measures 4.3-2.
lb/day = pounds per day.
CO = carbon monoxide; NO_X = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Prior to mitigation, the project's estimated emissions of ~~NOx,~~ PM_{10}, $PM_{2.5}$ and SO_x are below the screening level threshold. As shown in Tables 4.3-21 and 4.3-22, Mitigation Measure 4.3-2a and Mitigation Measure 4.3-2b would decrease annual and daily emissions ~~of PM_{10} and daily emissions of $PM_{2.5}$ below the screening level thresholds~~. However, annual emissions of CO and NOx would remain greater than the screening level. In accordance with APR-2030, when any one of the criteria pollutants surpasses its established screening threshold, air dispersion modeling is required for all criteria pollutants. Therefore, the off-site concentration of each criterion pollutant ~~Therefore, the off-site concentrations of CO~~ were modeled for both mitigated and unmitigated levels to determine whether those concentrations exceed the applicable ambient air quality standard. The results are presented in Table 4.3-23, "Mitigated and Unmitigated Criteria Pollutant ~~CO~~ Concentrations." Air dispersion modeling was performed using the latest version of AERMOD to ensure accurate and reliable air quality predictions. Blasting was excluded from the one-hour models as blasting emissions are brief and therefore would not be appropriately modeled using steady state assumptions in AERMOD, but were instead modeled separately as discussed below.

As shown in Table 4.3-23, "Mitigated and Unmitigated Criteria Pollutant ~~CO~~ Concentrations," both project and cumulative estimated criteria pollutant ~~CO parts per million~~ concentrations would not exceed ambient air quality standards. Consequently, with implementation of Mitigation Measure 4.3-2a and Mitigation Measure 4.3-2b, criteria air pollutant emissions by the proposed project operations would be below the Air District's thresholds of significance, which are intended to be protective of human health and the environment. Therefore, this impact would be less than significant.

Table 4.3-23
Mitigated and Unmitigated Criteria Pollutant ~~CO~~ Concentrations

Pollutant	Period	Background[a] (ug/m³)	Project Contribution[b] (ug/m³)		Proposed Project + Background (ug/m³)	NAAQS[c] (ug/m³)	CAAQS[c] (ug/m³)	SJVAPCD SIL[f] (ug/m³)[e]	Significant?
NO_2	1-hour	25.46	H1H	79.93	105.39	-	339	NA	No
	1-hour	25.46	H8H	69.29	94.75	188		NA	No
	Annual	11.31	H1H	5.17	16.48	100	57	NA	No
SO_2	1-hour	1.59	H1H	9.96	11.55	196	655	NA	No
	Annual	1.59	H1H	1.09	2.68	26		NA	No
CO	1-hour	301	H1H	231	533	40,000	23,000	NA	No
	8-hour	308	H1H	255	563	10,000	10,000	NA	No
PM_{10}	24-hour	—[d]	H8H	0.2365	N/A	150	50	10.4	No
	Annual	—[d]	H1H	-0.1101	N/A	—	20	2.08	No
$PM_{2.5}$	24-hour	—[d]	H8H	-0.015	N/A	35	—	2.5	No
	Annual	—[d]	H1H	0.0825	N/A	9	12	0.63	No
Pb	3-month	0.003	Max Ave	0.003	0.006	0.15	—	—	No

Table Source: Sespe 2026.

a) Background concentration is obtained from Site No. 11.

b) HIH = 1st Highest High (highest modeled result). Where a pollutant and averaging period has a NAAQS and CAAQS standard, the most stringent standard is selected.

c) San Joaquin Valley APCD is in attainment for these pollutants (excluding PM10 and PM2.5) and averaging periods; therefore, the most stringent AAQS (CAAQS or NAAQS) is used for the significant determination.

d) San Joaquin APCD is not in attainment of these standards, therefore, San Joaquine APCD LST Significant Change Threshold is used for determining significance and does not require background concentrations (SJAPCD 2024).

e) SJVAPCD uses Class II SILs for evaluating the significance of Project PM10 and PM2.5 emissions, as reported in District Policy APR 1925, Policy for District Rule 2201 AAQA Modeling (SJVAPCD, 2024).

f) SIL is defined as "a concentration threshold used to determine whether a proposed source's emissions will have a "significant impact on air quality in an area" (APR 1925) (SJVAPCD, 2024).

~~Table 4.3-23~~ [REPLACED WITH TABLE SHOWN ABOVE]
~~Mitigated and Unmitigated Criteria Pollutant CO Concentrations~~

~~Pollutant (period)~~	~~Background (ppm)~~	~~Mitigated and Unmitigated Project Maximum[1] (ppm)~~	~~Mitigated and Unmitigated Cumulative[1] (ppm)~~	~~Ambient Air Quality Standard (ppm)~~	~~Project Exceeds?~~	~~Cumulative Exceeds?~~
~~CO (1 hr)~~	~~2.4~~	~~1.06~~	~~3.46~~	~~20~~	~~No~~	~~No~~
~~CO (8 hr)~~	~~1.8~~	~~1.06[2]~~	~~3.46[2]~~	~~9~~	~~No~~	~~No~~

~~**Table Source:** Sespe **2026**2021.~~
~~**Table Notes:**~~
~~ppm = parts per million.~~
~~CO = carbon monoxide.~~
~~1. The Addendum (Appendix D-2) indicates that CO emissions remain relatively unchanged by mitigation measures and so the mitigated and unmitigated concentrations are the same and shown in this table.~~
~~2. More conservative 1-hour results and background were assumed for 8-hour standard, as 1-hour results are still below 8-hour standard.~~

To evaluate the environmental impact of above-ground blasting at the Rockfield Quarry, a separate blasting model was conducted. Meteorological and blasting data were collected and analyzed. NO2 Dispersion modeling was conducted exclusively for the quarry site, where nine emission sources were placed around the perimeter to simulate blasting events. Appendix D-3 summarizes the dispersion modeling results for NO_2. The 98th percentile of 1-hour maximum concentrations was compared to the national standard, while the highest 1-hour concentration was compared to the state standard, reflecting the different regulatory approaches. The national criterion is based on the 98th percentile of daily maximum 1-hour values, whereas the state standard uses the single highest 1-hour concentration. Across all nine scenarios, modeled NO_2 concentrations ranged from 56 to 216 µg/m³, which are well below both National and State 1-hour limits. These findings confirm that increased operations at Rockfield Quarry comply with current air quality regulations and that emissions from the project's blasting activities would not contribute to an exceedance of an applicable Ambient Air Quality Standard (AAQS).

Level of Significance Before Mitigation: Potentially ~~S~~significant.

Mitigation Measure 4.3-2a: *Off Road Engines*

Off-road engines shall be retrofitted or upgraded in order to meet the Tier 4i Particulate Emissions standard of 0.008 grams of PM_{10}/horsepower-hour.

Mitigation Measure 4.3-2b: *Fugitive Dust Control Plan*

A Fugitive Dust Control Plan ~~shall be~~ has been prepared for the proposed project and shall be submitted to the San Joaquin Valley Air Pollution Control District (SJVAPCD)

*for review and approval prior to project implementation. The Applicant will also coordinate with the SJVAPCD for monitoring of this Mitigation Measure 4.3-2b and the approved Fugitive Dust Control Plan. The Fugitive Dust Control Plan ~~shall~~ demonstrate**s** how the following will be implemented and enforced throughout project activities:*

- ~~*Off-road engines shall be retrofitted or upgraded in order to meet the Tier 4 Interim Particulate Emissions standard of 0.008 grams of PM_{10}/horsepower-hour.*~~
- *Unpaved roads shall be controlled at all times by application of chemical dust suppressants or other equivalent methods with a minimum of 90% effectiveness.*
- *Stockpiles shall be controlled at a level of 90% by daily application of water, by covering, or by use of another SJVAPCD approved chemical dust suppressant or other method.*

Level of Significance After Mitigation: Less than significant.

Impact 4.3-3: Expose Sensitive Receptors to Substantial Pollutant Concentrations

Determination of whether project emissions would expose sensitive receptors to substantial pollutant concentrations is a function of assessing potential health risks. Sensitive receptors are facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors. When evaluating whether a development proposal has the potential to result in localized impacts, the nature of the air pollutant emissions, the proximity between the emitting facility and sensitive receptors, the direction of prevailing winds, and local topography must be considered. Figures 4.3-1, 4.3-2, and 4.3-3 show the locations of non-residential sensitive receptors and model receptors (including residential receptors) modeled in the health risk assessment (Appendix D-1 as updated in Appendix D-3).

As described above in Section 4.3.4.3, "Analysis Methodology," the health risk assessment did evaluate the potential health effects of toxic air contaminants including diesel particulate matter and respirable crystalline silica. The estimated health risks from operation of the proposed project are presented in Table 4.3-24, "Unmitigated Project Health Risk Impacts." The receptors for which health risks are provided represent the locations of highest exposure.

Table 4.3-24
Unmitigated Project Health Risk Impacts

Model Receptor #—Type[1]	Excess Cancer Cases per Million People Exposed (Year 1-70)	Excess Cancer Cases perMillion People Exposed (Year 31-100)	Maximum ChronicHazard Index	Maximum Acute Hazard Index
23 ~~228~~ – Residence (MEIR – Cancer, Chronic)	5.05 ~~281~~	2.17	0.01 ~~0.23~~	0.106 ~~0.51~~
25 ~~227~~—Residence (MEIR—Acute ~~Chronic~~)	0.41 ~~207~~	-0.007	0.003 ~~0.31~~	0.18 ~~0.55~~
20 ~~381~~—Off-Site Worker (MEIW—Cancer, Chronic)	-2.39 ~~66~~	-2.10	<0.001 ~~0.66~~	0.05 ~~0.42~~
~~20 382—Off-Site Worker (MEIW—Chronic)~~	~~26~~	-	~~0.82~~	~~0.49~~
6772 ~~340~~—Fence-line Receptor (PMI-Acute) ~~(255867 m E, 4090756 m N)~~	N/A	N/A	N/A	0.85 ~~1.1~~
Significance Threshold	20	20	1.0	1.0
Threshold Exceeded?	No ~~Yes~~	No	No	No ~~Yes~~

Table Source: Table 30 ~~6~~ of Sespe 2026 ~~2022~~
Table Notes: Receptor locations are shown on Figures 4.3-2 and 4.3-3
1. These receptors represent locations of highest exposure.
MEIR = Maximum Exposed Individual Sensitive Receptor; MEIW = Maximum Exposed Individual Off-Site Worker; PMI = Point of Maximum Impact.

As shown in Table 4.3-24, the proposed project will not ~~may~~ result in exceedance of ~~cancer risk and Maximum Acute Hazard Index~~ any of the health risk significance thresholds, which is a less than ~~potentially~~ significant impact on sensitive receptors. The implementation of Mitigation Measure 4.3-2a and Mitigation Measure 4.3-2b would require the implementation of measures to reduce pollutant emissions from off-road diesel equipment and to reduce dust from on-site roads and soil stockpiles. The estimated health risks from operation of the proposed project with mitigation are presented in Table 4.3-25, "Mitigated Project Health Risk Impacts."

Table 4.3-25
Mitigated Project Health Risk Impacts

Model Receptor #—Type[1]	Excess Cancer Cases per Million People Exposed (Year 1-70)	Excess Cancer Cases per Million People Exposed (Year 31-100)	Maximum Chronic Hazard Index	Maximum Acute Hazard Index
23 ~~244~~—Residence (MEIR—Cancer, Chronic)	5.03 ~~< 0~~	2.12	0.008 ~~0.02~~	0.104 ~~0.39~~
25 ~~22~~—Residence (MEIR—Acute)	0.41 ~~< 0~~	0.01	0.002 ~~0.16~~	0.18 ~~0.43~~

Model Receptor #—Type[1]	Excess Cancer Cases per Million People Exposed (Year 1-70)	Excess Cancer Cases per Million People Exposed (Year 31-100)	Maximum Chronic Hazard Index	Maximum Acute Hazard Index
20 ~~381~~—Off-Site Worker (MEIW—Cancer, Chronic)	-2.39 ~~0.50~~	-3.29	<0.001 ~~0.41~~	0.05 ~~0.59~~
6772 ~~340~~—Fence-line Receptor (PMI-Acute)	N/A	N/A	N/A	0.84 ~~0.93~~
Significance Threshold	20	20	1.0	1.0
Threshold Exceeded?	No	No	No	No

Table Source: Sespe 2026~~2021~~.

Table Notes: Receptor locations are shown on Figures 4.3-2 and 4.3-3.

1. These receptors represent locations of highest exposure.
   MEIR: Maximum Exposed Individual Receptor; MEIW: Maximum Exposed Individual Worker; PMI: Point of Maximum Impact.

As demonstrated by Table 4.3-24, the proposed project without mitigation measures would not result in cancer, chronic, or acute health risks to residences or workers above the respective significance thresholds. Likewise, as demonstrated by Table 4.3-25, with the implementation of Mitigation Measure 4.3-2a and Mitigation Measure 4.3-2b, the proposed project would also not result in cancer, chronic, or acute health risks to residences or workers above the respective significance thresholds. ~~The analysis in Appendix B-1 and B-2 indicates that, with mitigation, each residential receptor experienced reduced cancer risk compared to the baseline. As noted in the "Risk Characterization" subsection of Section 4.3.4.3, "Analysis Methodology," estimates of population-wide cancer burden are assessed only if maximum incremental cancer risk greater than zero for residential receptors.~~ Therefore, ~~cancer burden calculations are not necessary for the proposed project, and~~ the potential of the proposed project to expose sensitive receptors to substantial pollutant concentrations would be less than significant with or without mitigation.

Level of Significance Before Mitigation: Less than ~~Potentially~~ significant.

Mitigation Measures: None required. ~~*Implement Mitigation Measure 4.3-2.*~~

~~**Level of Significance After Mitigation:** Less than significant.~~

Impact 4.3-4: Result in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People

The proposed project would involve mining (consisting of excavation and blasting) on the project sites, and the operation of an aggregate plant, ready-mix concrete plant, asphalt plant, and portable recycle plant primarily on the Quarry Site. There are sensitive

receptors located within one mile of the project sites, and therefore odor concerns associated with the asphalt plant cannot be screened out based on distance (Table 4.3-5).

As shown on Figure 4.3-4, "Wind Rose," the predominant wind direction at the project sites is from the northwest. Therefore, the residences to the east and southeast of the Quarry Site would be most likely to experience odors from the proposed project operations.

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact and the variety of odor sources, there are no quantitative or formulaic methodologies to determine the presence of a significant odor impact. As summarized in Table 4.3-5, Air District significance thresholds state that a significant impact would occur if the proposed project received "More than one confirmed complaint per year averaged over a three-year period, or three unconfirmed complaints per year averaged over a three-year period."

The asphalt plant on the Quarry Site can be a potential source of odor due to the hydrocarbons that are emitted from asphaltic concrete at elevated temperatures. This primarily occurs when asphalt concrete materials are overheated during the drying process. The fumes are referred to as "blue smoke" and emissions can be limited by minimizing temperatures at which asphalt concrete materials are dried and stored and through asphalt plant design features, such as recycling exhaust back through the combustion chamber. The proposed asphalt plant would include blue smoke controls with an efficiency of 95%, based on manufacturer specifications outlined in "Blue Smoke Control Permitting Parameters" (Blue Smoke Control ND). Blue smoke control collectors are designed for controlling blue smoke that typically comes from in-plant transferring and loading hot mix asphalt. The collectors are high efficiency cartridge mist collectors. Constructed with a steel housing, the filtration is accomplished in cells with each cell having multiple stages; each more efficient than the previous. The first few stages are metal and designed to be cleaned when necessary. Other later stages may be disposable and replaced when they become plugged.

Baseline conditions at the Plant Site include the same potential sources of odor that would be located at the Plant Site during Stage 1 operations, with the exception that there is currently no hot-mix asphalt plant in operation at the Plant Site. However, a hot-mix asphalt plant did operate at the Plant Site until 2009 and, according to air district records, the operator did not receive any complaints about odors in the past (SJVAPCD 2023). The lack of past complaints indicates that existing mining and processing activities at the project sites have not been a substantial source of odor in the community.

Stage 1 operations propose the continuation of past activities at the Plant Site that did not generate complaints, and, given that the proposed Quarry Site asphalt plant would generate fewer odor producing emissions than the past asphalt plant due to its fuel source being natural gas instead of diesel, and due to the use of new technology to capture 95% of blue smoke emissions, it is not anticipated that Stage 1 operations on the Plant Site could generate odors that would adversely affect a substantial number of people.

During Stage 2 operations at the Quarry Site, blue smoke from the asphalt plant would be a new potential source of substantial odor in the area. However, as discussed above, the asphalt plant would utilize blue smoke control collector technology to control blue smoke. Furthermore, the asphalt plant would be centrally located within the Quarry Site, and the nearest residence to the proposed asphalt plant location would be 0.25 miles to the north, with other residences located at further distances. Because odor dissipates with distance, it is unlikely that substantial odors from the asphalt plant would be generated at these distances. In addition, the areas surrounding the Quarry Site are not densely populated, as shown on Figure 4.3-2, and therefore should any perceptible odor occur outside of the Quarry Site, they would not affect substantial numbers of people. Therefore, it is not anticipated that the operation of the asphalt plant on the Quarry Site could generate odors that would adversely affect a substantial number of people.

Although odor impacts from the operation of the asphalt plant on the Plant Site (i.e., prior 2009 asphalt plant) and Quarry Site are not anticipated, the County conservatively concludes that the impact is potentially significant based solely on the Air District's (2015b) *Guidance for Assessing and Mitigating Air Quality Impacts* presumption that significant odor impacts could occur at sensitive receptors within 1 mile of such plants. Therefore, Mitigation Measure 4.3-4 is recommended to further reduce any potential for odor impacts from the proposed operation of the asphalt plant.

The other proposed uses on the Quarry Site, including excavation and blasting, and operation of a diesel-powered aggregate plant, ready-mix concrete plant, and recycle plant, do not involve odor-generating sources aside from direct exhaust diesel emissions. Because exhaust from diesel-powered equipment dissipate rapidly with distance, and because the Quarry Site spans a relatively large area (~~349~~352.4 acres), with diesel-powered stationary equipment located towards the center of the site (shown on Figure 2-8, "Proposed Plant Site Mining Plan," and Figure 2-9, "Proposed Quarry Site Mining Plan," of Chapter 2, "Project Description," of this Draft EIR) and diesel-powered excavation equipment outside of setbacks from the property lines (described above in Section 2.5.2.2, "Quarry Site Mine Plans," of Chapter 2), it is unlikely that diesel odors generated on the Quarry Site would be perceptible outside of the site. It is also unlikely that diesel exhaust odors would reach the nearby sensitive receptors, the nearest of which

is located 275 feet from the Quarry Site. Therefore, the potential for the operation of the diesel-powered equipment on the Quarry Site to generate odors that would adversely affect a substantial number of people would be less than significant.

Upon the completion of mining on the Plant Site and Quarry Site, the project sites would be reclaimed to open space and open water land uses. Stagnant water can lead to odors. As described in the Plant Site Groundwater Conditions Report (Appendix G-3), groundwater would flow through the reclaimed pond on the Plant Site from the northeast to the southwest. As described in the proposed Surface Mining and Reclamation Plan (SMRP) (Appendix B), the continuous flow of groundwater would minimize the potential occurrence of odor due to stagnation. Similarly, the Quarry Site Groundwater Conditions Report (Appendix G-4) indicates that groundwater would flow through the reclaimed lake from the northeast to the southwest. Additionally, the lake would be approximately 100 feet deep. In a lake this deep, in the summer and winter, the water would become stratified into different temperature layers which do not mix. Twice a year, in the fall and spring, the waters at all layers overturns and equalizes the temperatures at all depths. As described in the proposed SMRP (Appendix B), seasonal vertical movement of water and lateral groundwater movement would preclude stagnation, and therefore, odors due to stagnation would not occur. Therefore, potential of the proposed land uses to generate odors would be less than significant.

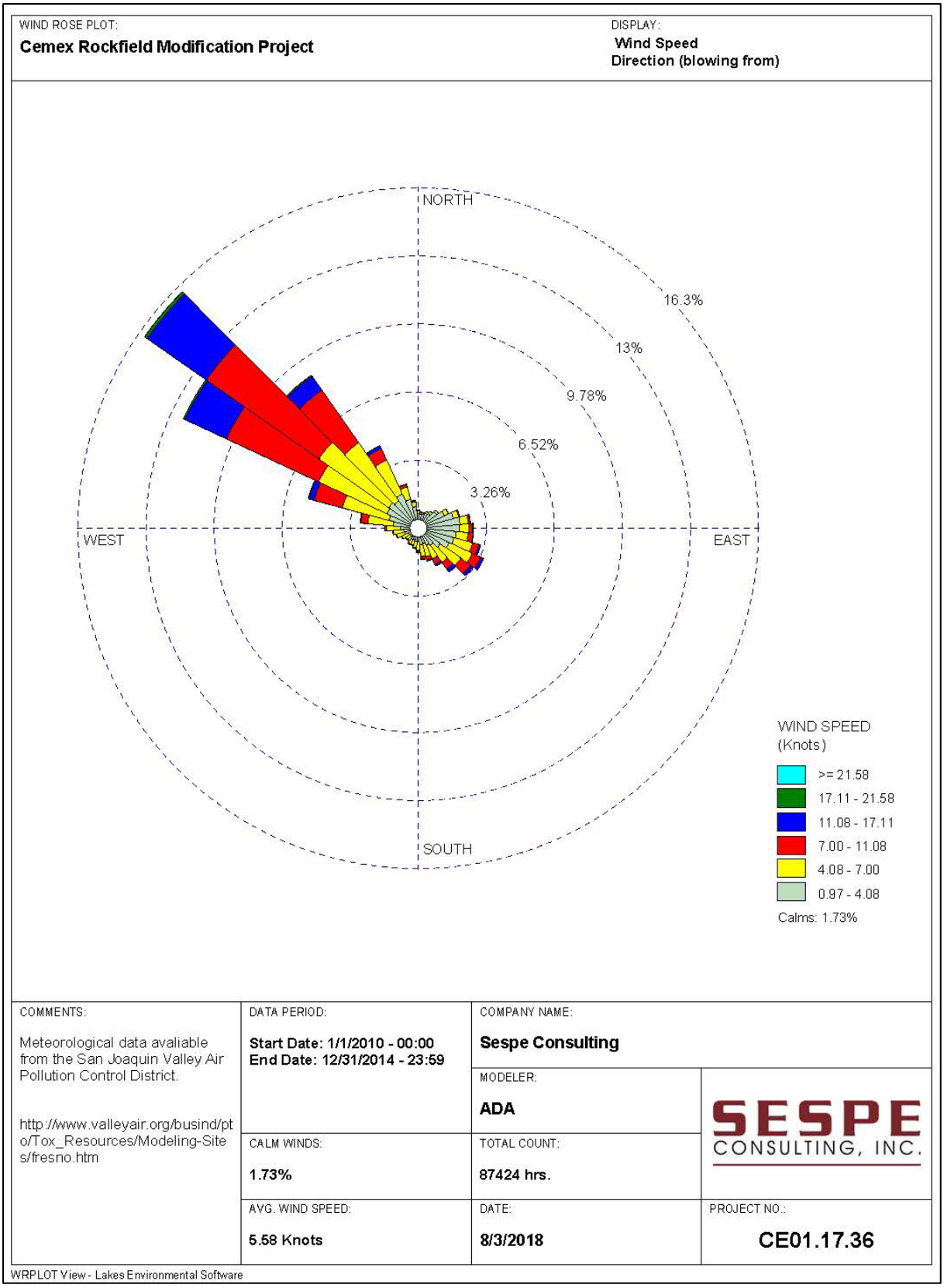
Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.3-4: *Asphalt Plant Emissions Controls*

The following design features shall be incorporated into project plans to mitigate VOC, SVOC, and/or SO_2 emissions:

1) *The type of asphaltic cement produced by on-site plants affects odorous emissions. Some asphaltic cements have lower VOC/SVOC emissions than others. Therefore, asphaltic cements with lower VOC/SVOC emissions, as approved by the SJVAPCD, shall be used to the extent feasible.*
2) *In accordance with SJVAPCD Rule 4309, the Project will implement "periodic burner tune-ups" that may reduce VOC emissions from the asphalt plant. ~~To reduce VOC emissions, periodic burner tune-ups shall be implemented.~~*
3) *~~Prior to issuance of a building permit for the proposed Asphalt Plant, project plans shall show that~~ ~~m~~Mixing drum vapors will be routed back to the dryer burner. Implementation of this provision shall be verified by ~~Imperial~~ Fresno County Building Inspectors prior to authorizing operation.*

Level of Significance After Mitigation: Less than significant.



SOURCE: Sespe Consulting, Inc. 2019

Wind Rose
ROCKFIELD MODIFICATION PROJECT
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Figure 4.3-4

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APPENDIX D-5
REVISED SECTION 4.8, GREENHOUSE GAS EMISSIONS

4.8—GREENHOUSE GAS EMISSIONS

This section of the Draft EIR documents potential impacts associated with greenhouse gas (GHG) emissions and plans for reducing GHG emissions that would occur as a result of the project.

The information in this section is based on a peer review of Applicant-prepared studies and publicly available sources. The Applicant-prepared studies used are:

- *Air Quality, Health Risk, and Climate Change Impact Assessment, CEMEX Rockfield Modification Project, County of Fresno, California*. Prepared by Sespe Consulting, Inc. [Sespe]. December 4, 2019. (Appendix D-1, "Air Quality, Health Risk, and Climate Change Impact Assessment")
- *Rockfield Air Quality Section Addendum No. 2, Revision 2*. CEMEX Rockfield Modification Project. Prepared by Sespe. March 7, 2022. (Appendix D-2, "Addendum to Air Quality, Health Risk, and Climate Change Impact Assessment")
- *Air Quality, Health Risk, and Climate Change Impact Assessment*. CEMEX Rockfield Modification Project. Prepared by Sespe. May 13, 2026. (Appendix D-3, "2026 Air Quality, Health Risk and Climate Change Impact Assessment")

The *Air Quality, Health Risk, and Climate Change Impact Assessment* (Air Quality Assessment) was peer reviewed by County-retained Taylor Environmental Services, Inc. (Taylor Environmental) in September 2020. The peer review comments are on file with the County. In October of 2020, Sespe prepared *Addendum No. 2 (Version 1) to the Air Quality, Health Risk, and Climate Change Impact Assessment*. Comments were provided by Taylor Environmental and Sespe updated the document in response. In December 2020, Taylor Environmental confirmed that *Addendum No. 2 (Version 1)* adequately addressed the peer review comments. In May 2021, comments on *Addendum No. 2 (Version 1)* were provided by Benchmark Resources. Per Benchmark's comments, Sespe provided an updated document (*Addendum No. 2, Revision 1*) in June 2021. Further comments were provided by Benchmark in February 2022. In response, Sespe revised the addendum again in March 2022, creating *Addendum No. 2, Revision 2*. Benchmark confirmed that the *Rockfield Air Quality Section Addendum No. 2, Revision 2* (Addendum) completed in March 2022 adequately addressed all comments and questions. Public comment on the Draft EIR resulted in the May 13, 2026, technical air quality report (Appendix D-3). Appendix D-3 replaces Appendix D-1 and D-2 in their entirety.

4.8.1 Environmental Setting

This section discusses GHGs and climate change issues to provide a context for the analysis of project impacts associated with GHG emissions regarding the Quarry Site and Plant Site (collectively project sites). It also provides a discussion of the actions and phenomena that contribute to climate change and puts into context global, national, and state emissions of GHGs. The term "climate change" is often used interchangeably with the term "global warming;" however, "climate change" is the preferred term because it helps convey that there are other changes in addition to rising temperatures.

4.8.1.1 The Greenhouse Effect and Greenhouse Gases

GHGs trap heat in the atmosphere. Principal GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone ($O_{3)}$, and water vapor (H_2O). Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Man-made GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3), are associated with certain industrial products and processes. The major GHGs emitted by human activities remain in the atmosphere for periods ranging from decades to centuries; therefore, it is expected that atmospheric concentrations of GHGs will continue to rise over the next few decades (U.S. Environmental Protection Agency [EPA] 2021).

Human activity has been increasing the concentration of GHGs in the atmosphere (mostly carbon dioxide from combustion of coal, oil, and gas, and a few other trace gases). Human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C. Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate.

A warming trend from anthropogenic emissions, or human activity, from the pre-industrial period to the present is predicted to persist for centuries to millennia and continue to cause further long-term changes in the climate system, such as sea level rise, with associated impacts. Climate models project robust differences in regional climate characteristics between present-day and global warming of 1.5°C, and between 1.5°C and 2°C. These differences include increases in mean temperature in most land and ocean regions, hot extremes in most inhabited regions, heavy precipitation in several regions, and the probability of drought and precipitation deficits in some regions (Intergovernmental Panel on Climate Change [IPCC] 2018).

The effect each GHG has on climate change is measured as a combination of the volume or mass of its emissions, plus the potential of a gas or aerosol to trap heat in the atmosphere, known as its global warming potential, and is expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of pounds or tons of "carbon dioxide equivalent" (CO_2e).

4.8.1.2 Contributions to Greenhouse Gas Emissions

Global

Anthropogenic GHG emissions worldwide in 2014 totaled approximately 48,892 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) (World Resources Institute 2017). The CO_2 equivalent for a gas is derived by multiplying the tons of the gas by the associated global warming potential, such that MMT CO_2e = (million metric tons of a GHG) x (global warming potential of the GHG). For example, the global warming potential for methane is 21. This means that emissions of 1 million metric tons of methane are equivalent to emissions of 21 million metric tons of CO_2. Six countries—China, the U.S., the Russian Federation, India, Japan, and Brazil—and the European Community accounted for approximately 53 percent of the total 2014 global emissions, approximately 25,831 MMT CO_2e (World Resources Institute 2017).

United States

In 2019, the United States produced 6,558 MMT CO_2e. The primary GHG emitted by human activities in the United States was CO_2, representing approximately 81 percent of total GHG emissions. The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 92 percent of the CO_2 emissions. Since 1990, gross U.S. GHG emissions have increased by 1.8 percent. From year to year, emissions can rise and fall due to changes in the economy, the price of fuel, and other factors. In 2019, U.S. GHG emissions decreased 1.7 percent compared to 2018 levels. The decline was largely driven by the decrease in CO_2 emissions from fossil fuel combustion. The decrease in CO_2 emissions from fossil fuel combustion was a result of a 1 percent decrease in total energy use and reflects a continued shift from coal to less carbon intensive natural gas and renewables in the electric power sector (EPA 2021).

State of California

According to the GHG inventory data compiled by the California Air Resources Board (ARB) for the California Greenhouse Gas Inventory for 2000—2023~~2018~~, California emitted 360.4 ~~425~~ MMT CO_2e of GHGs in 2023, including emission resulting from out-of-state electrical generation (ARB 2025~~2020~~). The largest source of GHG emissions is transportation, which represents tailpipe emissions from on-road vehicles and direct emissions from other off-road mobile sources, followed by industry, electric power

production from both in-state and out-of-state sources, agriculture, and other sources, which include commercial and residential land uses. These primary contributors to California's GHG emissions and their relative contributions in 2023 ~~2018~~ are presented below in Table 4.8-1, "Greenhouse Gas Sources in California."

Table 4.8-1
Greenhouse Gas Sources in California

Source	Percent of Total
Transportation	37.1 ~~39.9~~%
Industrial Uses	18.6 ~~21.0~~%
Electricity Generation [a]	15.9 ~~14.8~~%
Agriculture	8.1 ~~7.7~~%
Residential Uses	7.9 ~~6.1~~%
Commercial Uses	4.1 ~~3.7~~%
Recycling and Waste	2.4 ~~2.1~~%
High global warming potential Substances	5.9 ~~4.8~~%
TOTAL[b]	**100%**

Table Source: ARB **2025** ~~2020~~.
Table Notes:
a. Includes emissions associated with imported electricity
b. Totals may not sum due to rounding.

4.8.1.3 Potential Effects of Human Activity on Climate Change

Globally, climate change has the potential to impact numerous environmental resources though uncertain impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued emissions of GHGs at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Estimated global warming from human activity is currently increasing at 0.2°C (likely between 0.1°C and 0.3°C) per decade due to past and ongoing emissions (IPCC 2018).

The 2018 *Safeguarding California Plan: 2018 Update* report prepared by the California Natural Resources Agency (CNRA 2018) identified anticipated impacts to California due to climate change through extensive modeling efforts. The IPCC's Working Group II Report, *Climate Change 2007: Impacts, Adaptation and Vulnerability*, also describes anticipated impacts on a global scale. Collectively, the two reports indicate general climate changes in California may include the following events:

- Increasing evaporation;
- Rearrangement of ecosystems as species and ecosystems shift northward and to higher elevations;

- Increased frequency, duration, and intensity of conditions conducive to air pollution formation (particularly ozone);
- Reduced precipitation, changes to precipitation and runoff patterns, reduced snowfall (precipitation occurring as rain instead of snow), earlier snowmelt, decreased snowpack, and increased agricultural demand for water;
- Increased experiences of heat waves;
- Increased growing season and increased growth rates of weeds, insect pests and pathogens;
- Inundation by sea level rise, and exacerbated shoreline erosion; and
- Increased incidents and severity of wildfire events and expansion of the range and increased frequency of pest outbreaks (CNRA 2018 and IPCC 2007).

Changes described above are based on the results of several models prepared under different climatic scenarios; therefore, discrepancies may occur between projections and interpretations.

4.8.2 Regulatory Setting

Climate change has become widely recognized as a threat to the global climate, economy, and population. As a result, the climate change regulatory setting – at the federal, state and local levels– is complex and evolving. This section identifies key legislation, executive orders, and seminal court cases related to climate change that are relevant to the project's GHG emissions.

4.8.2.1 Federal

In 2002, President George W. Bush set a national policy goal of reducing the GHG emission intensity (tons of GHG emissions per million dollars of gross domestic product) of the U.S. economy by 18 percent by 2012. The goal did not establish any binding reduction mandates. Rather, the EPA began to administer a variety of voluntary programs and partnerships with GHG emitters in which the EPA partners with industries that produce and utilize synthetic gases to reduce emissions of particularly potent GHGs.

The Bush Administration's approach to addressing climate change was challenged in *Massachusetts et al. v. Environmental Protection Agency* (2007) 549 U.S. 497. In this decision, the U.S. Supreme Court held that the EPA was authorized by the Clean Air Act to regulate CO_2 emissions from new motor vehicles in the event that such emissions contribute to climate change. The Court did not mandate that the EPA enact regulations to reduce GHG emissions but found that the only instances in which the EPA could avoid taking action were if it found that GHGs do not contribute to climate change or if it offered a

"reasonable explanation" as to why the EPA cannot or will not exercise its discretion to determine whether GHGs contribute to climate change.

On December 7, 2009, the EPA issued an endangerment finding under the Clean Air Act, concluding that GHGs threaten the public health and welfare of current and future generations and that motor vehicles contribute to GHG pollution. These findings provide the basis for adopting new national regulations to mandate GHG emission reductions under the federal Clean Air Act.

The following four sections summarize EPA's recent regulatory activities with respect to various types of GHG sources.

Mandatory Greenhouse Gas Reporting Rule

Congress passed the Consolidated Appropriations Act of 2008 (HR 2764) in December 2007, which includes provisions requiring the establishment of mandatory GHG reporting requirements. On September 22, 2009, EPA issued a final rule to require reporting of GHG emissions from all sectors of the United States economy. Beginning on January 1, 2010, fossil fuel and industrial GHG suppliers, motor vehicle and engine manufacturers, and facilities that emit 25,000 metric tons or more of CO_2e per year are required to report GHG emissions data to EPA annually. The first annual reports for the largest emitting facilities, covering calendar year 2010, were submitted to EPA in 2011. This new program covers approximately 85 percent of the nation's GHG emissions and applies to roughly 10,000 facilities. U.S. EPA's new reporting system provides a better understanding of GHG sources and guides development of the best possible policies and programs to reduce emissions. The data also allows the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost-effective methods to reduce emissions in the future.

Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule

The Clean Air Act established the Prevention of Significant Deterioration and Title V programs, which applies to stationary sources (new major sources or major modifications at existing sources for pollutants where the area the source is located is in attainment or unclassifiable with the National Ambient Air Quality Standards [NAAQS]). The Prevention of Significant Deterioration program applicability thresholds are up to 250 tons per year of an attainment pollutant, while the Title V applicability thresholds are up to 100 tons per year of a regulated air pollutant. On June 3, 2010, EPA published a final rule that tailors the applicability criteria that determine whether stationary sources and modification projects become subject to permitting requirements for GHG emissions under the Prevention of Significant Deterioration and Title V programs of the Clean Air Act (tailoring rule). Under the tailoring rule, only the largest sources of GHGs (i.e., those

responsible for 70 percent of the GHG pollution from stationary sources) would be subject to these GHG permitting requirements.

This rule establishes two initial steps of the phase-in and commits the agency to take certain actions on future steps addressing smaller sources, but it excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for GHG emissions until at least April 30, 2016. Under Step 1, effective January 2, 2011, only sources currently subject to the Prevention of Significant Deterioration permitting program would be subject to permitting requirements for their GHG emissions. For these projects, only GHG increases of 75,000 tons per year or more of total GHGs, on a CO_2e basis, would need to determine the Best Available Control Technology for their GHG emissions. Similarly for the Title V program, only sources currently subject to the program due to their criteria air pollutant emissions would be subject to Title V requirements for GHGs. During Step 2 (July 1, 2011 to June 30, 2013), Prevention of Significant Deterioration permitting requirements will apply to new or modified facilities that emit GHG emissions of at least 100,000 tons per year CO_2e and modifications at existing facilities that increase GHG emissions by at least 75,000 tons per year CO_2e. Facilities that emit 100,000 tons per year CO_2e or more will be subject to Title V permitting requirements. Under Step 2, Prevention of Significant Deterioration and Title V permitting requirements would apply to sources generating GHG emissions at the specified levels even if they do not exceed permitting thresholds for any other pollutant.

On June 23, 2014, the U.S. Supreme Court issued its decision in *Utility Air Regulatory Group v. E.P.A.*, (2014) 573 U.S. 302. The Court held that EPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required to obtain a Prevention of Significant Deterioration or Title V permit. The Court also held that Prevention of Significant Deterioration permits that are otherwise required (based on emissions of other pollutants) may continue to require limitations on GHG emissions based on the application of Best Available Control Technology.

EPA and NHTSA Joint Rulemaking for Vehicle Standards

In response to the *Massachusetts v. EPA* U.S. Supreme Court ruling discussed above, the Bush Administration issued an Executive Order on May 14, 2007, directing the EPA, the Department of Transportation (DOT), and the Department of Energy (DOE) to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. On December 19, 2007, the Energy Independence and Security Act of 2007 was signed into law, which requires an increased Corporate Average Fuel Economy (CAFE) standard of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020. The Energy Independence and Security Act requires establishment of interim standards (from 2011 to 2020) that will be the "maximum

feasible average fuel economy" for each fleet. On October 10, 2008, the National Highway Traffic Safety Administration (NHTSA) released a final environmental impact statement analyzing proposed interim standards for passenger cars and light trucks in model years 2011 through 2015. The NHTSA issued a final rule for model year 2011 on March 30, 2009. On June 30, 2009, the EPA granted a waiver for California, discussed in more detail below, for its GHG emission standards for motor vehicles.

On May 7, 2010, the EPA and the NHTSA issued a final rule regulating fuel efficiency and GHG standards for cars and light-duty trucks for model years 2012–2016. This rule required vehicles to achieve the 250 g CO_2/mile (35 mpg if achieved only by fuel efficiency) standard beginning with the model 2016 fleet. This rule was consistent with the target of the Energy Independence and Security Act of 2007. On May 21, 2010, President Obama issued a memorandum to the Secretaries of Transportation and Energy, and the Administrators of the EPA and the NHTSA calling for establishment of additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, in 2011, the EPA and the NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks, which applies to vehicles from model year 2014 through 2018. EPA and NHTSA have adopted standards for CO_2 emissions and fuel consumption, respectively, tailored to each of three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to EPA, this program will reduce GHG emissions and fuel consumption for affected vehicles by 6 to 23 percent. Additionally, in 2012, EPA and NHTSA approved GHG and fuel economy standards of 163 g CO_2/mile (i.e., 54.8 mpg if achieved only by fuel efficiency) for light duty vehicles from model year 2017 through 2025. Fuel efficiency standards for heavy-duty pickup trucks and vans built in model years 2030-2035 were finalized by NHTSA in 2024 (NHTSA 2024).

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 includes the following key measures, which would aid in the reduction of national GHG emissions:

1) Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
2) Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by Model Year 2020; directs National Highway Traffic Safety Administration to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.

3) Prescribe or revise standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Additional provisions of the Energy Independence and Security Act address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

4.8.2.2 State

Legislation, Regulations, and Executive Orders

California's legislation, regulations, and executive orders pertaining to climate change are summarized in Table 4.8-2, "California Climate Change Legislation," Table 4.8-3, "California Climate Change Regulations," and Table 4.8-4, "California Climate Change Executive Orders."

Table 4.8-2
California Climate Change Legislation

Date	Legislation	Description
October 2023	Senate Bill 253 (SB 253) and 261 (SB 261)	SB 253 and SB 261 require public and private companies doing business in California to disclose their carbon emissions and climate-related financial risks. The Climate Corporate Data Accountability Act (SB 253) requires large businesses operating in California to publicly report their greenhouse gas emissions. The Climate-Related Financial Risk Act (SB 261) mandates that companies disclose the threats they face as a result of climate change.
September 16, 2022	Assembly Bill 1279 (AB 1279) (Muratsuchi, Chapter 337, Statutes of 2022)	AB 1279 establishes the policy of the state to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045 statewide anthropogenic GHG emissions are reduced at least 85 percent below 1990 levels. The bill requires ARB to ensure that Scoping Plan updates identify and recommend measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable CO_2 removal solutions and carbon capture, utilization, and storage (CCUS) technologies. The 2022 Climate Change Scoping Plan was adopted by ARB in December 2022 consistent with AB 1279. The Scoping Plan is discussed later in this section.

Date	Legislation	Description
September 16, 2022	Senate Bill 905 (SB 905) (Caballero, Chapter 359, Statutes of 2022)	SB 905 requires ARB to create the Carbon Capture, Removal, Utilization, and Storage Program to evaluate, demonstrate, and regulate CCUS and carbon dioxide removal (CDR) projects and technology.
September 2, 2022	Senate Bill 846 (SB 846) (Dodd, Chapter 239, Statutes of 2022)	SB 846 extends the Diablo Canyon Power Plant's sunset date by up to five additional years for each of its two units and seeks to make the nuclear power plant eligible for federal loans. The bill requires that the California Public Utilities Commission (CPUC) not include and disallow a load-serving entity from including in their adopted resource plan, the energy, capacity, or any attribute from the Diablo Canyon power plant.
September 16, 2022	Senate Bill 1020 (SB 1020) (Laird, Chapter 361, Statutes of 2022)	SB 1020 adds interim renewable energy and zero carbon energy retail sales of electricity targets to California end-use customers set at 90 percent in 2035 and 95 percent in 2040. It accelerates the timeline required to have 100 percent renewable energy and zero carbon energy procured to serve state agencies from the original target year of 2045 to 2035. This bill requires each state agency to individually achieve the 100 percent goal by 2035 with specified requirements. This bill requires the CPUC, California Energy Commission (CEC), and ARB, on or before December 1, 2023, and annually thereafter, to issue a joint reliability progress report that reviews system and local reliability.
September 16, 2022	Senate Bill 1137 (SB 1137) (Gonzales, Chapter 365, Statutes of 2022)	SB 1137 prohibits the development of new oil and gas wells or infrastructure in health protection zones, as defined, except for purposes of public health and safety or other limited exceptions. The bill requires operators of existing oil and gas wells or infrastructure within health protection zones to undertake specified monitoring, public notice, and nuisance requirements. The bill requires ARB to consult and concur with the California Geologic Energy Management Division (CalGEM) on leak detection and repair plans for these facilities, adopt regulations as necessary to implement emission detection system standards, and collaborate with CalGEM on public access to emissions detection data.
September 16, 2022	Senate Bill 1075 (SB 1075) (Skinner, Chapter 363, Statutes of 2022)	SB 1075 requires ARB, by June 1, 2024, to prepare an evaluation that includes: policy recommendations regarding the use of hydrogen.

Date	Legislation	Description
September 16, 2022	Assembly Bill 1757 (AB 1757) (Garcia, Chapter 341, Statutes of 2022)	AB 1757 requires the California Natural Resources Agency (CNRA), in collaboration with ARB, other state agencies, and an expert advisory committee, to determine a range of targets for natural carbon sequestration, and for nature-based climate solutions, that reduce GHG emissions in 2030, 2038, and 2045 by January 1, 2024. These targets must support state goals to achieve carbon neutrality and foster climate adaptation and resilience.
September 30, 2022	Senate Bill 1206 (SB 1206) (Skinner, Chapter 884, Statutes of 2022)	SB 1206 mandates a stepped sales prohibition on newly produced high- global warming potential (GWP) HFCs to transition California's economy toward recycled and reclaimed HFCs for servicing existing HFC-based equipment. Additionally, SB 1206 also requires ARB to develop regulations to increase the adoption of very low-, i.e., GWP < 10, and no-GWP technologies in sectors that currently rely on higher-GWP HFCs.
September 23, 2021	Senate Bill 27 (SB 27) (Skinner, Chapter 237, Statutes of 2021)	SB 27 requires CNRA, in coordination with other state agencies, to establish the Natural and Working Lands Climate Smart Strategy by July 1, 2023. This bill also requires ARB to establish specified CO_2 removal targets for 2030 and beyond as part of its Scoping Plan.
September 23, 2021	Senate Bill 596 (SB 596) (Becker, Chapter 246, Statutes of 2021)	SB 596 requires ARB, by July 1, 2023, to develop a comprehensive strategy for the state's cement sector to achieve net-zero-emissions of GHGs associated with cement used within the state as soon as possible, but no later than December 31, 2045. The bill establishes an interim target of 40 percent below the 2019 average GHG intensity of cement by December 31, 2035.
2019	Senate Bill 576 (SB 576) (Umberg, Chapter 374, Statutes of 2019)	SB 576 mandates that the Ocean Protection Council develop and implement a coastal climate adaptation, infrastructure, and readiness program to improve the climate change resiliency of California's coastal communities, infrastructure, and habitat.
2019	Assembly Bill 65 (AB 65) (Petrie-Norris, Chapter 347, Statutes of 2019)	This bill requires the State Coastal Conservancy, when it allocates any funding appropriated pursuant to the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018, to prioritize projects that use natural infrastructure in coastal communities to help adapt to climate change.
2018	Senate Bill 100 (SB 100) (De León, Chapter 312, Statutes of 2018)	SB 100 mandates that the CPUC, CEC, and ARB plan for 60% of total retail sales of electricity in California to come from eligible renewable energy resources and zero- carbon resources by December 31, 2045. This updated RPS preempts the ARB's 33% by 2020 goal mandated by Senate Bill X1-2.

Date	Legislation	Description
2018	Assembly Bill 2127 (AB 2127) (Ting, Chapter 365, Statutes of 2018)	This bill requires the CEC, working with ARB and the CPUC, to prepare and biennially update a statewide assessment of the electric vehicle charging infrastructure needed to support the levels of electric vehicle adoption required for the state to meet its goals of putting at least 5 million zero-emission vehicles on California roads by 2030 and of reducing emissions of GHGs to 40% below 1990 levels by 2030. The bill requires the CEC to regularly seek data and input from stakeholders relating to electric vehicle charging infrastructure.
2018	Senate Bill 30 (SB 30) (Lara, Chapter 614, Statutes of 2018)	This bill requires the Insurance Commissioner to convene a working group to identify, assess, and recommend risk transfer market mechanisms that, among other things, promote investment in natural infrastructure to reduce the risks of climate change related to catastrophic events, create incentives for investment in natural infrastructure to reduce risks to communities, and provide mitigation incentives for private investment in natural lands to lessen exposure and reduce climate risks to public safety, property, utilities, and infrastructure. The bill requires the policies recommended to address specified questions.
July 26, 2017	Assembly Bill 617 (Christina Garcia, Chapter 136, Statutes of 2017)	Companion to Cap-and-Trade Program: Establishes a groundbreaking program to measure and reduce air pollution from mobile and stationary sources at the neighborhood level in the communities most impacted by air pollutants. Requires the ~~Air Resources Board (~~ARB~~)~~ to work closely with local air districts and communities to establish neighborhood air quality monitoring networks and to develop and implement plans to reduce emissions. The focus on community-based air monitoring and emission reductions will provide a national model for enhanced community protection.
July 26, 2017	Assembly Bill 398 (Eduardo Garcia, Chapter 135, Statutes of 2017)	Cap-and-Trade Program Extension: Extends and improves the Cap-and-Trade Program, which will enable the state to meet its 2030 emission reduction goals in the most cost-effective manner. Furthermore, extending the Cap-and-Trade Program will provide billions of dollars in auction proceeds to invest in communities across California.
September 19, 2016	Senate Bill 1383 (Lara, Chapter 395, Statutes of 2016)	Short-lived Climate Pollutants: Establishes statewide reduction targets for short-lived climate pollutants.
September 8, 2016	Assembly Bill 197 (Eduardo Garcia, Chapter 250, Statutes of 2016)	GHG Regulations: Prioritizes direct emission reductions from large stationary sources and mobile sources.

Date	Legislation	Description
September 8, 2016	Senate Bill 32 (Pavley, Chapter 249, Statutes of 2016)	GHG emission reduction target for 2030: Establishes a statewide GHG emission reduction target of 40% below 1990 levels by 2030.
October 8, 2015	Senate Bill 379	Local Climate Adaptation: Requires cities and counties to include climate adaptation and resiliency strategies in the safety elements of their general plans.
October 7, 2015	Senate Bill 350 (De León, Chapter 547, Statutes of 2015)	Clean Energy and Pollution Reduction Act of 2015: Establishes targets to increase retail sales of renewable electricity to 50% by 2030 and double the energy efficiency savings in electricity and natural gas end uses by 2030.
September 21, 2014	Senate Bill 605 (Lara, Chapter 523, Statutes of 2014)	Short-lived climate pollutants: Requires the State ARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants by January 1, 2016.
September 21, 2014	Senate Bill 1275, (De León, Chapter 530, Statutes of 2014)	Charge Ahead California Initiative: Establishes a State goal of 1 million zero-emission and near-zero-emission vehicles in service by 2020. Amends the enhanced fleet modernization program to provide a mobility option. Establishes the Charge Ahead California Initiative requiring planning and reporting on vehicle incentive programs and increasing access to and benefits from zero-emission vehicles for disadvantaged, low-income, and moderate-income communities and consumers.
September 21, 2014	Senate Bill 1204 (Lara, Chapter 524, Statutes of 2014)	California Clean Truck, Bus, and Off-Road Vehicle and Equipment Technology Program: Creates the California Clean Truck, Bus, and Off-Road Vehicle and Equipment Technology Program funded by the Greenhouse Gas Reduction Fund for development, demonstration, precommercial pilot, and early commercial deployment of zero- and near-zero emission truck, bus, and off-road vehicle and equipment technologies, with priority given to projects benefiting disadvantaged communities.
September 28, 2013	Assembly Bill 8 (Perea, Chapter 401, Statutes of 2013)	Alternative fuel and vehicle technologies: funding programs: Extends until January 1, 2024, extra fees on vehicle registrations, boat registrations, and tire sales in order to fund the AB 118, Carl Moyer, and AB 923 programs that support the production, distribution, and sale of alternative fuels and vehicle technologies and air emissions reduction efforts. The bill suspends until 2024 ARB's regulation requiring gasoline refiners to provide hydrogen fueling stations and appropriates up to $220 million of AB 118 money to create a hydrogen fueling infrastructure in the State.
September 28, 2013	Assembly Bill 1092 (Levine, Chapter 410, Statutes of 2013)	Building standards: electric vehicle charging infrastructure: Requires the Building Standards Commission to adopt mandatory building standards for the installation of future electric vehicle charging infrastructure for parking spaces in multifamily dwellings and nonresidential development.

Date	Legislation	Description
September 30, 2012	Senate Bill 535 (De León, Chapter 830, Statutes of 2012)	Greenhouse Gas Reduction Fund and Disadvantaged Communities: Requires the California Environmental Protection Agency to identify disadvantaged communities; requires that 25% of all funds allocated pursuant to an investment plan for the use of moneys collected through a Cap-and-Trade ~~p~~Program be allocated to projects that benefit disadvantaged communities and 10% of those 25% be used within disadvantaged communities; and requires the Department of Finance to include a description of how these requirements are fulfilled in an annual report.
September 30, 2012	Assembly Bill 1532 (J. Perez, Chapter 807, Statutes of 2012)	Greenhouse Gas Reduction Fund in the Budget: Requires the Department of Finance to develop and submit to the Legislature an investment plan every three years for the use of the Greenhouse Gas Reduction Fund; requires revenue collected pursuant to a market-based compliance mechanism to be appropriated in the Annual Budget Act; requires the department to report annually to the Legislature on the status of projects funded; and specifies that findings issued by the Governor related to "linkage" as part of a market-base compliance mechanism are not subject to judicial review.
April 12, 2011	Senate Bill X1-2 (Simitian, Chapter 1, Statutes of 2011)	Governor Edmund G. Brown, Jr. signed Senate Bill X1-2 into law to codify the ambitious 33% by 2020 goal. SBX1-2 directs California Public Utilities Commission's Renewable Energy Resources Program to increase the amount of electricity generated from eligible renewable energy resources per year to an amount that equals at least 20% of the total electricity sold to retail customers in California per year by December 31, 2013, 25% by December 31, 2016, and 33% by December 31, 2020. The new RPS goals apply to all electricity retailers in the State including publicly owned utilities (POUs), investor-owned utilities, electricity service providers, and community choice aggregators. This new RPS preempts the ARB's 33% Renewable Electricity Standard.
September 29, 2011	Assembly Bill 1504 (Skinner, Chapter 534, Statutes of 2010)	Forest resources and carbon sequestration. Bill requires Department of Forestry and Fire Protection and ARB to assess the capacity of its forest and rangeland regulations to meet or exceed the State's GHG goals, pursuant to AB 32.
September 30, 2008	Senate Bill 375 (Steinberg, Chapter 728, Statutes of 2008)	Sustainable Communities & Climate Protection Act of 2008 requires ARB to develop regional GHG emission reduction targets for passenger vehicles. ARB is to establish targets for 2020 and 2035 for each region covered by one of the State's 18 metropolitan planning organizations.

Date	Legislation	Description
October 14, 2007	Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007)	Alternative Fuels and Vehicles Technologies: The bill would create the Alternative and Renewable Fuel and Vehicle Technology Program, to be administered by the Energy Commission, to provide funding to public projects to develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the State's climate change policies.
August 24, 2007	Senate Bill 97 (Dutton, Chapter 187, Statutes of 2007)	Directs Governor's Office of Planning and Research (OPR) to develop CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions."
July 18, 2006	Assembly Bill 1803 (Committee on Budget, Chapter 77, Statutes of 2006)	Greenhouse gas inventory transferred to ARB from the Energy Commission.
August 21, 2006	Senate Bill 1 (Murray, Chapter 132, Statutes of 2006)	California's Million Solar Roofs plan is enhanced by PUC and CEC's adoption of the California Solar Initiative. SB1 directs PUC and CEC to expand this program to more customers and requiring the State's municipal utilities to create their own solar rebate programs. This bill would require beginning January 1, 2011, a seller of new homes to offer the option of a solar energy system to all customers negotiating to purchase a new home constructed on land meeting certain criteria and to disclose certain information.
September 26, 2006	Senate Bill 107 (Simitian, Chapter 464, Statutes of 2006)	SB 107 directs California Public Utilities Commission's Renewable Energy Resources Program to increase the amount of renewable electricity (Renewable Portfolio Standard) generated per year, from 17% to an amount that equals at least 20% of the total electricity sold to retail customers in California per year by December 31, 2010.
September 27, 2006	Assembly Bill 32 (Núñez, Chapter 488, Statutes of 2006)	California Global Warming Solutions Act of 2006. This bill would require ARB to adopt a statewide GHG emissions limit equivalent to the statewide GHG emissions levels in 1990 to be achieved by 2020. ARB shall adopt regulations to require the reporting and verification of statewide GHG emissions and to monitor and enforce compliance with this program. AB 32 directs Climate Action Team established by the Governor to coordinate the efforts set forth under Executive Order S-3-05 to continue its role in coordinating overall climate policy.
September 12, 2002	Senate Bill 1078 (Sher, Chapter 516, Statutes of 2002)	This bill establishes the California Renewables Portfolio Standard Program, which requires electric utilities and other entities under the jurisdiction of the California Public Utilities Commission to meet 20% of their renewable power by December 31, 2017, for the purposes of increasing the diversity, reliability, public health and environmental benefits of the energy mix.

Date	Legislation	Description
September 7, 2002	Senate Bill 812 (Sher, Chapter 423, Statutes of 2002)	This bill added forest management practices to the California Climate Action Registry members' reportable emissions actions and directed the Registry to adopt forestry procedures and protocols to monitor, estimate, calculate, report and certify carbon stores and carbon dioxide emissions that resulted from the conservation-based management of forests in California.
July 22, 2002	Assembly Bill 1493 (Pavley, Chapter 200, Statutes of 2002)	The "Pavley" bill requires the registry, in consultation with ARB, to adopt procedures and protocols for the reporting and certification of reductions in greenhouse gas emissions from mobile sources for use by the ARB in granting the emission reduction credits. This bill requires the ARB to develop and adopt, by January 1, 2005, regulations that achieve the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks.
October 11, 2001	Senate Bill 527 (Sher, Chapter 769, Statutes of 2001)	This bill revises the functions and duties of the California Climate Action Registry and requires the Registry, in coordination with CEC to adopt third-party verification metrics, developing GHG emissions protocols and qualifying third- party organizations to provide technical assistance and certification of emissions baselines and inventories. SB 527 amended SB 1771 to emphasize third-party verification.
September 30, 2000	Senate Bill 1771 (Sher, Chapter 1018, Statutes of 2000)	SB 1771 establishes the creation of the non-profit organization, the California Climate Action Registry and specifies functions and responsibilities to develop a process to identify and qualify third-party organizations approved to provide technical assistance and advice in monitoring GHG emissions and setting GHG emissions baselines in coordination with CEC. Also, the bill directs the Registry to enable participating entities to voluntarily record their annual GHG emissions inventories. Also, SB 1771 directs CEC to update the State's GHG inventory from an existing 1998 report and continuing to update it every five years.
September 28, 1988	Assembly Bill 4420 (Sher, Chapter 1506, Statutes of 1988)	The California Energy Commission (CEC) was statutorily directed to prepare and maintain the inventory of GHG emissions and to study the effects of GHGs and the climate change impacts on the State's energy supply and demand, economy, environment, agriculture, and water supplies. The study also required recommendations for avoiding, reducing, and addressing related impacts - and required the CEC to coordinate the study and any research with federal, state, academic, and industry research projects.

Table Source: ~~C~~ARB 2022

Table 4.8-3
California Climate Change Regulations

Regulations	Description
General Plan Guidelines Update	The update addresses GHG emissions in CEQA or a Climate Action Plan. The update contains a new chapter on Climate Change. The Safety Element requires adaptation.
Greenhouse Gas Reduction Fund	State program allocating proceeds from Cap-and-Trade auctions to support investments and projects that reduce greenhouse gas emissions throughout California.
Cap & Trade Amendments	The September 2016 amendments to the ~~c~~Cap-and-~~t~~Trade regulation mandated by SB 32 included: • Emission caps for the post-2020 program. • Post-2020 continuation of the allowance price containment reserve linking with Ontario's ~~c~~Cap-and-~~t~~Trade ~~p~~Program. • Compliance with the federal Clean Power Plan Modifications to allowance allocation. The July 2017 amendments to the ~~c~~Cap-and-~~t~~Trade regulation mandated by AB 398 included: • Extension of the ~~c~~Cap-and-~~t~~Trade ~~p~~Program to 2030. • Design changes to the post-2020 carbon market, including a price ceiling, price containment points, additional limits to the number and location of offset credits, and specifics on industry assistance factors. In January 2018 the ~~c~~Cap-and-~~t~~Trade ~~p~~Program was linked with Ontario. The December 2018 amendments to the ~~c~~Cap-and-~~t~~Trade regulation included: • Streamline program requirements and improve program efficiency, including the Compliance Offset Program • De-link from Ontario's ~~c~~Cap-and-~~t~~Trade ~~p~~Program • Reduce offset usage limits • Establish two price tiers and a price ceiling
Low Carbon Fuel Standard (LCFS)	The Low Carbon Fuel Standards (LCFS), approved by ARB on April 23, 2009, are designed to reduce the carbon intensity (CI) of transportation fuels used in California by at least 10% by the year 2020. The regulation entered into full effect on April 15, 2010. In September 2015, the ARB re-adopted the Low Carbon Fuel Standard (LCFS), to settle issues arising from lawsuits. The requirement is still a 10% reduction in the carbon intensity per year of transportation fuels. Amendments were approved in 2011, 2015, 2018, 2019, 2024, 2025 and 2026.
Cap & Trade Offset Protocols	The ARB has adopted six protocols for offset compliance projects. In addition to the original four protocols adopted in 2011, ARB adopted the Mine Methane Capture (MMC) Projects Compliance Offset Protocol in April 2014 and Rice Cultivation Project Compliance Offset Protocol in June 2015.
Cap & Trade Link with Quebec	California linked its ~~c~~Cap-and-~~t~~Trade ~~p~~Program with Quebec's program in January 2014. Linkage allows for the use of compliance instruments from Quebec's GHG emission trading system to meet compliance obligations pursuant to the California Cap-and-Trade Regulation, and the reciprocal approval of compliance instruments issued by California to meet compliance obligations in the external trading program.

Regulations	Description
Building Energy Efficiency Standards	The Energy Commission's 2025 Building Energy Efficiency Standards, which took effect on January 1, 2023, are estimated to reduce 10 million metric tons of GHGs over the next 30 years. The 2022 Energy Code focuses on encouraging electric heat pump technology for space and water heating; establishing electric-ready requirements for single-family homes; expanding solar photovoltaic (PV) system and battery storage standards; and strengthening ventilation standards to improve indoor air quality.
Advanced Clean Cars Standard	The Advanced Clean Cars Program represents a new approach to passenger vehicles – cars and light trucks -- by combining the control of smog- causing pollutants and GHG emissions into a single coordinated package of standards known as the Low Emission Vehicle (LEV) criteria and GHG regulations. The new approach also includes efforts under the Zero-EmissionVehicle (ZEV) Program to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California. Advanced Clean Cars I was adopted in 2012, and Advanced Clean Cars II was adopted in 2022.
Appliance Efficiency Regulations	The Energy Commission's Appliance Efficiency Regulations (Title 20), combined with federal standards, set minimum efficiency levels for energy and water consumption in products, such as consumer electronics, household appliances, and plumbing equipment. The most recent amendments to the Appliance Efficiency Regulations were adopted December 9, 2020, and became effective March 16, 2021.
Cap & Trade Rulemaking Activities	A proposed California cap on GHG emissions and ~~a~~ market-based compliance mechanisms, including compliance offset protocols. OAL approved the rulemaking and filed it with the Secretary of State on December 13, 2011. The regulation ~~will become~~ became effective on January 1, 2012.
~~Low Carbon Fuel Standards (LCFS)~~	~~The Low Carbon Fuel Standards (LCFS), approved by ARB in April 2009, are designed to reduce the carbon intensity (CI) of transportation fuels used in California by at least 10% by the year 2020. CARB adopted amendments to the LCFS regulations in 2011, 2015, 2018, and 2019.~~
Renewable Portfolio Standard	Established in 2002, California's Renewables Portfolio Standard (RPS) requires electricity providers to ensure that renewable energy constitutes a specified minimum portion of their electric load. The current RPS requires investor-owned electric utilities to serve 60% of their electric load by 2030 with renewable energy.
Mandatory Commercial Recycling	This regulation addresses recycling requirements for businesses that generate 4 or more cubic yards of commercial solid waste per week and multifamily residential dwellings with 5 or more units, regardless of the amount of waste generated; local jurisdiction requirements for education, outreach, monitoring and reporting; and CalAsphalt and concrete recycling review. The regulations were approved on May 7, 2012, and were amended by SB 1018 on June 27, 2012.

Table Source: ~~Appendix D-1~~ Sespe 2026, Appendix D-3.

Table 4.8-4
California Climate Change Executive Orders

Date	Executive Order	Description
May 19, 2023	N-8-23	EO-N-8-23 creates an Infrastructure Strike Team to work across state agencies to maximize federal and ~~s~~State funding opportunities for California innovation and infrastructure projects. EO-N-8-23 acknowledges that the state's electric grid must be modernized in order to meet its climate change goals.
October 7, 2020	N-82-20	Governor Newsom signed Executive Order N-82-20 in October 2020 to combat the climate and biodiversity crises by setting a statewide goal to conserve at least 30 percent of California's land and coastal waters by 2030. The Executive Order also instructed the CNRA, in consultation with other state agencies, to develop a Natural and Working Lands Climate Smart Strategy that serves as a framework to advance the state's carbon neutrality goal and build climate resilience. In addition to setting a statewide conservation goal, the Executive Order directed ~~C~~ARB to update the target for natural and working lands in support of carbon neutrality as part of this Scoping Plan, and to take into consideration the Natural and Working Lands Climate Smart Strategy.
September 23, 2020	N-79-20	EO-N-79-20 calls for elimination of new internal combustion passenger vehicles by 2035 and new internal combustion medium and heavy-duty trucks by 2045.
September 20, 2019	N-19-19	EO-N-19-19 requires various state agencies to leverage their existing investments, spending, or state-owned building to further California's climate goals.
September 10, 2018	B-55-18	Governor Brown signed Executive Order B-55-18 in September 2018 to establish a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net negative emissions thereafter.
July 17, 2015	B- 32-15	EO-B-32-15 directs state agencies to develop an integrated freight action plan by July 2016. Among other things, the plan calls for targets for transportation efficiency and a transition to near-zero-emission technologies.
April 29, 2015	B-30-15	EO-B-30-15 sets a GHG emissions target for 2030 at 40% below 1990 levels.
April 25, 2012	B-18-12	EO-B-18-12 calls for significant reductions in state agencies' energy purchases and GHG emissions. The Executive Order included a Green Building Action Plan, which provided additional details and specific requirements for the implementation of the Executive Order
March 23, 2012	B-16-12	EO-B-16-12 orders state agencies to facilitate the rapid commercialization of zero- emission vehicles (ZEVs). The Executive Order sets a target for the number of 1.5 million ZEVs in California by 2025. Also, the Executive Order sets as a target for 2050 a reduction of GHG emissions from the transportation sector equaling 80% less than 1990 levels.

Date	Executive Order	Description
November 14, 2008	S-13-08	EO-S-13-08 directs state agencies to plan for sea level rise and climate impacts through coordination of the State Climate Adaptation Strategy.
January 18, 2007	S-01-07	EO-S-01-07 establishes the 2020 target and Low Carbon Fuel Standard. The EO directs the Secretary of Cal/EPA as coordinator of 2020 target activities and requires the Secretary to report back to the Governor and Legislature biannually on progress toward meeting the 2020 target.
October 18, 2006	S-20-06	EO-S-20-06 establishes responsibilities and roles of the Secretary of Cal/EPA and state agencies in climate change.
April 25, 2006	S-06-06	EO-S-06-06 directs Secretary of Cal/EPA to participate in the Bio-Energy Interagency Working Group and addresses biofuels and bioenergy from renewable resources.
June 1, 2005	S-03-05	EO-S-3-05 establishes GHG emission reduction targets, creates the Climate Action Team and directs the Secretary of Cal/EPA to coordinate efforts with meeting the targets with the heads of other state agencies. The EO requires the Secretary to report back to the Governor and Legislature biannually on progress toward meeting the GHG targets, GHG impacts to California, Mitigation and Adaptation Plans.
December 14, 2004	S-20-04	EO-S-20-04 (Green Buildings) directs state agencies to reduce energy use in state owned buildings by 20% by 2015 and increase energy efficiency.

Table Source: ~~Appendix D-1~~ Sespe 2026, Appendix D-3.

Climate Change Scoping Plan

AB 32 requires ARB to reduce statewide GHG emissions to 1990 levels by 2020. As part of this legislation, ARB was required to prepare and update every five years a "scoping plan" that demonstrates how the state will achieve this goal. The first Scoping Plan was adopted in 2011, and in it, local governments were described as "essential partners" in meeting the statewide goal, recommending a near-term GHG reduction level of 15 percent below 2005 to 2008 levels (depending on when a full emissions inventory is available) by 2020.

The first update to the Scoping Plan was released in 2013 and provided guidance to achieve a long-term target for the transportation sector of 80 percent below 1990 levels by 2050 as mandated by EO B-16-12. ARB adopted the 2017 Climate Change Scoping Plan in December 2017. The 2017 Scoping Plan provides economically viable and technologically feasible strategies for achieving the 2030 target established by EO B-30-15 and codified in SB 32 (40 percent below 1990 levels by 2030), and substantially advance toward the 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels.

To achieve the targets established by AB 1279, ARB adopted its most recent Climate Change Scoping Plan (2022 Scoping Plan) in December 2022. The 2022 Scoping Plan lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045. The 2022 Scoping Plan also evaluates the state's progress toward meeting the near-term target of 40 percent below 1990 levels by 2030. The 2022 Scoping Plan builds on the policies and programs of the 2017 Scoping Plan and presents new strategies to accelerate achievement of the 2030 target as needed to meet the more ambitious long-term targets of AB 1279. These new strategies focus on zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high GWP; providing communities with sustainable options for walking, biking, and public transit; displacement of fossil-fuel fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines); and scaling up new options such as green hydrogen.

The 2022 Scoping Plan aims to rapidly move towards zero-emission transportation (i.e., electrifying cars, buses, trains, and trucks), which constitutes California's single largest source of GHGs. The regulations that impact the transportation sector are adopted and enforced by ~~C~~ARB on vehicle manufacturers and are outside the jurisdiction and control of local governments. The 2022 Scoping Plan accelerates development of new regulations as well as amendments to strengthen regulations and programs already in place.

Included in the 2022 Scoping Plan is a set of Local Actions (2022 Scoping Plan Appendix D) aimed at providing local jurisdictions with recommendations to reduce GHGs and assist the state in meeting the ambitious targets set forth in the 2022 Scoping Plan. This set of Local Actions is not regulatory, is not exhaustive, and does not include everything local governments can implement to support the State's climate goals. It focuses primarily on climate action plans (CAPs) and local authority over new residential development. It includes Section 3 on evaluating plan-level and project-level alignment with the state's Climate Goals in CEQA GHG analyses. In this section, ARB identifies several recommendations and strategies that should be considered for new development in order to determine consistency with the 2022 Scoping Plan. ARB specifically states that Section 3 of Appendix D, which discusses land use plans and development projects, does not address land uses other than residential and mixed-use residential such as industrial. However, ARB plans to explore new approaches for other land use types in the future.

Cap-and Trade Program

Central to achieving the GHG reduction targets described in the previous section is the ~~c~~Cap-and-~~t~~Trade ~~p~~Program, which was introduced by ARB in 2012. Cap-and-~~t~~Trade is a market-based emissions trading system that establishes a declining cap on emissions over

time and distributes tradeable credits under the cap. If an entity in California creates GHG emissions as part of its activities – for example, electricity generation, manufacturing, or fuel refining – it must comply with the program by either purchasing credits (or allowances) or offsets in an amount equal to that level of emissions. An allowance is a tradable credit to emit up to one MT CO_2e while an offset is a tradable compliance instrument that represents a GHG reduction or GHG removal enhancement of one MT CO_2e. Each year, the cap declines, and the number of overall credits (and therefore emissions) decreases accordingly. The use of offsets is limited to a percentage of the entity's compliance obligation, a limit that also declines over time. The ~~c~~Cap-and-~~t~~Trade ~~p~~Program applies economy-wide, setting a limit on approximately 85 percent of California GHG emissions.

The ~~c~~Cap-and-~~t~~Trade ~~p~~Program generates revenue when the allowances to emit pollution are auctioned. Some of the revenue is returned directly to electricity ratepayers, and the rest is dedicated to reducing GHG emissions by making Legislatively directed investments in California with an emphasis on programs or projects that benefit disadvantaged and low-income communities (Berkeley Law).

Table 4.8-5, "Applicability of Scoping Plan Climate Change Policies and Measures," provides a high-level summary of the climate change programs, policies and measures discussed in the 2020 Scoping Plan, including, but not limited to, those identified specifically to achieve the 2030 target, and indicates their applicability to the proposed project.

Table 4.8-5
Applicability of Scoping Plan Climate Change Policies and Measures

Recommended Action	Applies to Proposed Project?
Implement SB 350 by 2030: • Increase the Renewables Portfolio Standard to 50 percent of retail sales by 2030 and ensure grid reliability. • Establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030. • Reduce GHG emissions in the electricity sector through the implementation of the above measures and other actions as modeled in IRPs to meet GHG emissions reductions planning targets in the IRP process. Load-serving entities and publicly- owned utilities meet GHG emissions	No, the project will purchase grid electricity, not administrate it.

Recommended Action	Applies to Proposed Project?
reductions planning targets through a combination of measures as described in IRPs.	
Implement Mobile Source Strategy (Cleaner Technology and Fuels): • At least 1.5 million zero emission and plug-in hybrid light-duty electric vehicles by 2025. • At least 4.2 million zero emission and plug-in hybrid light-duty electric vehicles by 2030. • Further increase GHG stringency on all light-duty vehicles beyond existing Advanced Clean Cars regulations. • Medium- and heavy-duty GHG Phase 2. • Innovative Clean Transit: Transition to a suite of to-be-determined innovative clean transit options. Assumed 20 percent of new urban buses purchased beginning in 2018 will be zero emission buses with the penetration of zero-emission technology ramped up to 100 percent of new sales in 2030. Also, new natural gas buses, starting in 2018, and diesel buses, starting in 2020, meet the optional heavy-duty low-NO_x standard. • Last Mile Delivery: New regulation that would result in the use of low NO_x or cleaner engines and the deployment of increasing numbers of zero-emission trucks primarily for class 3-7 last mile delivery trucks in California. This measure assumes ZEVs comprise 2.5 percent of new Class 3–7 truck sales in local fleets starting in 2020, increasing to 10 percent in 2025 and remaining flat through 2030. • Further reduce VMT through continued implementation of SB 375 and regional Sustainable Communities Strategies; forthcoming statewide implementation of SB 743; and potential additional VMT reduction strategies not specified in the Mobile Source Strategy but included in the document "Potential VMT Reduction Strategies for Discussion."	No, project vehicles are heavy-heavy duty and were not subject to heavy- duty GHG Phase 1 regulations. Thus, they would not be subject to these measures.
Implement SB 100 which increases the Renewable Portfolio Standard (RPS) to 60 percent by 2030, with new interim targets of 44 percent by 2024 and 52 percent by 2027 as well. The bill further requires that all of the ~~s~~State's electricity come from carbon-free resources (not only PRS-eligible ones) by 2045.	No, the project would purchase grid electricity, which would comply with RPS targets.

Recommended Action	Applies to Proposed Project?
Increase stringency of SB 375 Sustainable Communities Strategy: • VMT per capita reduced 25 percent below 2019 levels by 2030, and 30 percent below 2019 levels by 2045	No, the project does not affect SB 375 targets. As discussed in DEIR Section 4.17, "Transportation," of this Draft EIR, although the proposed project appears to generate a high number of VMT, the actual effect of the project on a regional basis is to reduce VMT as compared to the condition in which the project does not exist. With no project and the same demand for aggregate, aggregate users within the region served by the project would need to travel farther on average to obtain aggregate.
Implement California Sustainable Freight Action Plan: • Improve freight system efficiency. • Deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize both zero and near-zero emission freight vehicles and equipment powered by renewable energy by 2030.	No, the project does not affect whether Freight Action Plan can be implemented.
Adopt a Low Carbon Fuel Standard with a CI reduction of 18 percent.	No, the project does not affect ARB's ability to adopt standards.
Implement the Short-Lived Climate Pollutant (SLCP) Strategy by 2030: • 40% reduction in methane and hydrofluorocarbon emissions below 2013 levels • 50% reduction in black carbon emissions below 2013 levels • 75% reduction of organic waste disposal from 2014 levels by 2025, including recovery of at least 20% of edible food for human consumption	No, the project does not affect whether SLCP strategy can be implemented.
Implement AB 398 which extends the post-2020 Cap-and-Trade Program and doubles its stringency with an annual cap decline of 4% per year and an offset limit decline from 8% to 4%, from 2021 to 2030.	No, the project does not affect ~~C~~ARB's ability to implement Cap-and-Trade.
Implement the California 2030 Natural and Working Lands Climate Change Implementation Plan developed in response to SB 859: • Expand the use of natural and working lands for climate mitigation and adaptation by integrating climate goals into state-funded natural and working land conservation, restoration, and management programs. • Significantly increase and improve conservation, restoration, and management of California's natural and working lands, through state programs and other means, to enhance their	No, the project does not affect implementation of the Natural and Working Lands Program.

Recommended Action	Applies to Proposed Project?
resilience to worsening climate impacts, sequester carbon, and reduce GHGs.	
Implement the 2018 Forest Carbon Plan: • Significantly increase the pace and scale of forest and watershed improvements on nonfederal forest lands through incentives and other mechanisms. • Support Federal goals and actions to improve forest and watershed health and resiliency on Federal lands. • Prevent forest land conversions through easements and acquisitions, as well as land use planning. • Innovate solutions for wood products and biomass utilization to support ongoing sustainable forest management activities. • Protect and enhance the carbon sequestration potential and related benefits of urban forests. • Support key research, data management, and accountability needs.	No, the project does not affect the ability to implement the Forest Carbon Plan.
Identify and expand funding and financing mechanisms to support GHG reductions across all sectors.	No, the project does not affect whether ARB can identify and expand funding.

Table Sources: ~~C~~ARB 2022; Sespe Consulting Inc. ~~2019 (Appendix D-1)~~ 2026, Appendix D-3.

CEQA Statutes and Guidelines Amendments

Pursuant to SB 97, Office of Planning and Research (OPR) developed proposed amendments to the CEQA Guidelines (CEQA Amendments) for the feasible mitigation of GHG emissions and their effects, which it first submitted to the Secretary of the CNRA on April 13, 2009. After a public review and comment period, on December 30, 2009, the CNRA adopted the CEQA Amendments, which became effective on March 18, 2010.

The CEQA Amendments for Greenhouse Gas Emissions state in Section 15064.4(a) that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Amendments note that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or other performance-based standards." Section 15064.4(b) provides that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment:

- The extent a project may increase or reduce GHG emissions as compared to the environmental setting.

- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

In addition, Section 15064.7(c) of the CEQA Amendments specifies that "[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence." Similarly, the revision to CEQA Appendix G, "Environmental Checklist Form," which is often used as a basis for lead agencies' selection of significance thresholds, does not prescribe specific thresholds. Rather, Appendix G asks whether the project would conflict with a plan, policy or regulation adopted to reduce GHG emissions; or generate GHG emissions that would significantly affect the environment, indicating that the determination of what is a significant effect on the environment should be left to the lead agency.

Accordingly, the CEQA Amendments do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Amendments emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA.

The CEQA Amendments indicate that lead agencies should consider all feasible means, supported by substantial evidence and subject to monitoring and reporting, of mitigating the significant effects of GHG emissions. As pertinent to the project, these potential mitigation measures, set forth in Section 15126.4(c), may include (1) measures in an existing plan or mitigation program for the reduction of GHG emissions that are required as part of the lead agency's decision; (2) reductions in GHG emissions resulting from a project through implementation of project design features; (3) off-site measures, including offsets, to mitigate a project's emissions; and (4) carbon sequestration measures.

Among other things, the CNRA noted in its Public Notice for these changes that impacts of GHG emissions should focus on the cumulative impact on climate change. The Public Notice states:

> *While the Proposed Amendments do not foreclose the possibility that a single project may result in greenhouse gas emissions with a direct impact on the environment, the evidence before [CNRA] indicates that in most cases, the impact will be cumulative. Therefore, the Proposed Amendments emphasize that the analysis of greenhouse gas emissions should center on whether a project's incremental contribution of greenhouse gas emissions is cumulatively considerable.*

Thus, the CEQA Amendments continue to make clear that the significance of GHG emissions is most appropriately considered on a cumulative level.

4.8.2.3 Local

San Joaquin Valley Air Pollution Control District

San Joaquin Valley Air Pollution Control District (Air District) GHG policy is established in the *District Policy Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency* (Air District 2009). The document outlines a methodology to determine if a project meets the Best Performance Standards for GHG emissions. The document states, "[p]rojects implementing [Best Performance Standards] would be determined to have a less than significant individual and cumulative impact on global climate change and would not require project specific quantification of GHG emissions". When serving as the lead agency, the Air District requires stationary sources that do not comply with Best Performance Standards to demonstrate GHG reductions of 29 percent as compared to Business-as-Usual. Business-as-Usual is defined by the Air District as "The emissions for a type of equipment or operation within an identified class and category projected for the year 2020, assuming no change in GHG emissions per unit of activity as established for the baseline period".

This policy, however, does not apply to the proposed project for a number of reasons. In addition to the fact that Fresno County is the lead agency for this project, ARB regulations adopted in 2010 established a ~~c~~Cap-and-~~t~~Trade ~~p~~Program for the largest sources of GHG emissions in the state. Included in the ~~c~~Cap-and-~~t~~Trade Program are electrical power and fuels that are utilized by the proposed project.

In practice, projects in the SJVAPCD sometimes use the South Coast Air Quality Management District (SCAQMD) 10,000 $MTCO_2e$/yr threshold. For example, the recent environmental impact report for the McKay Point Reservoir Project in Tulare County (Tulare Irrigation District, 2024) compares project emissions to the threshold of 10,000 $MTCO_2e$/yr, consistent with SCAQMD policy. Under CEQA, Fresno County as the lead agency has similarly decided to use the SCAQMD 10,000 $MTCO_2e$/yr as the threshold of significance for GHG for the project. Such lead agency threshold choice is permissible under CEQA, *Cuyama Valley v. County of Santa Barbara 213 Cal. App 4th 1059 (2013).*

Fresno County General Plan

In February 2024, Fresno County updated its General Plan, where the Fresno County Climate Change Vulnerability Assessment identified and mapped communities most at risk to climate change hazards in unincorporated Fresno County (see Figure 19 Social Sensitivity in Fresno County in Appendix C [to the General Plan]).

The *Fresno County General Plan* (Fresno County 2024) Health and Safety Element includes the following policies related to GHG emissions and climate change that apply to the proposed project:

Goal HS-C: To minimize the risk of loss of life, injury, and damage resulting from flood hazards.

Policy HS-C.6: The County shall encourage, as applicable, expansion of stormwater and flood protection infrastructure capacity in order to accommodate changes in precipitation and extreme weather events including establishment or expansion of recharge basins.

Goal HS-G: To improve the sustainability and resiliency of the County through continued efforts to reduce the causes of and ad~~o~~apt to climate change.

Policy HS-G.1: The County shall support plans, standards, regulation, incentives, and investments based on sound science to reduce the impacts of climate change.

Policy HS-G.3: The County shall continue to collaborate with Federal, State, regional, and local agencies, business and property owners, and residents to reduce generation of GHG and other emissions that contribute to climate change and effectively implement climate change adaption policies and programs.

Policy HS-G.9: The County shall identify and protect locations where native species may shift or lose habitat due to climate change impacts (e.g., extreme heat, wildfire and landslides) and consider ecosystem shift when updating conservation and land use plans.

Policy HS-G.13: The County shall undertake a countywide Climate Action Plan (CAP) within two years of the adoption of General Plan Amendment No. 529 (General Plan Review) with the objective of meeting a GHG emissions reduction trajectory consistent with State law (currently codified in Health and Safety Code Section 38566 et seq. [Senate Bill 32] and Executive Order B-55-18).

Fresno Council of Governments Regional Transportation Plan/Sustainable Communities Strategy

The Regional Transportation Plan/Sustainable Communities Strategy (Fresno Council of Governments 2021) develops a regional transportation network that is environmentally sensitive and reduces GHG emissions. New transportation facilities must avoid or fully mitigate all significant impacts on environmentally sensitive areas and natural resources such as minimizing loss of farmland. Increased transportation and facility design is encouraged, along with infill development near existing public transportation, which is intended to reduce vehicle miles traveled (VMT) and the associated GHGs from those mobile emissions. This plan is not applicable to the proposed project because the proposed project does involve changes to existing transportation facilities or development of new transportation facilities.

Fresno Council of Governments Priority Climate Action Plan

The Fresno Council of Governments approved the final Priority Climate Action Plan (PCAP) on February 29, 2024, which includes a regional GHG inventory, a public outreach process, identification and quantification of priority GHG emissions reduction measures, a benefit analysis for low-income and disadvantaged communities, and identification of implementation authorities (Fresno Council of Governments, 2024). The PCAP contains a 2019 GHG emissions inventory that quantifies emissions from the following sources:

- Transportation (including on-road, offroad, and aircraft sources);
- Industrial emissions;
- Energy use (residential and commercial);
- Waste and wastewater;
- Agriculture; and
- Fugitive emissions.

The PCAP scope includes both public and private sources within the County. Thus, emissions from project sources are present in the PCAP inventory. The inventory finds that in Fresno County approximately 13.2 million metric tons (MT) of CO_2e was emitted in 2019, with most emissions coming from the transportation, agriculture, and energy use sectors at 44%, 19%, and 17%, respectively. Of the transportation sector, approximately 40% of the emissions inventory results from on-road sources such as passenger cars and trucks, buses, and delivery vans.

4.8.3 Significance Thresholds and Analysis Methodology

4.8.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact related to GHG emissions if it would:

a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or~~?~~
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.~~?~~

4.8.3.2 Significance Thresholds

South Coast Air Quality Management District (SCAQMD) methodology was used to evaluate whether a project would generate GHG emissions that may have a significant impact on the environment (SCAQMD 2008). ~~SCAQMD methodology was used because~~ It was determined that the San Joaquin Valley Air Pollution Control District methodology is out of date ~~and does not appropriately address emissions covered by the Cap-and-Trade Program~~. The GHG analysis in the Final EIR was revised, as envisioned by CEQA, to address comments on the Draft EIR by several commenters, including the Center for Biological Diversity. In addition, the Draft EIR was released on December 20, 2024 and the comment period closed on March 10, 2025. In the Draft EIR, the GHG analysis relied in part on an analysis used in an EIR certified by Kern County in approving the modification to an oil refinery. That EIR acknowledged that certain GHG emissions related to the consumption of fuel and the use of electricity were offset upstream of those uses pursuant to California's Cap-and-Trade Program. This approach was upheld in a decision by the Fifth District Court of Appeal, which appellate court has jurisdiction over Fresno County, in *Association of Irritated Residents v. Kern County Board of Supervisors*, 17 Cal.App.5th 798 (2017) ("AIR"). However, on June 26, 2025, a new California appellate decision out of Los Angeles County reviewing the use of offsets under the Cap-And-Trade Program as part of an EIR used to evaluate a housing development program was filed by the 2nd District Court of Appeal, *Center for Biological Diversity v. County of Los Angeles*, 112 Cal.App.5th 317 (2025) ("LA County Decision"). The LA County Decision distinguished the AIR Decision and held that Los Angeles County could not rely on the fact that transportation fuels and electricity that would be used as part of the project were subject to the Cap-and-Trade Program. In an abundance of caution, Fresno County decided to revise the GHG analysis in the Draft EIR to conform to the more recent LA County Decision. Accordingly, all emissions, including those involving the consumption of fuel and the use of electricity, are included in determining whether total emissions will exceed the GHG significance threshold of 10,000 $MTCO_2e/yr$.

Based on SCAQMD methodology (SCAQMD 2014, cited in Sespe 2026 ~~2019~~), ~~emissions from sectors that are required to participate in the Cap-and-Trade Program administered by CARB are excluded from the GHG analysis. These sectors include electricity and transportation fuel, which are the energy sources that would be used by all of the proposed project mining, processing, and production operations, with the exception of the proposed asphalt plant, which would be powered by natural gas. For energy sources that are not subject to the Cap-and-Trade Program (i.e., the natural gas-fueled asphalt plant), the screening threshold established by SCAQMD methodology is 10,000 metric tons of CO_{2e} (MT CO_{2e}) per year. In this analysis,~~ GHG emissions from project sources (and here, as noted above, the County includes all GHG emission) ~~not subject to the Cap-and-Trade Program~~ are considered less than significant when:

1) Incremental project emissions ~~sources~~ are less than 10,000 MT CO_{2e} per year; and
2) ~~each~~ Project emissions do not conflict with applicable GHG plans, policies or regulations adopted for the purpose of reducing GHG emissions. ~~source complies with all applicable and feasible best performance standards developed by the Air District (Air District 2012)~~.

4.8.3.3 Analysis Methodology

GHG emissions and global climate change represent cumulative impacts. Maximum annual GHG emissions from proposed construction activities and mining operations were estimated for informational purposes. The general analysis approach was to estimate the total increase in GHG emissions from proposed construction and mining operations activities relative to emissions from existing construction and mining operations activities. Under existing conditions, there are no construction activities on the project site, therefore there are no existing GHG emissions from construction.

~~The analysis also estimates the increase in GHG emissions from fuels used on the project sites that would not be subject to the Cap-and-Trade Program.~~

Because no single project could generate enough GHG emissions to noticeably change the global average temperature, the analysis of the proposed project's potential climate change impacts focuses on the project's contribution to GHG emissions in a cumulative context.

Project Design Features and Assumptions

Table 4.8-6, "Rockfield Modification Project Components of Air Quality and Greenhouse Gas Modelling," summarizes the project features incorporated into the Air Quality Assessment analysis, which are the same as those described in Section 4.3, "Air Quality."

Table 4.8-6
Rockfield Modification Project Components of Air Quality and Greenhouse Gas Modelling

Activity	Description
CONSTRUCTION	
Aggregates Processing Construction	Construction of aggregates processing plant at the Quarry Site. Expectedschedule of 10 months ~~5 days~~.
Grading	Expected schedule of 20 ~~5~~ days.
Paving	Paving of approximately one mile of road. Expected schedule of 10 days.
Site Preparation	Clearing of Quarry Site and site preparation. Expected schedule of 10 days.
RESOURCE RECOVERY AND PROCESSING	
Mining Method	Addition of hard rock mining to Quarry Site activities. Addition of primary crusher and hydraulic shovel in pit. Increased use of excavator and dozer operations, in addition to excavation by hydraulic shovel or front-end loader. Addition of drilling and blasting will be required.
Processing	Extracted resources at the Quarry Site will be processed onsite at the relocated ready-mix concrete and hot-mix asphalt plants starting at phase 2, rather than beingtransported to the Plant Site for processing. Adding processing plant equipment to manufacture sand.
Estimated Annual Aggregates Production	Increase from 1,374,272 tons per year to 3,000,000 tons per year.
Estimated Annual ReadyMix Production	Increase from 189,550 cubic yards per year to 300,000 cubic yards per year.
Estimated Annual Recycle Plant Production	Increase from 25,000 tons per year to 200,000 tons per year.
Estimated Annual Asphalt Plant Production	Increase from 0 tons per year to 500,000 tons per year.
Hours of Operation	6 days per week, Monday through Saturday (For health risk assessment, modeledconservatively as 7 days per week, 12 hours per day. For criteria pollutant emissions, modeled based on maximum hour and day, by activity levels.)

Table Source: Sespe 2026, Appendix D-3 ~~1~~.

The GHG emissions estimates were completed using the same methodology summarized in subsection 4.3.4.3, "Analysis Methodology," of Section 4.3, "Air Quality," of this Draft EIR. However, GHG emissions estimates also included estimates of GHG emissions from project use of electricity. Detailed methodology is provided in the new Air Quality Report (Appendix D-3), which replaces the previous Air Quality Assessment (Appendix D-1) and the associated Addendum (Appendix D-2).

Regional Increment Analysis

In order to accurately address the GHG impact, a regional increment analysis was conducted which characterizes the project's contribution to cumulative regional GHG emissions (see Appendix D-3, Sub-Appendix J). This methodology responds to current regulatory guidance and reflects how aggregate demand and associated emissions are projected and managed at the regional level. The regional increment analysis is based on project activity levels, as well as regional aggregate demand as forecast in the California Department of Conservation Map Sheet 52, as revised to account for current conditions.

As outlined in Map Sheet 52, state and regional planning forecasts indicate that aggregate demand is driven by population growth and overall regional development, rather than by the maximum production capacity of any single facility (Appendix D-3, Sub-Appendix J). Accordingly, while the Project is capable of supplying aggregate to meet regional needs, its operation would not create a net increase in regional aggregate demand beyond that already forecast. Any increase in annual production from the project would be offset by corresponding reductions in production from other facilities serving the same regional market, resulting in no substantial change in total regional output.

Consistent with this framework, the GHG analysis evaluates emissions based on the project's proportional share of regional demand growth, rather than calculating emissions based on continuous operation at maximum throughput. This approach ensures that the project's GHG emissions are attributed in a manner that reflects realistic market conditions and real-world impact.

The regional increment analysis also clarifies the project's role in meeting its share of regional GHG reduction obligations. The project would comply with existing and future regulations governing greenhouse gas emissions, including Air District requirements, statewide climate policies, and new standards adopted during the life of the project. Compliance with these regulatory programs would contribute to reducing cumulative GHG impacts at the regional and statewide level.

Moreover, as analyzed by Peter Berck in his January 2005 Working Paper 994, "A Note on the Environmental Costs of Aggregate" (Appendix D-3, Sub-Appendix B) when regional demand is a constant, the inclusion of additional aggregate quarry locations within the region can reduce total GHG emissions by reducing the average distance aggregates need to be hauled.

By incorporating the regional increment analysis, the GHG impact analysis provides a more accurate, and policy-consistent assessment of the project's greenhouse gas impacts, while aligning the analysis with current forecasting methodologies and regulatory

expectations. Appendix D-3, Sub-Appendix J includes Sespe's regional increment analysis calculations and memo (April 2026). Table 4.8-7 and Table 4.8-8 present the emissions quantified in the regional increment analysis, including the project's increment of anticipated GHG emissions increases in the region for Baseline and project operations.

Use of Renewable Diesel

Project operations emissions from non-employee off-site, on-road vehicles associated with the project were calculated and adjusted (as described below) to reflect the increased share of renewable diesel (RD) in California's diesel fuel pool. As described in Appendix D-3, Sub-Appendix L, RD went from negligible in 2005 to 70% in 2024 and is expected to achieve close to 90% in the future. Based on 2025 reporting, RD has approximately 40% of the carbon intensity of low sulfur diesel fuels and is contributing to reducing the CI of the available ultra-low sulfur diesel available on the market in accordance with the Low Carbon Fuel Standard (LCFS) benchmarks (See Appendix D-3, Sub-Appendix L). Accordingly, project-related non-employee off-site on-road fleet emissions were reduced by the CI reductions established in the LCFS benchmarks between 2016 and 2018 of 2% and from 2016 to 2026 of 18.6% (See Appendix D-3, Sub-Appendix L, Figure 2).

Further, California's in-use off-road diesel fueled fleets regulations require the use of RD. To be reasonably conservative and based on the LCFS benchmark data, an adjustment of 50% was applied to estimated project-related off-road diesel emissions operating onsite (see Appendix L of Appendix D-3).

Baseline GHG Emissions

Baseline emissions were determined based on historical production records for the year 2005 ~~1998~~ and are presented in Table 4.8-7, "Baseline GHG Emissions."

Table 4.8-7
Baseline GHG Emissions

Source	CO_{2e} Emissions (Metric Tons per Year)
Stationary Sources ~~Aggregates Plant~~	0 ~~2,581~~
~~Ready Mix Plant~~	~~261~~
~~Asphalt Plant~~	~~0~~
~~Recycle Plant~~	~~35~~
~~Stockpiles~~	~~0~~
Off-road Engines (onsite)	5,212 ~~4,748~~
On-road Vehicles (onsite)	954 ~~289~~
Non-employee On-road Vehicles (offsite) (regional increment, see App J of App D-3)	5,359 ~~5,743~~
Quarrying	0

Source	CO_{2e} Emissions (Metric Tons per Year)
Blasting	0
Material Handling	0
Employee Trips	293 ~~291~~
Electricity	1,919
Total	**13,737 ~~13,948~~**

Table Source: Sespe 2026 Appendix D-3 ~~D-1~~. As noted in Appendix D-3, baseline on-road and off-road emission estimates used 2005 production data; however, Year 2018 emission factors from EMFAC were applied for on-road sources, and Year 2012 emission factors from EMFAC were applied for off-road sources; this produces lower baseline values than if Year 2005 emissions from EMFAC were applied.
Table Notes: CO_{2e} = carbon dioxide equivalent

Proposed Project GHG Emissions

Construction Phase

CalEEMod was used to estimate construction phase emissions. Project construction is expected to take place for 10 months ~~days~~ and would emit approximately 197 ~~49~~ MT CO_2e. Annualized over 30-years, this would generate approximately 6.6 metric tons of CO2e per year.

Operation Phase

Table 4.8-8, "Maximum Annual Operation Phase GHG Emissions," summarizes the maximum annual estimated GHG emissions that would be emitted from the operation of the proposed project.

Table 4.8-8
Maximum Annual Operation Phase GHG Emissions

Source	CO_2e Emissions (Metric Tons per Year)
Stationary Sources ~~Aggregates Plant~~	8,394 ~~5,489~~
~~Ready Mix Plant~~	~~413~~
~~Asphalt Plant~~	~~7,549~~
~~Recycle Plant~~	~~281~~
Stockpiles	0
Off-road Engines (onsite)	4,236 ~~8,471~~
On-road Vehicles (onsite)	927 ~~228~~
On-road Vehicles (offsite) (regional increment, see App D-3, Sub-App J)	6,068 ~~9,207~~
Quarrying	0
Blasting	0
Material Handling	0

Source	CO_2e Emissions (Metric Tons per Year)
Employee Trips	302 ~~174~~
Electricity	1,373
Total:	21,301 ~~31,812~~

Table Source: Sespe 2026, Appendix D-3 ~~D-1~~.
Table Notes: CO_2e = carbon dioxide equivalent;
Totals may not sum due to rounding.

4.8.4 Project Impacts and Mitigation Measures

Impact 4.8-1: Generate GHG Emissions, Either Directly or Indirectly, That May Have a Significant Impact on the Environment

The maximum annual estimated increase in emissions relative to baseline conditions from the construction and operation of the proposed project are presented for informational purposes in Table 4.8-9, "Proposed Project GHG Emissions Including Cap-and-Trade Program Sources." Phase 1 and Phase 2 operations under the proposed project would emit GHGs from electricity use, fuel burned in vehicle and construction and mining equipment engines, and electricity and fuel burned in stationary facilities (i.e., natural gas used by hot-mix asphalt plant and diesel fuel used by aggregate processing plant, ready-mix cement plant, and recycling plant). During the reclamation phase of the proposed project, the project sites would be converted to open space land use which would require minimal use of fuels and would not be a substantial source of GHG emissions.

As shown in Table 4.8-9, the maximum annual increase GHG emissions generated by the proposed project does not exceed~~s~~ the 10,000 MT CO_{2e} per year ~~screening~~ significance threshold. Additionally, ~~However,~~ while electricity and transportation fuel suppliers and importers are required to report emissions under the Cap-and-Trade Program administered by ~~C~~ARB, ~~which is designed to reduce GHG emissions as needed to achieve emissions reductions described in related planning documents which primarily consists of the Scoping Plan,~~ these sources were included in the analysis to determine if the 10,000 MT CO_{2e} per year GHG threshold is exceeded. ~~Thus, the emissions reductions from electricity and transportation fuel usage would occur at a level in the energy supply chain above that as compared to the proposed project, which would have no choice but to use fuel and electricity having GHG intensities that are consistent with the Scoping Plan.~~ With emissions from electricity and transportation fuels sources, the Project increment would still be less than the 10,000 MT CO_{2e} per year significance threshold.

Table 4.8-9
Proposed Project GHG Emissions Including Cap-and-Trade Program Sources

Activity	CO_2e (MT/yr)
Baseline Condition	13,737 ~~13,948~~
Construction Phase (Maximum Year)	6.6 ~~49~~
Operation Phase	21,301 ~~31,812~~
Project Emissions ~~Including Cap-and-Trade Program Sources~~ (Operation Phase minus Baseline Condition)[1]	7,564 ~~17,864~~

Table Source: Sespe 2026, Appendix D-3 ~~D-2~~
Table Notes:
1. Sources of emissions subject to the Cap-and-Trade Program consist of electricity and transportation fuel usage that would occur at a level in the energy supply chain above the proposed project, and which therefore would have no choice but to use fuel and electricity having GHG intensities that are consistent with the Scoping Plan.

CO_2e = carbon dioxide equivalent.
MT/year = metric tons per year.

~~As described in Chapter 2, "Project Description," of this Draft EIR, the proposed project would involve the development of a new hot-mix asphalt plant that would be fueled by natural gas. Specifically, natural gas would be used to fuel the asphalt plant dryer and oil heater. The emissions from this natural-gas fueled facility are not covered by the Cap-and-Trade Program. Table 4.8-10, "GHG Emissions from Project Sources Not Included in Cap-and-Trade Program," provides the estimated maximum annual emissions resulting from operation of the proposed asphalt plant.~~

~~**Table 4.8-10**~~
~~**GHG Emissions from Project Sources Not Included in Cap-and-Trade Program**~~

~~Activity~~	~~CO_2e (MT/yr)~~
~~Operation Phase (Stationary Combustion in Asphalt Dryer)~~	~~7,598~~
~~Operation Phase (Stationary Combustion in Asphalt Oil Heater)~~	~~910~~
~~Baseline Condition~~	~~0~~
~~Project Impact (Operation Phase Minus Baseline Condition)~~	~~8,508~~
~~Screening Threshold~~	~~10,000~~
~~Project Impact Exceeds Screening Criteria?~~	~~No~~

~~**Table Source:** Appendix D-2; SCAQMD 2014.~~
~~**Table Notes:** CO_2e = carbon dioxide equivalent.~~
~~MT/year = metric tons per year.~~

~~As shown in Table 4.8-9 above, GHG emissions from the asphalt plant would be less than the screening threshold. The significance thresholds also require that sources not subject to the Cap-and-Trade Program implement feasible best performance standards. There is one draft Air District best performance standard relevant to the proposed asphalt plant that has not been adopted and is provided for disclosure purposes. The Air District~~

~~developed this draft best performance standard for new continuous mix asphalt dryers that would result in GHG emissions reductions of between 13.1 and 17.2 percent less than asphalt plants that do not implement this best performance standard. The best performance standard is:~~

- ~~Non-Caltrans projects: Warm mix asphalt with premium efficiency electric motors and exhaust fan operated with a variable frequency speed control (24.1 lb CO_{2e} or equivalent).~~
- ~~Caltrans project: Separate dryer drum and mixing chamber and the use of heat from the dryer drum to mix aggregate and binder (3 percent decrease in fuel consumption, 9 percent increase in production) with premium efficiency electric motors and exhaust fan operated with a variable frequency speed control (25.3 lb CO_{2e} or equivalent) (Air District 2010).~~

~~Certain features in the draft best performance standard are not feasible and this is the reason why the document has remained draft since it was published 13 years ago. For instance, the mix design is not always under control of the operator. Thus, the warm-mix only feature is infeasible. Feasible items from the best performance standard are recommended in Mitigation Measure 4.8-1.~~

~~In summary, each of the facilities and operations under the proposed project, with the exception of the asphalt plant, would rely on an energy source subject to the Cap-and-Trade Program. GHG emissions from the asphalt plant would be less than the SCAQMD GHG screening criteria. In addition, the significance thresholds also require that sources not subject to the Cap-and-Trade Program implement feasible best performance standards. Mitigation Measure 4.8-1 would require implementation of all feasible features in the Air District best performance standards. For these reasons, the potential of the proposed project to result in a cumulatively considerable contribution to global climate change would be less than significant with mitigation.~~

Level of Significance Before Mitigation: Less than ~~Potentially~~ significant.

Mitigation Measure: None required.

~~Mitigation Measure 4.8-1:~~ *~~Asphalt Plant Performance Standards~~*

~~The asphalt plant dryer drum and mixing chamber shall be separated so that dryer exhaust gases do not contact liquid asphalt and premium efficiency electric motors with exhaust fan motors shall be equipped with variable frequency speed control. These specifications shall be shown on project plans and submitted to the San Joaquin Air Pollution Control District as part of the application for Authority to Construction the proposed asphalt plant. Air district staff will verify implementation of this measure as~~

~~*part of the permit review process.*~~

~~**Level of Significance After Mitigation:** Less than significant.~~

Impact 4.8-2: Consistency With Applicable GHG Plans, Policies, or Regulations.

Legislation (Table 4.8-2) and regulations (Table 4.8-3) are summarized in Section 4.8.2, above. One of the functions of the AB 32 Scoping Plan, which does contain policies, is to inventory and summarize the various regulations/laws that apply to emitters of GHGs. The Scoping Plan is also informed by Executive Orders (Table 4.8-4) that have been regularly incorporated with each iteration of the Scoping Plan. Thus, consistency with the Scoping Plan is consistent with the laws, regulations, and executive orders listed in Tables 4.8-2, 4.8-3, and 4.8-4, above and further documented in the updated air quality technical report, Appendix D-3 (Sespe 2026).

The proposed project's consistency with the three types of policies (local, Scoping Plan, and Executive Order B-30-15, which is the next Scoping Plan GHG target [40 percent less than 1990 levels in 2030]) is summarized as follows:

- **A Local Jurisdiction's Qualified Climate Action Plan or GHG Reduction Plan:** As detailed in Section 4.8.2.3, above, no local climate action or GHG reduction plans apply to the proposed project.
- **AB 32 Scoping Plan:** As described in Section 4.8.2.2, above, AB 32 requires that the ARB adopt regulations to require the reporting and verification of statewide GHG emissions and monitor and enforce compliance with the program. The Scoping Plan is the most recent GHG policy document issued by ARB in accordance with AB 32. In the preparation of this Report, the emissions from fuel and electricity subject to AB 32 and SB 32 were no longer used to reduce GHG emissions for purposes of determining the level of significance given recent CEQA case law.
- Fresno County utilizes the SCAQMD significance threshold as noted in Section 4.8.2.3, above. This threshold of 10,000 $MTCO_2e$/yr has been previously utilized to determine significance in an approved EIR within the SJVAPCD. ~~Although the Air District has not formally approved GHG performance measures, staff has considered measures such as a Percent Emissions Reduction Target which could be set at the overall level of reduction required by the Scoping Plan, or the level of reduction required from the industrial sector/source category by the AB 32 Scoping Plan.~~ Currently, in accordance with AB 32, the SCAQMD has set an interim GHG screening threshold of 10,000 $MTCO_{2e}$ per year for industrial projects. As shown in Table 4.8-9, GHG emissions for industrial uses proposed by the project, including those subject to the Cap-and-Trade Program, ~~that would use~~

~~an energy source not subject to the Cap-and-Trade Program (i.e., the asphalt plant)~~ would be approximately 7,564 ~~8,508~~ MT CO_{2e} per year, which is below the ~~screening~~ significance threshold. As such, the proposed project is consistent with the emissions reductions targets outlined in the Scoping Plan. In addition, as summarized in Table 4.8-5, the project would not conflict with the climate change policies and measures discussed in the Scoping Plan.

- **Executive Order B-30-15 Goals:** The proposed project is consistent with the Executive Order B-30-15 goals which apply to the fuel and electricity sectors as a whole. The fuels and electricity used by the proposed project facilities, equipment, and vehicles would be subject to the Cap-and-Trade Program as well as the Scoping Plan and related control measures (e.g., renewable energy portfolio, low carbon fuel standard) that are applied higher up in the energy supply chain. There is no plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs specifically from mining projects. Thus, the sources that are affected by such plans and policies would be consistent with those plans, policies, and/or regulations by virtue of using fuels and electricity that has been produced for consumption within California.

As described above~~under Impact 4.8-1~~, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, ~~during the reclamation phase of the proposed project, the project sites would be converted to open space land use, which would require minimal use of fuels and would not be a substantial source of GHG emissions, and therefore would not conflict with any GHG plans, policies, or regulations.~~ Refer to Sespe 2026, Appendix D-3, Sub-Appendix E for additional plans, policies, and regulations that have been reviewed to ensure the Project would not result in a conflict.

In summary, the proposed project would comply with all applicable GHG impact plans, policies, and regulations. This impact would be less than significant.

Level of Significance: Less than significant.

Mitigation Measures: None required.

APPENDIX E-6
WRA SUPPLEMENTAL BIOLOGICAL RESOURCES EVALUATION MEMORANDUM

wra
Environmental
Consultants

MEMORANDUM

TO:	Bruce Steubing (Benchmark)	**FROM:**	Nick Brinton-McBean (WRA)
CC:		Hope Kingma (WRA)	
DATE:	July 29, 2026		
SUBJECT:	WRA Task Summary, CEMEX Rockfield Quarry Draft Environmental Impact Report		

WRA was asked by Benchmark Resources to assist with responding to public comments received regarding the Draft Environmental Impact Report (DEIR) for the Cemex Rockfield Quarry Modification Project (EIR 7763). Specifically, WRA was asked to assist with responding to comments related to environmental or biological concerns which had been submitted by commentors during the public circulation period.

WRA received bracketed comment letters and reviewed approximately 25 letters while providing draft responses for comments on a variety of environmental topics. Topics that WRA was asked to address included: nesting and non-nesting birds, fish, potential effects to offsite aquatic habitats within the San Joaquin River, bats and general wildlife species. WRA reviewed the comment letters and formatted corresponding individual responses. In addition to the individual responses, WRA was asked to prepare draft "collective responses" to address more generalized topics including potential effects to the San Joaquin River (Response 12), offsite wildlife (Response 13), Swainson's Hawk (Response 14), non-nesting birds (Response 15), and salmonids (Response 16). These collective responses were drafted to address the broader concerns of multiple commentors who had raised similar concerns regarding these topics rather than to each individual commentor.

WRA also provided the following recommendations or general updates to the DEIR:

1. Updated Table 4.4-1 and expanded the CNDDB database search to include any species that appeared in the expanded database search and to evaluate their potential presence within the Project Area.
2. Revised Mitigation Measures 4.4-1a, 4.4-1b, and 4.4-1c to provide more expansive methodologies to survey for special-status species. Revisions to these measures included additional surveys or more expansive surveys and avoidance to ensure species are absent or more robustly avoided during certain timeframes.
3. Provided an evaluation and impact analysis for bats in Section 4.4 of the DEIR for the bat species identified in Table 4.4-1 with a moderate potential to occur. Included a new Mitigation Measure 4.4-1d to reduce potential effects to bats to less than significant levels. No significant impact would result from the implementation of the new mitigation measure.
4. Recommended adding a discussion of the San Joaquin River Restoration Program to the setting section of biological resources.

Discussion

During assistance with drafting responses to comments described above, WRA biologists expanded the California Natural Diversity Database (CNDDB) search from the 4-quadrangle search presented in the DEIR to a 9-quadrangle search based on the collective approach by WRA's team in collaboration with Benchmark. Public comments were received concerning the age as well as the distance of the CNDDB search. While the previous search covered an approximately 5-mile radius which is justifiable and adequate for standard CEQA reviews, when the CNDDB search was updated in November 2025, it was expanded to a 9-quad search. Given the additional size of the search area, additional species were listed on the CNDDB results for the larger search area that were not identified in the search area used for the DEIR. Any new species which both (1) met the criteria of a special-status species and (2) appeared in the 9-quad search, were included in the updated Table 4.4-1 and were subsequently evaluated by WRA for their potential to occur within the Project Area and documented in the updated Table 4.4-1 that WRA understands will be included as errata in the Final EIR. Evaluation of the species' potential to occur was provided by WRA biologists with at least 10 years of experience with the taxa they were asked to evaluate.

Formally listed species can require specific protocol level surveys or may require take authorization from the governing agency. However, all of the additional species added to table 4.4-1 were either unlikely to occur, or if they did have potential to occur, carried a similar listing status to those species already evaluated. Any potential project impacts to such species would be similarly reduced to a less than significant level without additional mitigation measures or take authorization requirements. Considering that the additional species evaluated for this Project area are all of similar status and the same mitigation measures would reduce the impact to those species to less than significant levels, the addition of such species does not constitute a new significant impact nor increase the severity of identified impacts that were previously evaluated.

As an example, the original DEIR found that great egret and great blue heron were both present and the DEIR prescribed a measure to reduce impacts to less than significant levels. When the updated 9-quad search was completed, snowy egret was identified and included in the list of evaluated species. Snowy egret uses similar habitats, nests colonially (similarly to great blue heron and great egret), and can co-occur in the same nesting colonies with great egret and great blue heron. Therefore, in the revised Table 4.4-1, snowy egret was ascribed a moderate potential to occur. The same mitigation measure prescribed for great blue heron and great egret would also be applicable to reduce impacts to snowy egret to less than significant levels. Therefore, inclusion of species such as this example as well as all of the other species added to the revised Table 4.4-1 does not constitute a new significant impact that was not previously evaluated or increase the severity of identified impacts previously evaluated, and does not represent significant new information as defined in CEQA Guidelines section 15088.5.

Regarding WRA's evaluation of bats, several bat species were previously identified in the DEIR as having potential to occur onsite. The additional species added to Table 4.4-1 included several bat species, including one bat species with potential to occur in the Project Area. To address potential impacts to bats, WRA recommended adding a mitigation measure to the EIR through errata to reduce potential impacts to bats that were previously identified, as well as those identified by WRA during preparation of the Final EIR. A WRA bat biologist reviewed the species identified in the DEIR and in this Final EIR, then drafted a measure requiring a bat specific survey prior to construction. Conducting this survey would identify if bats were roosting onsite where they may potentially be affected by project activities. The measure recommends avoidance during times of

year when maternity roosting may occur, and prescribes steps to minimize effects to bats outside of the maternity roosting season, thereby reducing potential impacts to all bats and roosts to a less than significant level.

APPENDIX G-7
200-YEAR FLOOD HAZARD ANALYSIS – QUARRY SITE

200-YEAR HYDRAULIC ANALYSIS
FOR
CEMEX ROCKFIELD
MODIFICATION PROJECT
QUARRY SITE

April 21, 2026

Wayne W. Chang, MS, PE 46548

ChangConsultants

Civil Engineering ◦ Hydrology ◦ Hydraulics ◦ Sedimentation

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APPENDIX A

200-Year HEC-RAS Analysis

MAP POCKET

HEC-RAS Work Map

INTRODUCTION

Cemex's Rockfield Modification Project (Project) is located along the east side of the San Joaquin River and west side of North Friant Road in the Friant community of Fresno County. The Project consists of an existing Plant Site at 13475 North Friant Road and an existing Quarry Site approximately 2.0 miles to the north (see Figure 1, Location Map after this report text). Chang Consultants prepared the October 15, 2020 report, *Hydraulic Analyses for Cemex Rockfield Modification Project*. The report determined that the Project complies with the applicable local and federal floodway and floodplain regulations. In addition, the report's hydraulic analysis showed that the San Joaquin River's easterly channel bank contains the 100-year flow, which prevents flow from entering the adjacent Quarry Site, i.e., the easterly channel bank along the Quarry Site is not subject to overtopping during a 100-year event.

The 100-year event is the typical standard used for engineering design and analyses as well as the basis for FEMA's floodplain mapping. This report contains a 200-year hydraulic analysis of the San Joaquin River adjacent to the Quarry Site to assess an even more extreme and rare probability flow event. A 200-year event is a flood that statistically has a 0.5-percent chance of occurring in any given year.

HYDRAULIC ANALYSIS

The US Army Corps of Engineers' HEC-RAS model was used for the 200-year hydraulic analysis. The model is similar to the one from the October 2020 report, but based on the higher flow rate. The input parameters are as follows. The existing condition cross-sections were created from 2-foot contour interval topographic mapping (NAVD 88 vertical datum) flown for the project on November 6, 2018 (see the HEC-RAS Work Map in the map pocket). A site investigation was performed that confirmed the topographic mapping is representative of existing conditions. Cemex recently raised the northerly portion of the berm separating the San Joaquin River and Quarry Site up to approximately 4 feet with compacted fill. The compacted fill was placed over an existing perimeter road from HEC-RAS cross-section 14 to 20 and prevents the 200-year flood from entering the quarry pit. The fill area is delineated on the HEC-RAS Work Map and on relevant HEC-RAS cross-section plots in Appendix A. Topographic mapping from 2026 was prepared to reflect the berm fill in the model. Encroachments were included along some cross-sections to define ineffective flow areas, i.e., to separate active versus inactive flow areas for modeling purposes. The starting downstream water surface elevation was based on normal depth. The normal depth slope was determined by calibrating the 100-year analysis. The normal depth slope was adjusted in the 100-year analysis until the base flood elevation was matched. This slope was used in the 200-year analysis.

The roughness coefficients were assigned based on a site investigation and review of aerial photographs. The roughness coefficients vary from 0.030 to 0.075. A value of 0.030 was used in areas with minimal vegetation and subject to base flow. Higher values were used to represent areas containing low to dense vegetation and trees.

FEMA's January 20, 2016, *Flood Insurance Study, Fresno County, California,* provides the 10-year (10-percent), 50-year (2-percent), 100-year (1-percent), and 500-year (0.2-percent) flow rates

for the San Joaquin River below Friant Dam (attached). The 200-year (0.5-percent) flow rate is not provided, so was estimated from a log-probability plot of the four known flow rates. The log-probability plot is attached after this report text and determined a 200-year flow rate of 95,000 cubic feet per second (cfs).

The existing condition 200-year San Joaquin River HEC-RAS results are included in Appendix A. The 100-year water surface elevations from the October 2020 report and current 200-year water surface elevations are summarized in Table 1. The Quarry Site is from cross-section 2 to 20. The table shows that the 200-year water surface elevations along the Quarry Site are 1.80 to 2.82 feet higher than the 100-year water surface elevations. Appendix A contains graphical plots of each cross-section. The cross-sections are looking downstream, so the Quarry Site is on the left side of the cross-sections. The plots show that the 200-year flow is contained within the easterly channel bank along the entire Quarry Site.

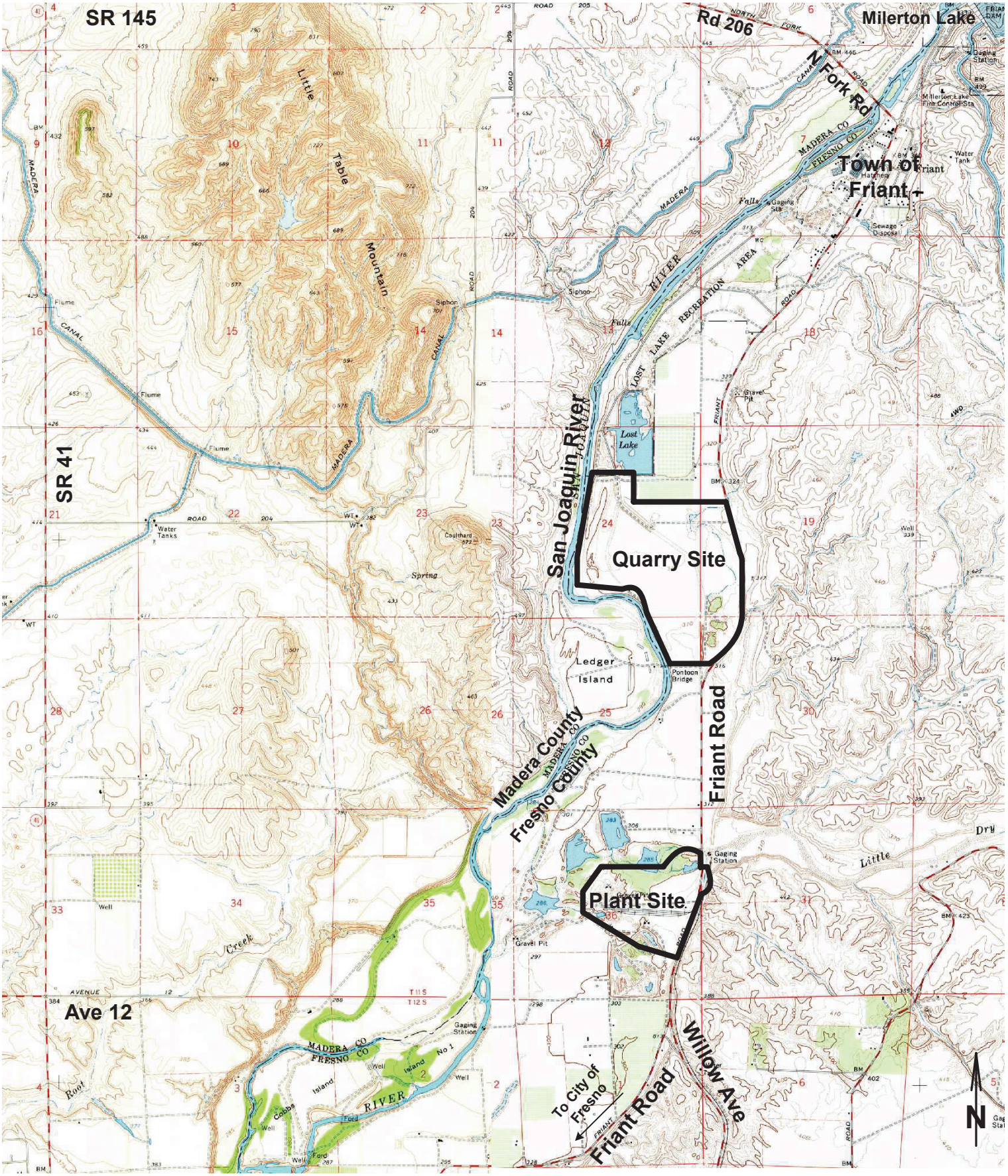
Cross-Section	100-Year WSE, ft	200-Year WSE, ft	200- minus 100-Year WSE, ft
22	313.36	316.18	2.82
21	311.29	313.43	2.14
20	311.37	313.78	2.41
19	310.91	313.11	2.20
18	310.15	312.25	2.10
17	310.01	312.13	2.12
16	309.60	311.87	2.27
15	308.99	311.19	2.20
14	308.74	310.84	2.10
13	308.41	310.43	2.02
12	307.72	309.60	1.88
11	307.08	308.88	1.80
10	306.41	308.48	2.07
9	306.07	308.12	2.05
8	305.23	307.39	2.16
7	305.31	307.47	2.16
6	305.27	307.43	2.16
5	305.24	307.40	2.16
4	305.19	307.34	2.15
3	305.14	307.30	2.16
2	305.02	307.19	2.17
1	305.00	307.17	2.17

Table 1. 100- and 200-Year Water Surface Elevations

CONCLUSION

The October 15, 2020 report, *Hydraulic Analyses for Cemex Rockfield Modification Project,* provided a 100-year San Joaquin River hydraulic analysis for the Quarry Site. The 100-year event

is the typical standard for engineering design, analyses, and FEMA floodplain mapping. The report showed that the 100-year flow will not enter the Quarry Site. This report contains a 200-year HEC-RAS hydraulic analysis in order to assess a more extreme and rare probability flow event. The results show that the 200-year flow is also contained within river's east bank and will not enter the Quarry Site.



USGS Friant 7.5' Quad

CEMEX
Rockfield Modification Project
Friant Road, Fresno County
Figure 1
Location Map

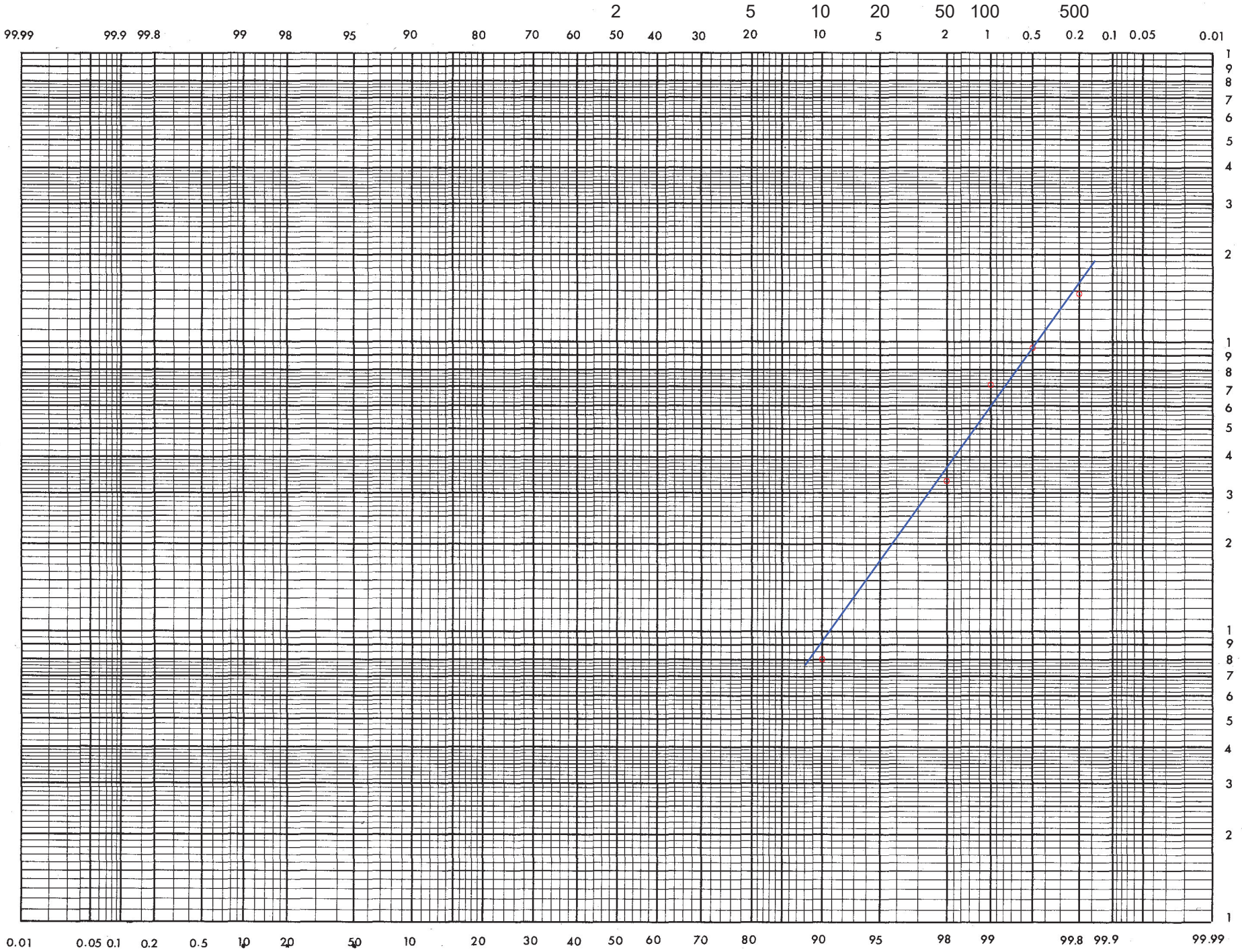
Table 6: Summary of Discharges (continued)

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet per Second) 10-percent	2-percent	1-percent	0.2-percent
SAN JOAQUIN RIVER (continued)					
[redacted]	1,676	8,000	[redacted]	[redacted]	146,000
SPRR DRAINAGE					
At North Avenue	0.99	30	70	160	300
TIVY VALLEY CREEK					
At Piedra Avenue	2.2	70	210[1]	265[1]	320[1]
At Weldon Avenue	2.0	70	550	1,100	1,660
WARTHAN CREEK					
At confluence with Los Ganos Creek	116.0	2,300	6,400	8,900	17,100
WELDON CREEK					
At Piedra Road	1.1	60	260	520	820
WOOTEN CREEK					
At Alta Main Canal	15.9	150[1]	170[1]	175[1]	175[1]
At AT&SF Railway	12.7	350	690[1]	995[1]	1,340[1]
Downstream of Friant-Kern Canal	11.7	345	800	1,115	1,360

[1] Decrease due to excessive overbank losses upstream

Log-Probability

probability x 3 log cycles



Q200=95,000 cfs

APPENDIX A

200-YEAR HEC-RAS ANALYSIS

HEC-RAS Plan: Exist Cond River: RIVER-1 Reach: Reach-1 Profile: 200-Year

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	22	200-Year	95000.00	291.01	316.18		317.80	0.002409	10.38	9374.04	484.89	0.38
Reach-1	21	200-Year	95000.00	291.01	313.43		316.85	0.002689	17.74	7973.41	464.27	0.66
Reach-1	20	200-Year	95000.00	291.00	313.78		315.49	0.002934	12.06	9915.68	656.07	0.45
Reach-1	19	200-Year	95000.00	291.01	313.11		314.97	0.001095	11.43	9661.94	634.12	0.43
Reach-1	18	200-Year	95000.00	291.00	312.25	306.18	314.55	0.001459	13.42	9530.03	662.63	0.51
Reach-1	17	200-Year	95000.00	291.01	312.13	305.26	313.87	0.001999	11.16	9580.89	667.06	0.44
Reach-1	16	200-Year	95000.00	291.01	311.87		313.02	0.002565	8.83	11203.45	816.71	0.37
Reach-1	15	200-Year	95000.00	291.00	311.19	303.09	312.32	0.002073	8.66	11570.14	855.85	0.37
Reach-1	14	200-Year	95000.00	291.01	310.84		311.95	0.000814	8.64	11941.46	839.16	0.35
Reach-1	13	200-Year	95000.00	291.00	310.43		311.64	0.001189	9.01	11167.63	794.42	0.38
Reach-1	12	200-Year	95000.00	291.01	309.60		311.11	0.002577	10.02	9960.06	801.63	0.44
Reach-1	11	200-Year	95000.00	290.12	308.88		310.22	0.003003	9.75	10837.14	871.89	0.43
Reach-1	10	200-Year	95000.00	290.10	308.48	304.23	309.56	0.001392	9.73	14355.90	1499.07	0.44
Reach-1	9	200-Year	95000.00	287.90	308.12	302.16	308.96	0.001592	8.43	14964.34	1697.86	0.37
Reach-1	8	200-Year	95000.00	286.50	307.39		307.88	0.001106	6.89	17891.57	2028.32	0.29
Reach-1	7	200-Year	95000.00	286.50	307.47		307.57	0.000191	2.00	38388.85	2756.68	0.09
Reach-1	6	200-Year	95000.00	287.61	307.43		307.50	0.000119	2.10	44283.95	3028.92	0.09
Reach-1	5	200-Year	95000.00	287.61	307.40		307.47	0.000113	2.40	46011.38	3258.41	0.10
Reach-1	4	200-Year	95000.00	287.61	307.34		307.43	0.000119	2.70	40300.45	2906.28	0.11
Reach-1	3	200-Year	95000.00	287.60	307.30		307.38	0.000197	2.63	40102.77	3396.53	0.11
Reach-1	2	200-Year	95000.00	287.60	307.19		307.31	0.000237	3.79	36273.89	3376.12	0.16
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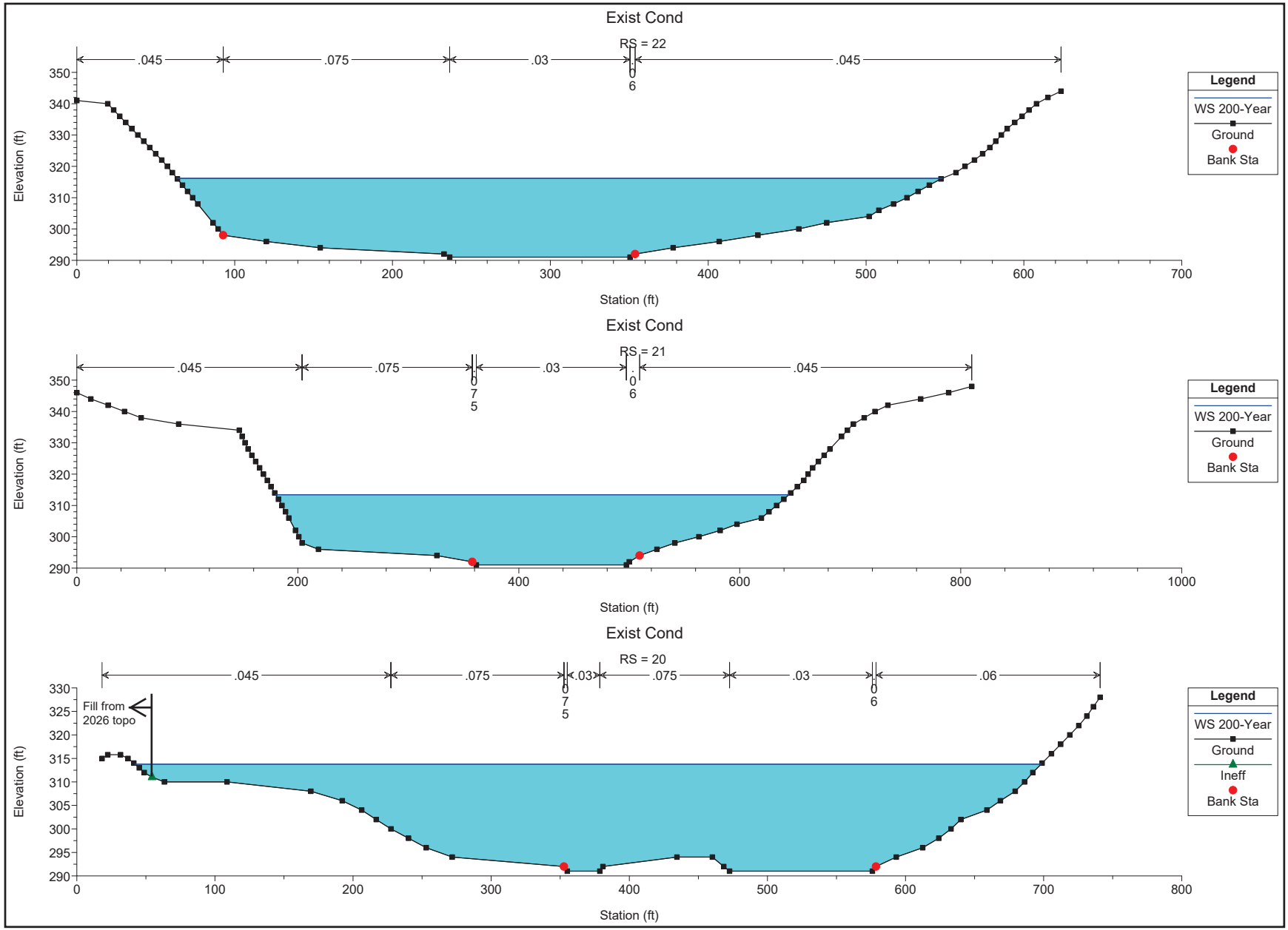
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Bank Sta
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Legend
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Ground
Bank Sta
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Legend
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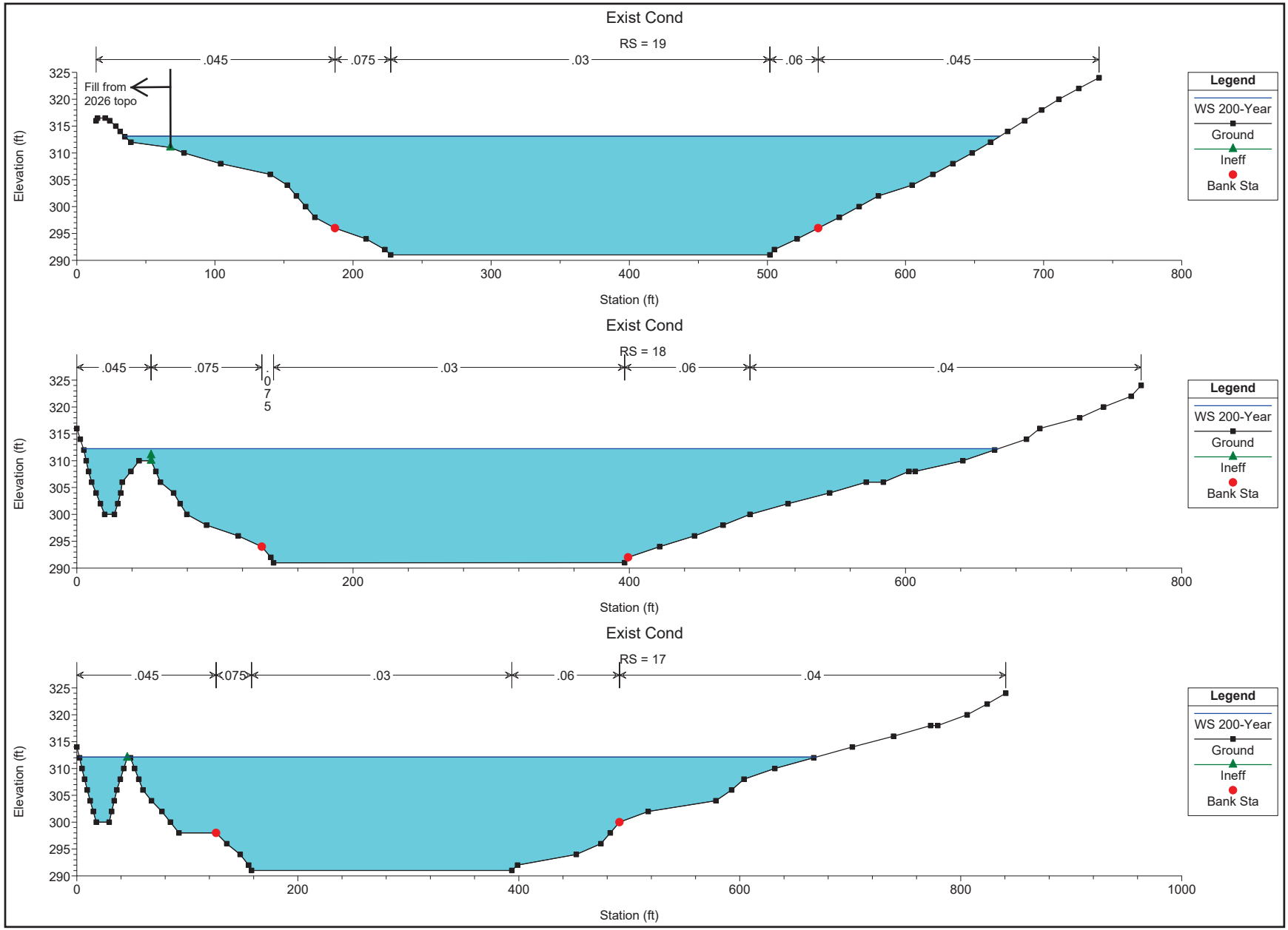
Ground
Ineff
Bank Sta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Ground
Ineff
Bank Sta
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Station (ft)
Legend
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Ground
Ineff
Bank Sta
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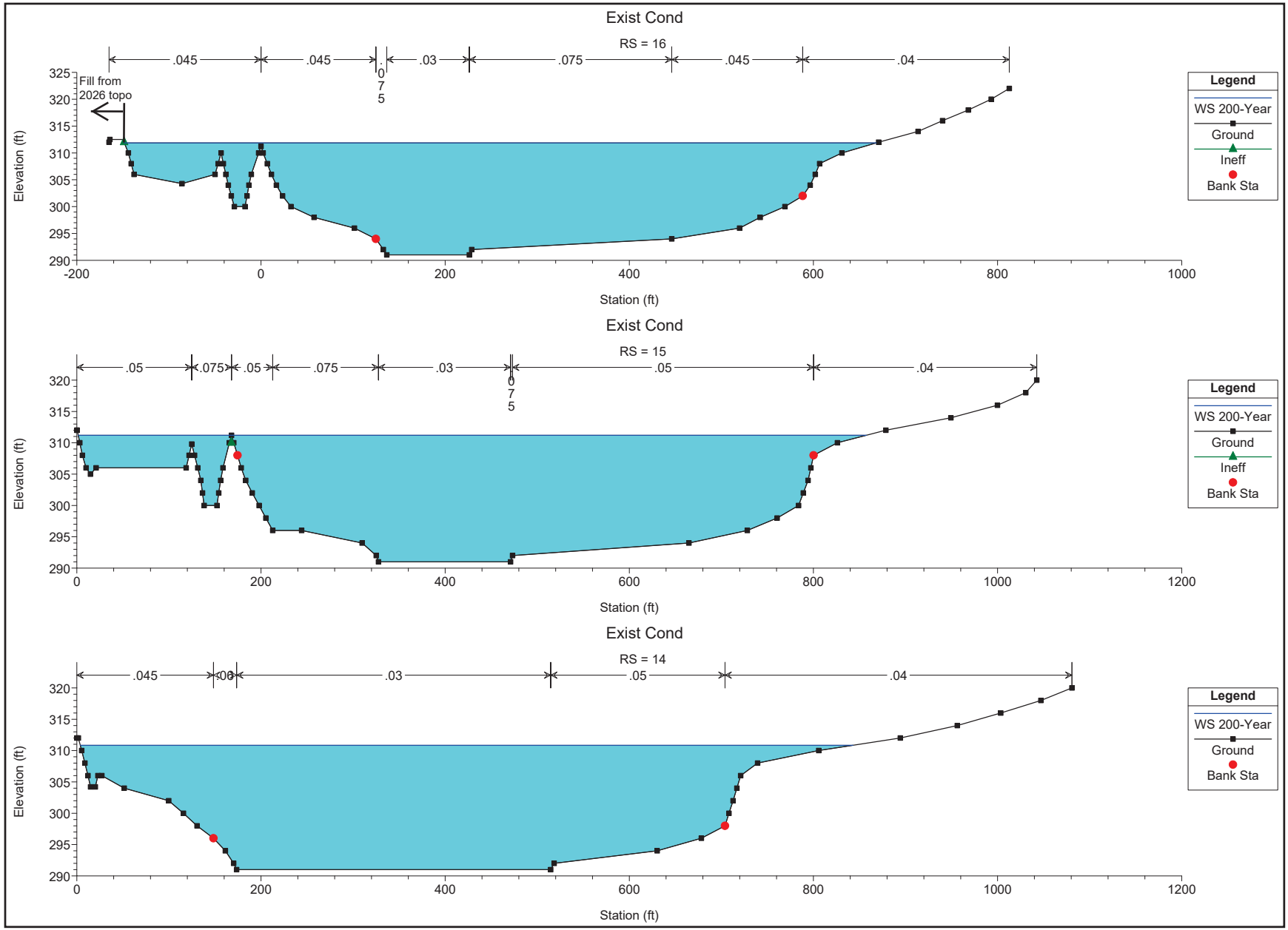
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Bank Sta
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Station (ft)
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WS 200-Year
Ground
Ineff
Bank Sta
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Station (ft)
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Ground
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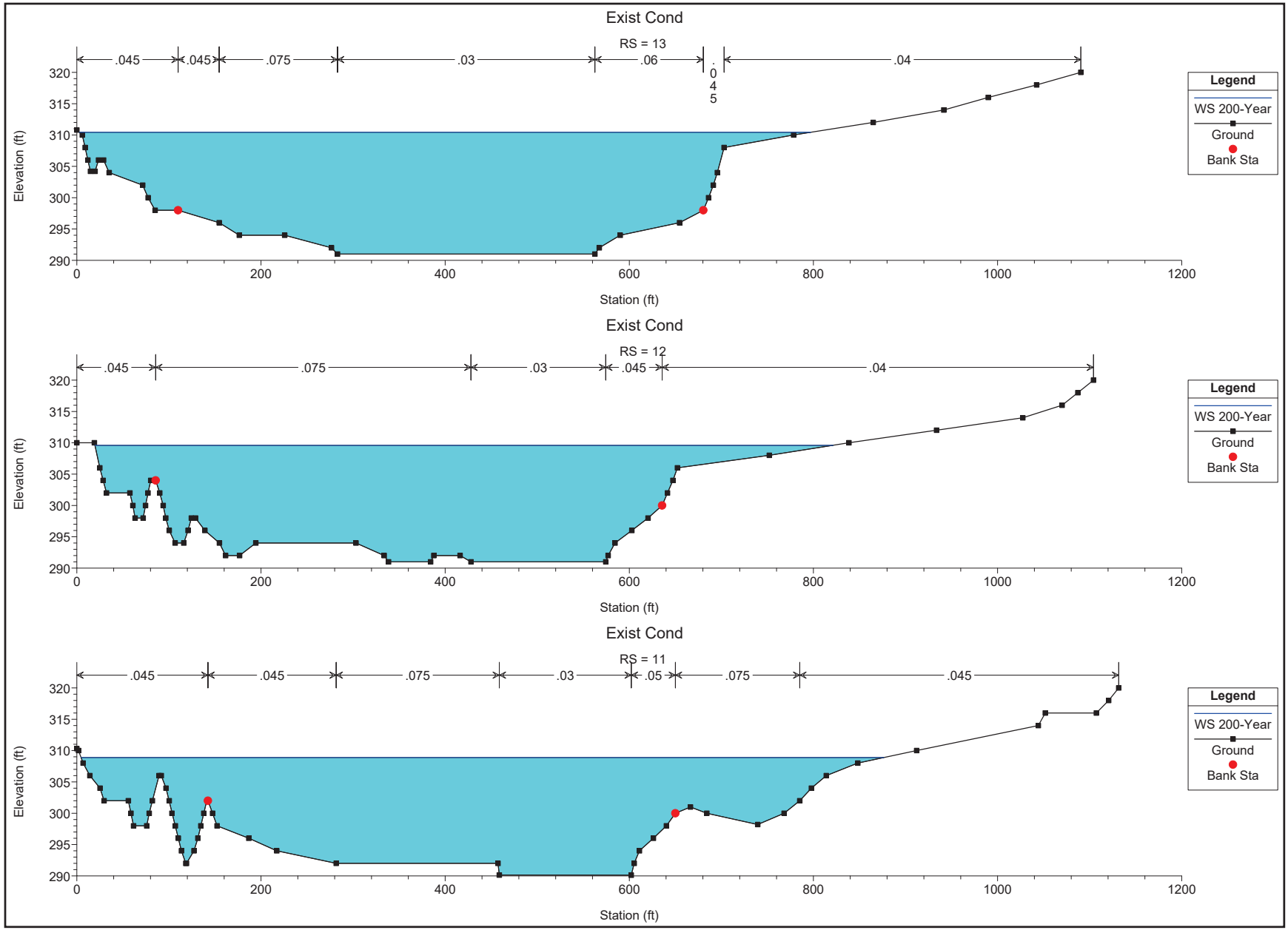
Station (ft)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Ground
Bank Sta
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Station (ft)
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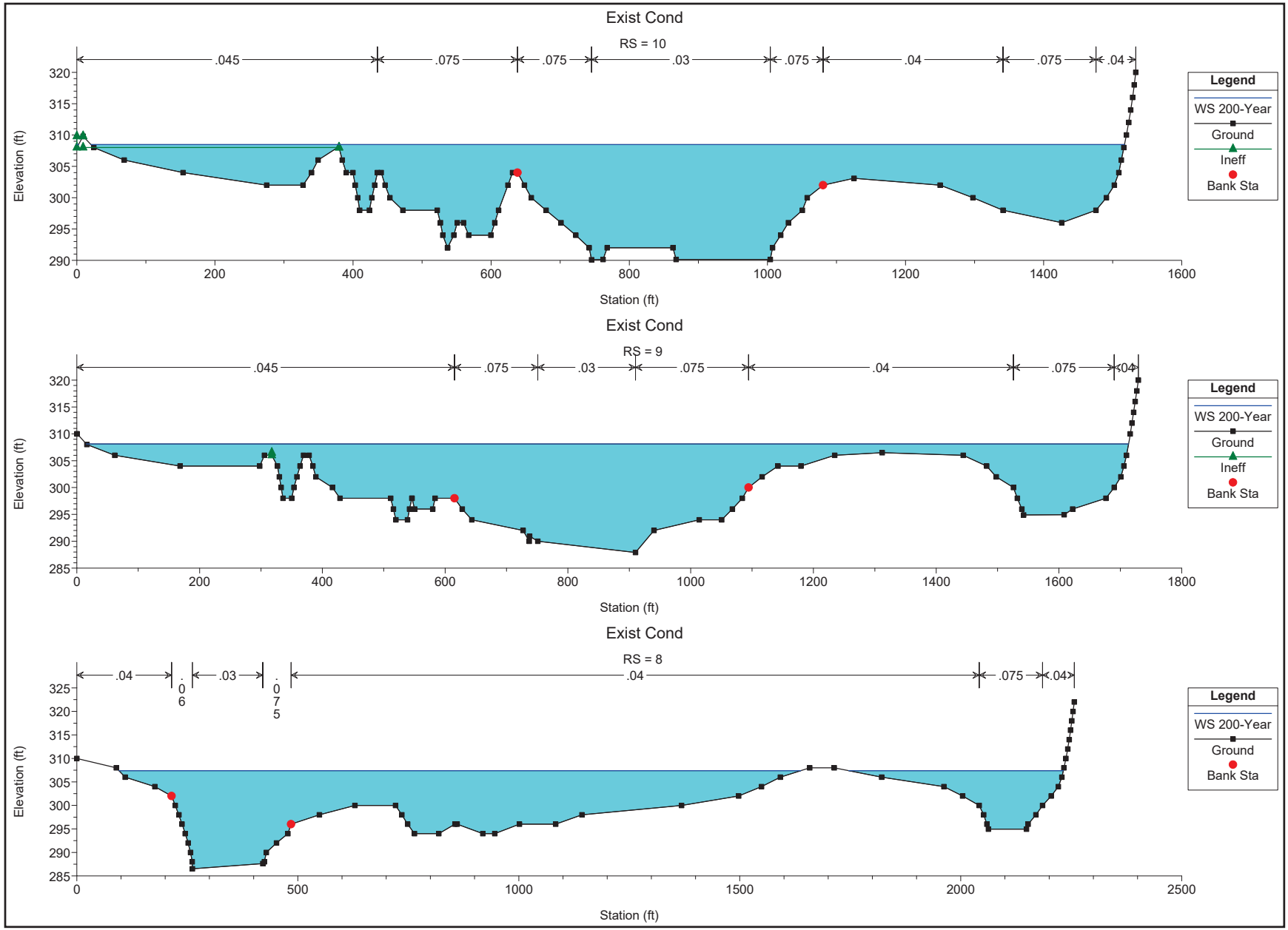
Bank Sta
Elevation (ft)
Station (ft)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Station (ft)
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WS 200-Year
Ground
Ineff
Bank Sta
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800
1000
1200
1400
1600
1800
Station (ft)
Legend
WS 200-Year
Ground
Ineff
Bank Sta
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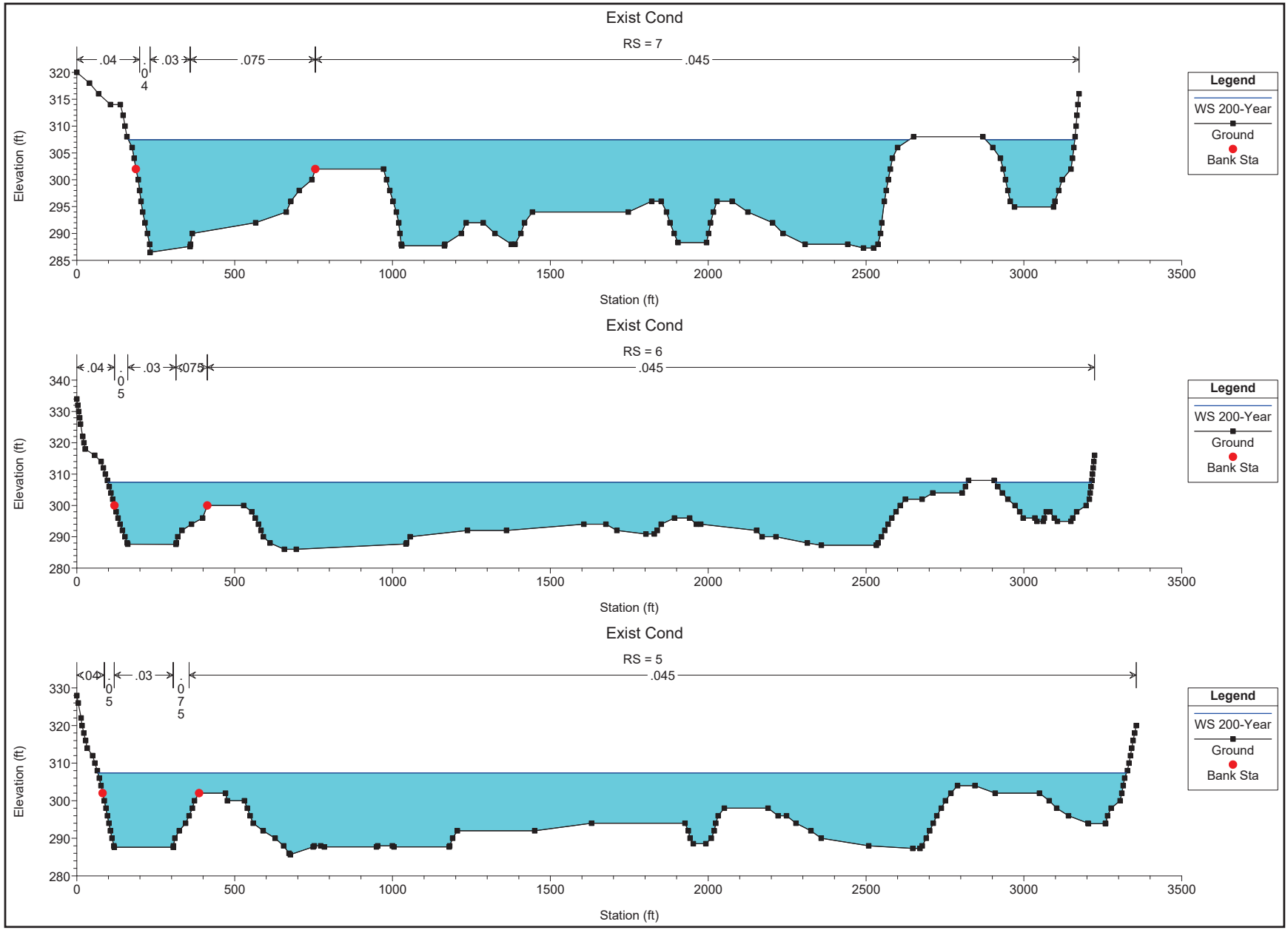
Ground
Bank Sta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Ground
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Station (ft)
Legend
WS 200-Year
Ground
Bank Sta
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Station (ft)
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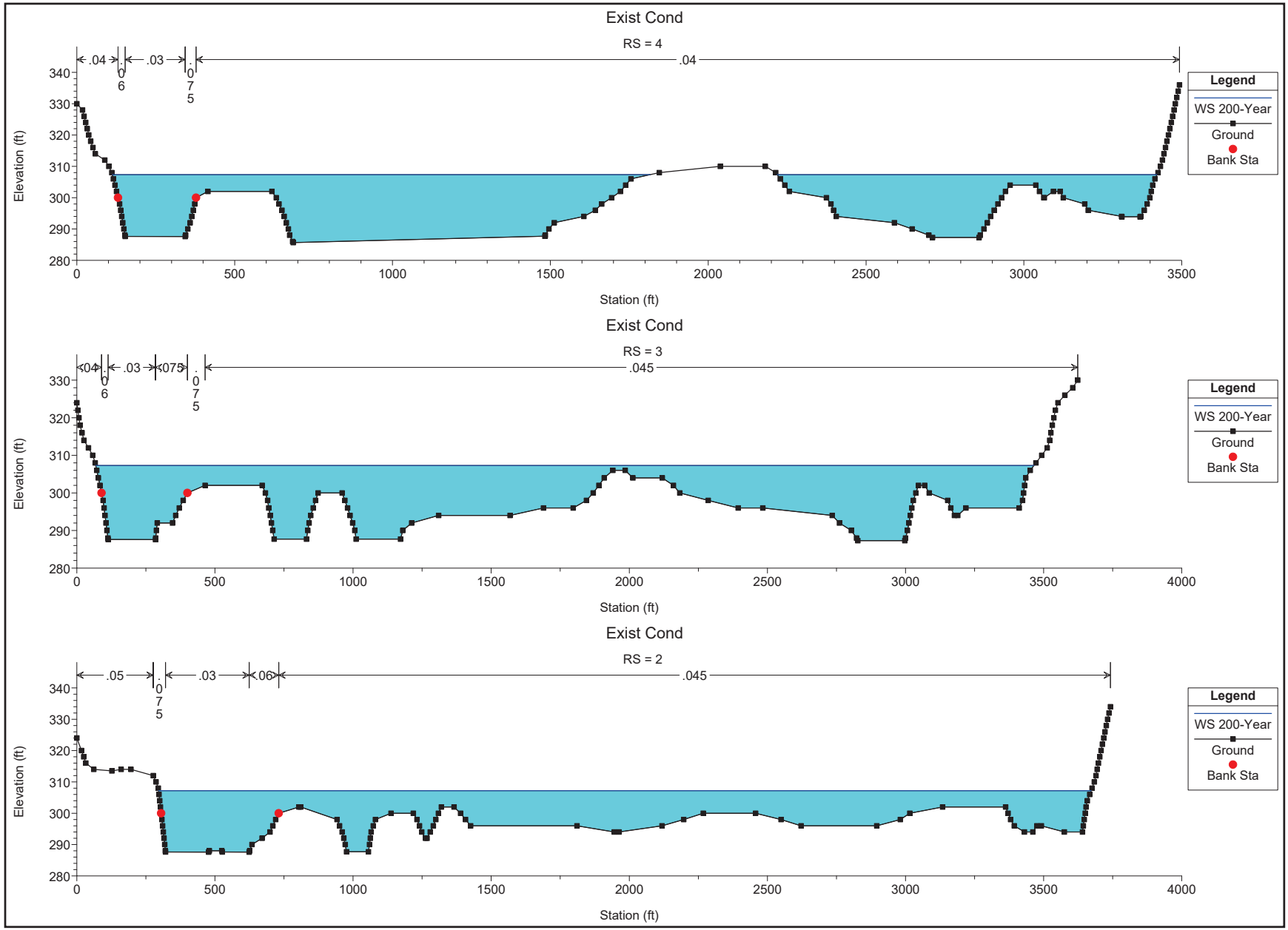
WS 200-Year
Ground
Bank Sta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Ground
Bank Sta
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Legend
WS 200-Year
Ground
Bank Sta
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Station (ft)
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Ground
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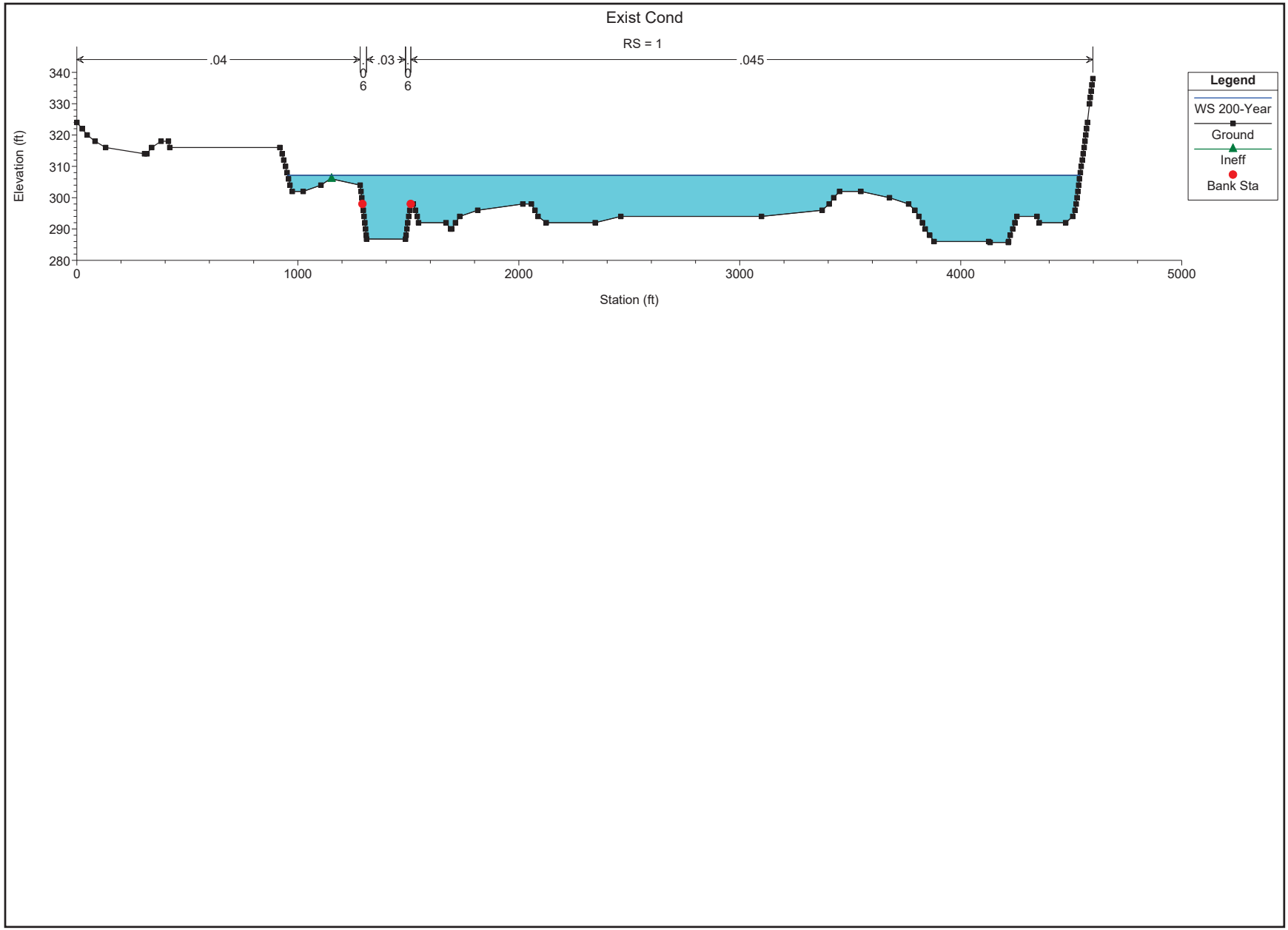
Elevation (ft)
Station (ft)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2000
3000
4000
5000
Station (ft)
Legend
WS 200-Year
Ground
Ineff
Bank Sta

MAP POCKET

GRAPHIC SCALE

200 0 100 200 400

1 INCH = 200 FEET

LEGEND:

PERMIT BOUNDARY

HEC–RAS CROSS–SECTION

LIMIT OF COMPACTED FILL PLACED ON BERM IN 2026

QUARRY SITE

HEC–RAS WORK MAP

APPENDIX G-8
200-YEAR FLOOD HAZARD ANALYSIS – PLANT SITE

200-YEAR HYDRAULIC ANALYSIS FOR CEMEX ROCKFIELD MODIFICATION PROJECT PLANT SITE

May 12, 2026

Wayne W. Chang, MS, PE 46548

ChangConsultants

Civil Engineering ◦ Hydrology ◦ Hydraulics ◦ Sedimentation

P.O. Box 9496
Rancho Santa Fe, CA 92067
(858) 692-0760

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APPENDIX A

200-Year HEC-RAS Analysis

MAP POCKET

HEC-RAS Work Map

INTRODUCTION

Cemex's Rockfield Modification Project (Project) is located along the east side of the San Joaquin River and west side of North Friant Road in the Friant community of Fresno County. The Project consists of an existing Plant Site at 13475 North Friant Road and an existing Quarry Site approximately 2.0 miles to the north (see Figure 1, Location Map after this report text). Chang Consultants prepared the October 15, 2020 report, *Hydraulic Analyses for Cemex Rockfield Modification Project*. The report determined that the Project complies with the applicable local and federal floodway and floodplain regulations. Chang Consultants also prepared the April 21, 2026, *200-Year Hydraulic Analysis for Cemex Rockfield Modification Project Quarry Site,* which concluded the 200-year storm event will not enter the Quarry Site.

The 100-year event is the typical standard used for engineering design and analyses as well as the basis for FEMA's floodplain mapping. This report contains a 200-year hydraulic analysis of the San Joaquin River adjacent to the Plant Site to assess an even more extreme and rare probability flow event. A 200-year event is a flood that statistically has a 0.5-percent chance of occurring in any given year.

The 2020 report discussed the Little Dry Creek FEMA Zone A 100-year floodplain along the Plant Site. This report includes discussion of the Little Dry Creek 200-year floodplain along the Plant Site.

HYDRAULIC ANALYSIS

San Joaquin River

The US Army Corps of Engineers' HEC-RAS model was used for the 200-year hydraulic analysis. The input parameters are as follows.

The existing condition cross-sections were created from 2021 USGS San Joaquin Central Valley DWR CA Lidar 2-foot contour interval topographic mapping on NAVD 88 vertical datum (see the HEC-RAS Work Map in the map pocket). A review of aerial photographs confirmed the topographic mapping is representative of existing conditions.

The starting downstream water surface elevation was based on normal depth. The normal depth slope was determined by calibrating the 100-year analysis. The normal depth slope was adjusted in the 100-year analysis until the base flood elevation matched FEMA's Flood Insurance Rate Map elevation (see attached FIRM Exhibit). This slope was then used in the 200-year analysis.

The roughness coefficients were assigned based on a review of aerial photographs. The roughness coefficients vary from 0.030 to 0.060. A value of 0.030 was used in areas with minimal vegetation and/or containing base flow. Higher values were used to represent areas containing low to dense vegetation and trees.

The 200-year flow rate was determined from FEMA's January 20, 2016, *Flood Insurance Study, Fresno County, California* (FIS). The FIS provides the 10-year (10-percent), 50-year (2-percent), 100-year (1-percent), and 500-year (0.2-percent) flow rates for the San Joaquin River "Below

Friant Dam" and "Below Little Dry Creek" (attached). The FIS Floodway Data Table indicates that the Friant Dam flow rates apply at and above FEMA effective cross-section DS while the Little Dry Creek flow rates apply at and below cross-section DR. Cross-sections 1 through 5 are below FIRM cross-section DR, so the flow rates Below Little Dry Creek apply. Cross-sections 6 through 9 are at and above cross-section DS, so the flow rates Below Friant Dam apply. The 200-year (0.5-percent) flow rate is not provided in the FIS, so was estimated at both locations from a log-probability plot of the four known flow rates. The log-probability plots are attached after this report text and determined a 200-year flow rate of 95,000 cubic feet per second for cross-sections 6 to 9 and 97,000 cubic feet per second for cross-sections 1 to 5.

The existing condition 200-year San Joaquin River HEC-RAS results are included in Appendix A and summarized in Table 1. The Plant Site is along HEC-RAS cross-sections 2 to 8. Appendix A contains graphical plots of each cross-section. The cross-sections are looking downstream, so the Plant Site is on the left (east) side of the cross-sections. The plots show that the 200-year flow is contained within the easterly channel bank along the entire Plant Site. The 200-year floodplain was plotted along the Plant Site on the HEC-RAS Work Map. The plotting confirms that the 200-year floodplain does not extend within the Plant Site.

Cross-Section	200-Year WSE, ft
9	300.57
8	299.74
7	298.54
6	299.09
5	298.64
4	298.55
3	298.37
2	298.32
1	298.29

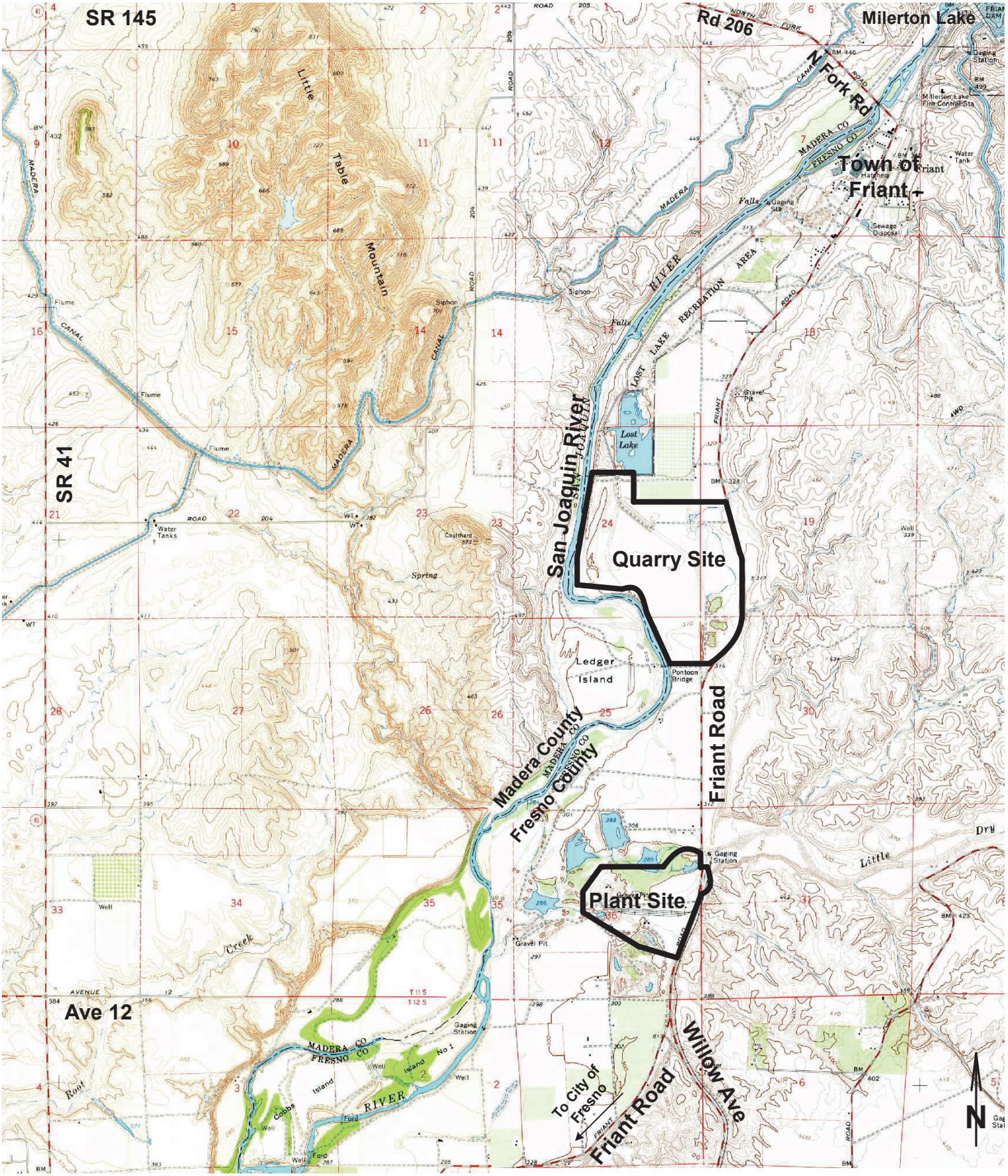
Table 1. 200-Year Water Surface Elevations, NAVD 88

Little Dry Creek

FEMA's Little Dry Creek Zone A floodplain encroaches into a pond within the northeast portion of the Plant Site. A Zone A floodplain is based on approximate methods, so can be inaccurate. The Little Dry Creek 200-year floodplain in relation to the Plant Site pond has been assessed in more detail based on the San Joaquin River 200-year backwater and 2021 topographic mapping from the prior subsection. The San Joaquin River 200-year backwater elevation at the confluence is approximately 300.6 feet from the Table 1 results at cross-section 9. The HEC-RAS Work Map shows that the San Joaquin River 200-year floodplain does not encroach into the northeast pond. The Little Dry Creek 200-year water surface elevations along the Pond will be above the San Joaquin River elevations. The 2021 topographic mapping indicates that the top of berm surrounding the pond is at elevation 310 feet or higher and the adjacent Little Dry Creek flowline varies from approximately 294 to 296 feet. Based on this information, the San Joaquin River backwater will not significantly increase the Little Dry Creek 200-year water surface elevations. The berm is over 9 feet higher than the backwater elevation and over 14 feet higher than the creek flowline. Therefore, the berm will provide protection from the Little Dry Creek 200-year flow.

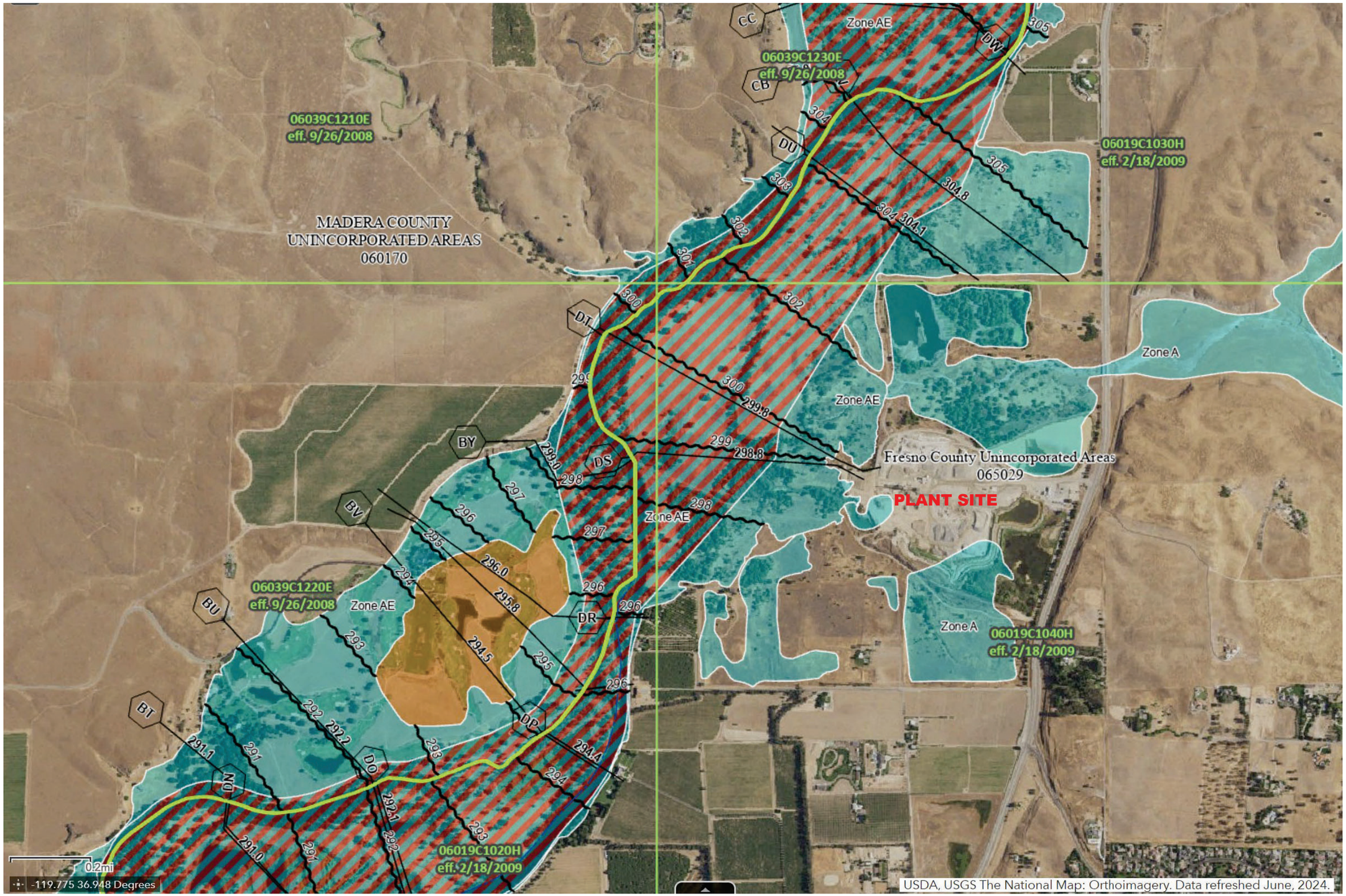
CONCLUSION

The April 21, 2026 Chang Consultants *200-Year Hydraulic Analysis for Cemex Rockfield Modification Project Quarry Site* report determined that the 200-year flow is contained within the San Joaquin River's east bank and will not enter the Quarry Site. This report contains a hydraulic analysis that determined that the San Joaquin River 200-year flow will not enter the Plant Site. Therefore, the two areas within Cemex Rockfield Modification project are not subject to 200-year inundation from the San Joaquin River.



USGS Friant 7.5' Quad

CEMEX
Rockfield Modification Project
Friant Road, Fresno County
Figure 1
Location Map

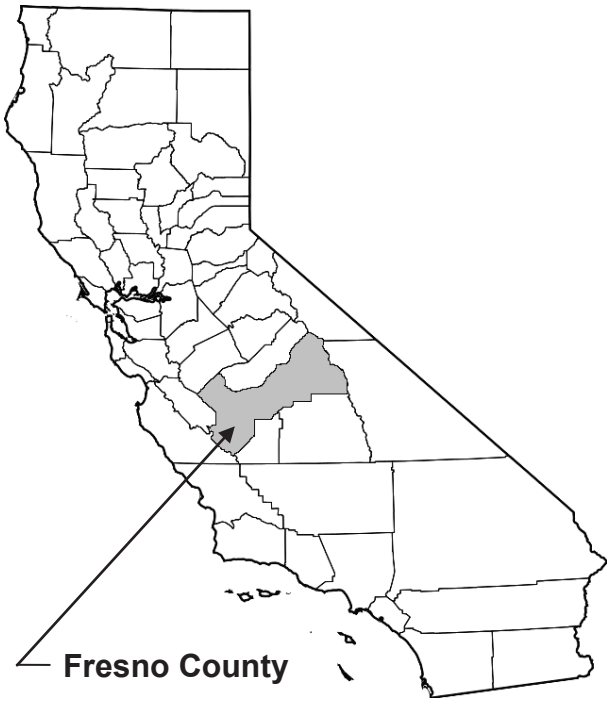


FIRM EXHIBIT

FLOOD INSURANCE STUDY

FRESNO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

Community Name	Community Number
CLOVIS, CITY OF	060044
COALINGA, CITY OF	060045
FIREBAUGH, CITY OF	060046
FOWLER, CITY OF	060047
FRESNO, CITY OF	060048
FRESNO COUNTY (UNINCORPORATED AREAS)	065029
HURON, CITY OF	060049
*KERMAN, CITY OF	060665
*KINGSBURG, CITY OF	060050
MENDOTA, CITY OF	060051
ORANGE COVE, CITY OF	060052
PARLIER, CITY OF	060454
REEDLEY, CITY OF	060053
*SAN JOAQUIN, CITY OF	060055
SANGER, CITY OF	060054
SELMA, CITY OF	060056



*NO SPECIAL FLOOD HAZARD AREA IDENTIFIED

REVISED
January 20, 2016

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
06019CV001C

Table 6: Summary of Discharges (continued)

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet per Second) 10-percent	2-percent	1-percent	0.2-percent
REDBANK CREEK TRIBUTARY 3 (continued)					
Downstream of Friant-Kern Canal	3.0	120	475	540[1]	620[1]
REDBANK CREEK TRIBUTARY 4					
At Sierra Avenue	2.9	90	290	300	420
Downstream of Friant-Kern Canal	2.3	90	290[2]	300[2]	420[2]
Upstream of Friant-Kern Canal	2.3	90	340	540	990
REDBANK CREEK TRIBUTARY 5					
At Sierra Avenue	3.5	120	430	710	820
Downstream of Friant-Kern Canal	3.0	120	430[2]	710[2]	820[2]
Upstream of Friant-Kern Canal	3.0	120	450	730	1,320
SAN JOAQUIN RIVER					
At USGS gage near Mendota	3,943	4,500[3]	6,800[3]	8,700[3]	8,700[3]
At Gravelly Ford	1,805	9,000	32,500	64,000	138,000
Below Little Dry Creek	*	9,000	34,300	74,300	151,100

* Data not available

[1] Decrease due to culvert restrictions at Friant-Kern Canal and overbank losses upstream

[2] Decrease due to culvert restrictions at Friant-Kern Canal

[3] Decrease due to divergence to Chowchilla Bypass

Table 6: Summary of Discharges (continued)

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet per Second) 10-percent	2-percent	1-percent	0.2-percent
SAN JOAQUIN RIVER (continued)					
Below Friant Dam	1,676	8,000	33,000	71,000	146,000
SPRR DRAINAGE					
At North Avenue	0.99	30	70	160	300
TIVY VALLEY CREEK					
At Piedra Avenue	2.2	70	210[1]	265[1]	320[1]
At Weldon Avenue	2.0	70	550	1,100	1,660
WARTHAN CREEK					
At confluence with Los Ganos Creek	116.0	2,300	6,400	8,900	17,100
WELDON CREEK					
At Piedra Road	1.1	60	260	520	820
WOOTEN CREEK					
At Alta Main Canal	15.9	150[1]	170[1]	175[1]	175[1]
At AT&SF Railway	12.7	350	690[1]	995[1]	1,340[1]
Downstream of Friant-Kern Canal	11.7	345	800	1,115	1,360

[1] Decrease due to excessive overbank losses upstream

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
San Joaquin River (continued)								
CU	97,349	1,297/1,297	14,947	4.9	268.6	268.6	269.5	0.9
CV	99,304	1,600/1,600	21,357	3.4	269.5	269.5	270.5	1.0
CW	101,815	1,335/85	24,976	2.9	270.2	270.2	271.1	0.9
CX	103,763	396/36	6,006	12.1	270.2	270.2	270.4	0.2
CY	104,832	515/415	8,247	8.8	272.7	272.7	273.7	1.0
CZ	106,622	1,023/500	16,113	4.5	275.9	275.9	276.8	0.9
DA	107,258	1,000/350	11,742	7.0	276.3	276.3	277.2	0.9
DB	108,249	1,050/100	15,582	4.7	277.8	277.8	278.5	0.7
DC	109,678	625/120	8,245	8.9	277.9	277.9	278.7	0.8
DD	110,811	1,016/200	12,570	5.8	280.8	280.8	281.3	0.5
DE	112,046	1,613/273	15,430	4.7	281.9	281.9	282.6	0.7
DF	113,800	1,450/1,070	19,309	3.8	283.0	283.0	283.8	0.8
DG	115,244	1,380/1,120	12,116	6.1	283.2	283.2	284.1	0.9
DH	116,561	1,924/1,864	23,622	3.1	284.6	284.6	285.4	0.8
DI	118,812	1,600/1,450	9,651	7.7	284.9	284.9	285.8	0.9
DJ	119,724	1,800/1,650	17,822	4.2	286.9	286.9	287.9	1.0
DK	121,347	2,400/2,300	17,630	4.2	288.0	288.0	288.8	0.8
DL	122,626	1,747/1,447	19,543	3.8	288.8	288.8	289.6	0.8
DM	125,800	2,294/2,184	22,941	3.2	290.3	290.3	291.0	0.7
DN	127,112	2,703/2,503	22,617	3.3	291.1	291.1	291.9	0.8
DO	128,447	2,165/2,045	21,163	3.5	292.2	292.2	293.2	1.0
DP	131,642	1,178/978	12,330	6.0	294.5	294.5	295.2	0.7
DQ	132,762	857/557	13,268	5.6	295.8	295.8	296.6	0.8
DR	133,656	600/280	8,616	8.6	296.0	296.0	296.8	0.8
DS	135,797	2,900/1,880	22,879	3.1	299.0	299.0	300.0	1.0
DT	137,718	2,669/2,509	15,407	4.6	299.9	299.9	300.8	0.9
DU	141,270	1,595/1,495	15,128	4.7	304.2	304.2	304.8	0.6

[1]Stream distance in feet above State Highway 145
[2]Width/width within the county

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

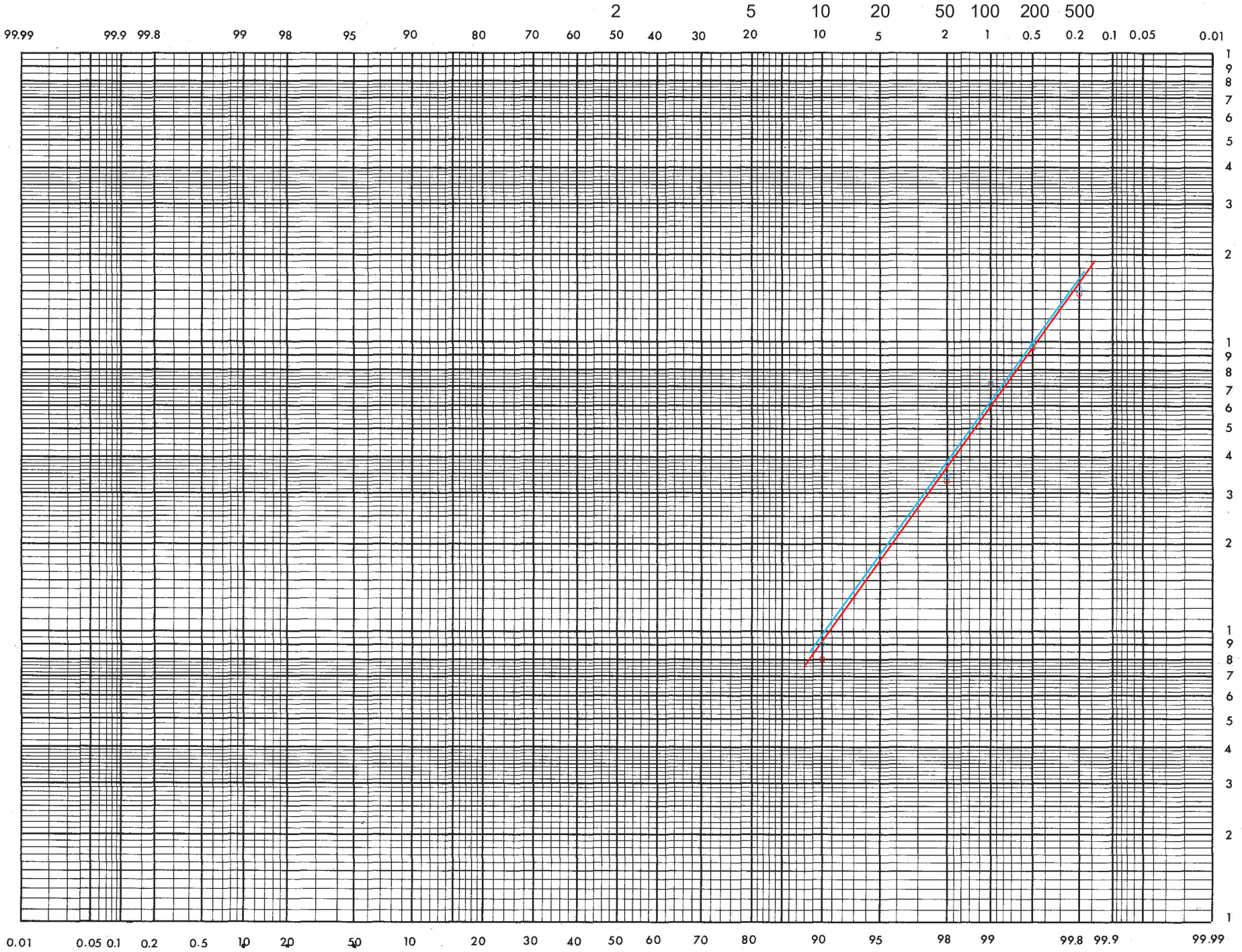
FRESNO COUNTY, CA AND INCORPORATED AREAS

FLOODWAY DATA

SAN JOAQUIN RIVER

Log-Probability

probability x 3 log cycles



Q 200 = 97,000 cfs, Below Little Dry Creek (Cross-Sections 1-5)

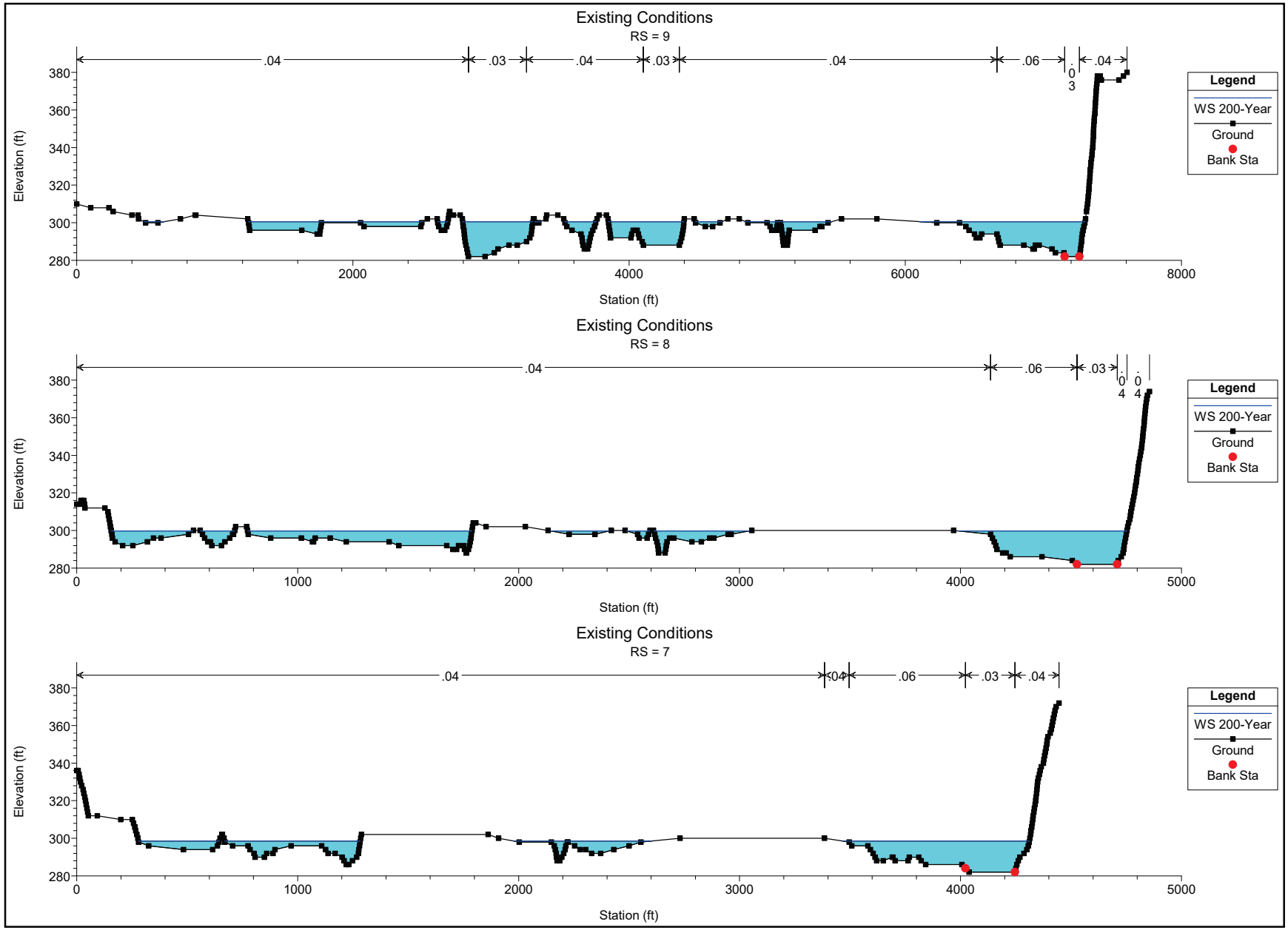
Q200=95,000 cfs, Below Friant Dam (Cross-Sections 6-9)

APPENDIX A

200-YEAR HEC-RAS ANALYSIS

HEC-RAS Plan: Exist Cond River: RIVER-1 Reach: Reach-1 Profile: 200-Year

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	9	200-Year	95000.00	282.00	300.57		300.75	0.000271	5.71	31384.59	4840.89	0.23
Reach-1	8	200-Year	95000.00	282.00	299.74		300.50	0.000970	10.50	19713.60	3105.45	0.44
Reach-1	7	200-Year	95000.00	282.00	298.54		299.94	0.001596	12.80	15343.55	2448.82	0.56
Reach-1	6	200-Year	95000.00	282.00	299.09		299.47	0.000477	7.16	28690.10	3890.76	0.31
Reach-1	5	200-Year	97000.00	282.00	298.64		298.98	0.000651	8.21	29323.18	3483.39	0.36
Reach-1	4	200-Year	97000.00	282.00	298.55		298.72	0.000341	5.94	36721.00	4095.82	0.26
Reach-1	3	200-Year	97000.00	280.00	298.37		298.58	0.000386	6.78	35091.20	4095.98	0.28
Reach-1	2	200-Year	97000.00	280.00	298.32		298.42	0.000192	4.77	44697.10	5322.16	0.20
Reach-1	1	200-Year	97000.00	280.00	298.29	286.94	298.36	0.000110	3.58	49450.28	5700.14	0.15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.03
.04
.06
.03
.04
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300
280
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2000
4000
6000
8000
Station (ft)
Legend
WS 200-Year
Ground
Bank Sta
Existing Conditions
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.06
.03
.04
.04
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Station (ft)
Legend
WS 200-Year
Ground
Bank Sta
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.06
.03
.04
Elevation (ft)
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4000
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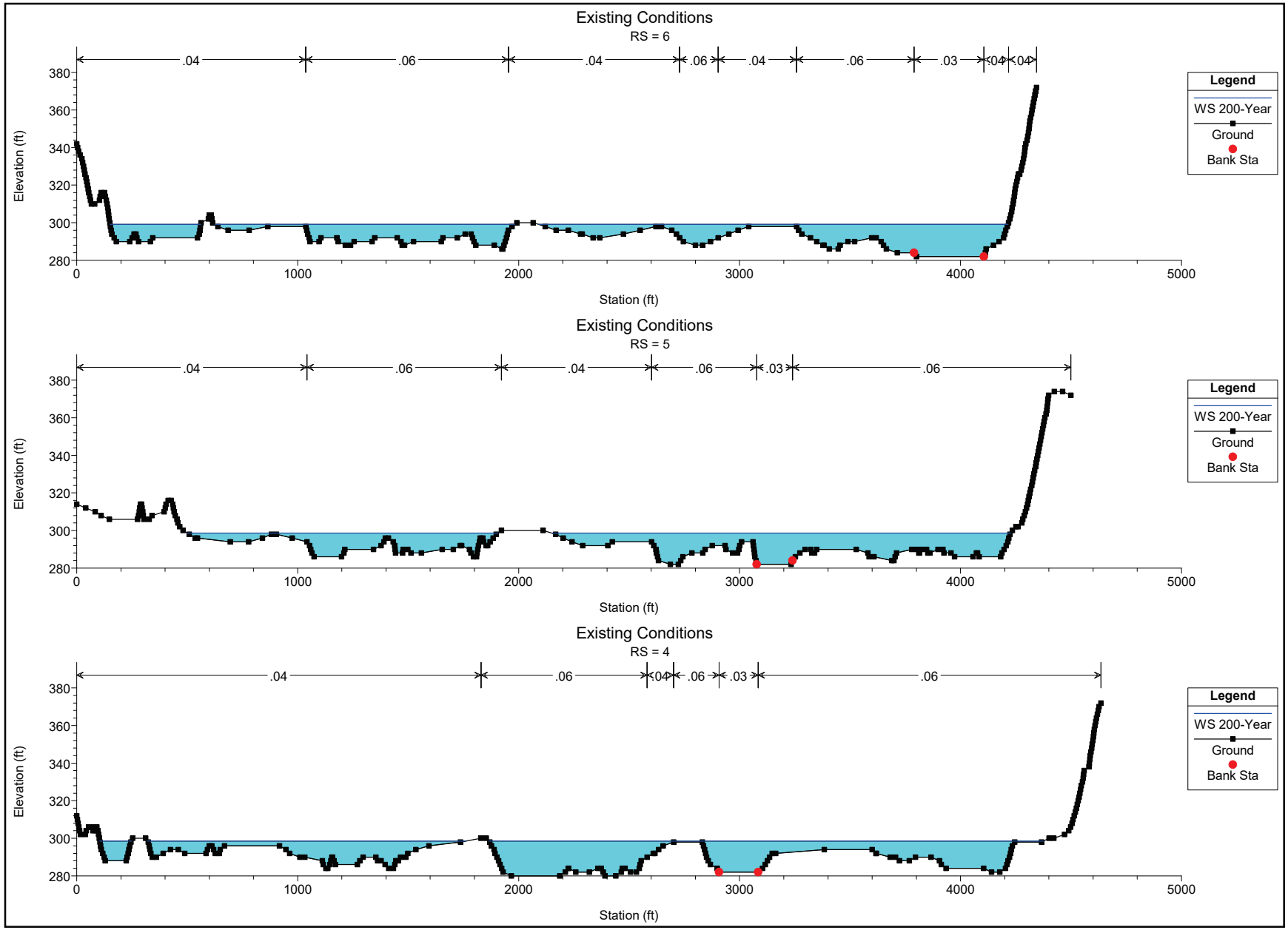
Station (ft)
Legend
WS 200-Year
Ground
Bank Sta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Legend
WS 200-Year
Ground
Bank Sta
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Station (ft)
Legend
WS 200-Year
Ground
Bank Sta
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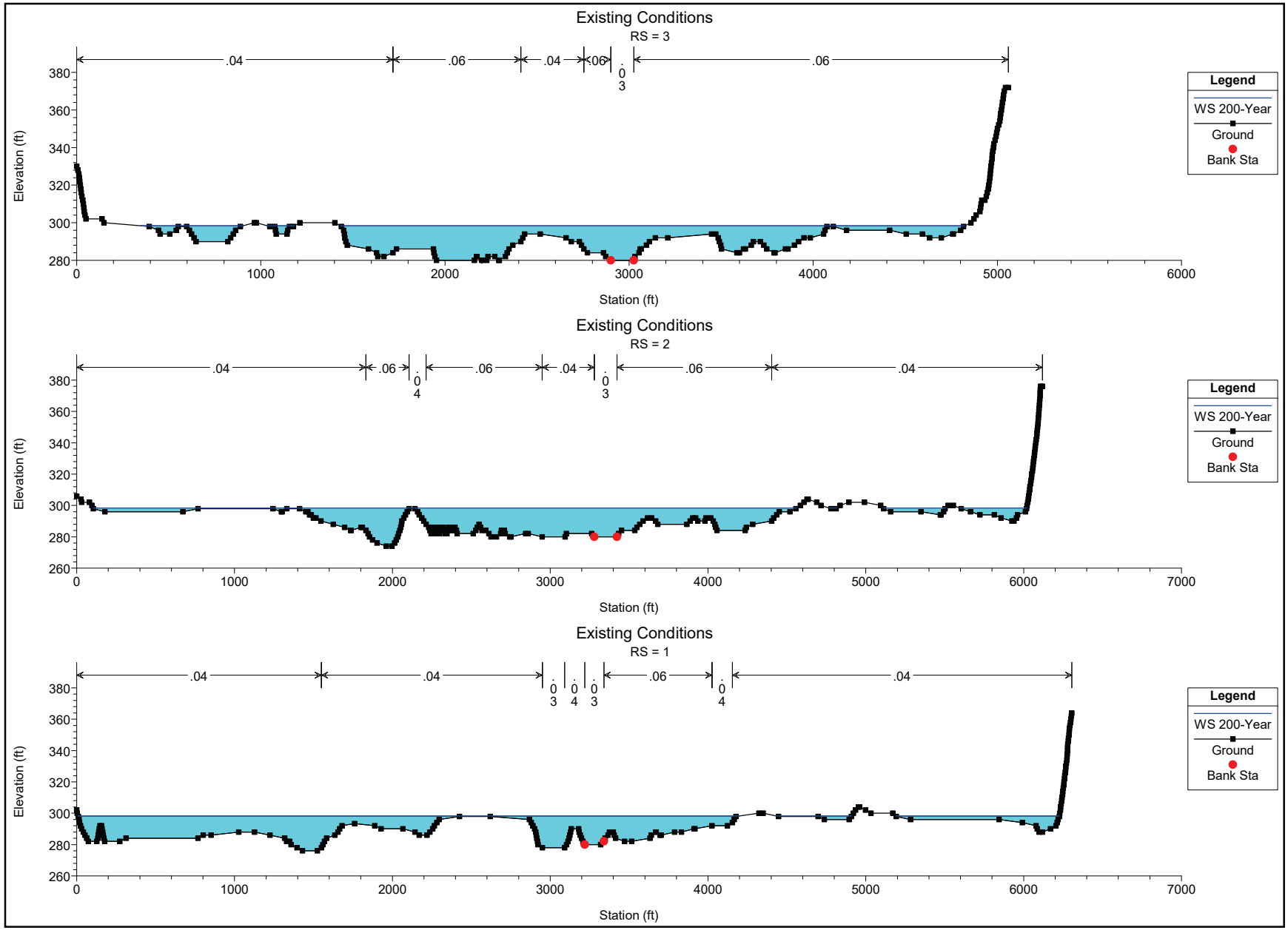
Station (ft)
Legend
WS 200-Year
Ground
Bank Sta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Station (ft)
Legend
WS 200-Year
Ground
Bank Sta
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300
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3000
4000
5000
6000
7000
Station (ft)
Legend
WS 200-Year
Ground
Bank Sta
Existing Conditions
RS = 1
.04
.04
.03
.04
.03
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Elevation (ft)
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300
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3000
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6000
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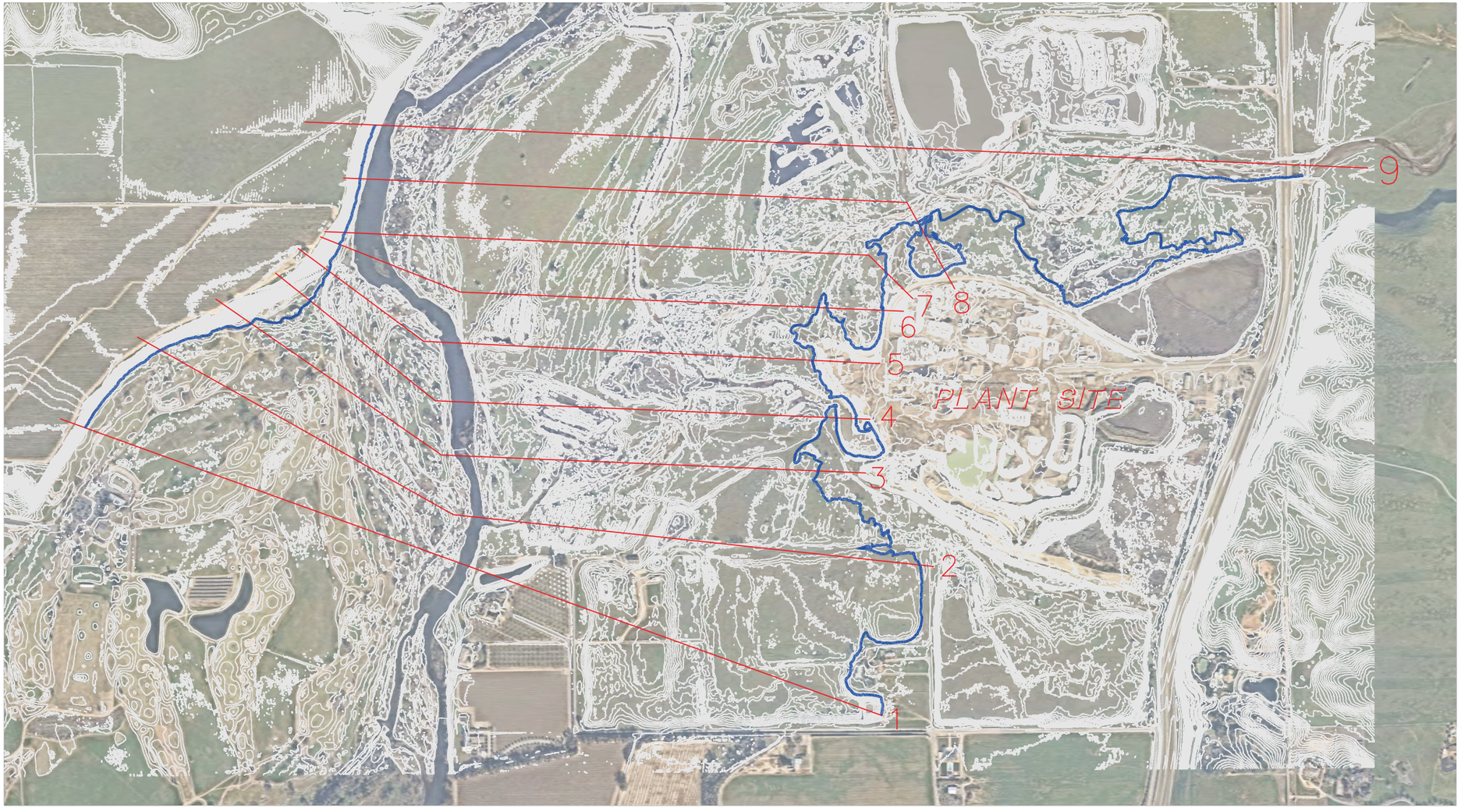
Station (ft)
Legend
WS 200-Year
Ground
Bank Sta

MAP POCKET



GRAPHIC SCALE

0 400 800

1 INCH = 800 FEET

LEGEND:

HEC–RAS CROSS–SECTION

200–YEAR FLOODPLAIN

HEC–RAS WORK MAP

APPENDIX H-8
BLASTING AND HUMAN RESPONSE TECHNICAL MEMORANDUM

BENCHMARK RESOURCES

VibraTechinc.com

235 E. Maple Street
Hazleton, PA 18201

Phone 570.455.5861

To: Ms. Christine M. Jones CEMEX
From: Douglas Rudenko

Subject: Technical Note on Threshold of Significance for Human Response
CEMEX Rockfield Quarry Modification Project
Fresno County, California

Date: April 29, 2026

This memo is in response to your request for a technical note to determine a threshold of significance for human response to ground vibration and air overpressure as measured at occupied residential structures not owned by Cemex.

Researchers for Caltrans developed the following human response table specifically for blast-induced ground vibrations:

Table 1. [Caltrans 2004 Table 21] Human Response to Blasting Ground Vibration

Average Human Response	PPV (in/sec)
Barely to distinctly perceptible	0.02-0.10
Distinctly to strongly perceptible	0.10-0.50
Strongly perceptible to mildly unpleasant	0.50-1.00
Mildly to distinctly unpleasant	1.00-2.00
Distinctly unpleasant and to intolerable	2.00-10.00

Jones & Stokes, 2004, *Transportation- and construction-induced vibration guidance manual*. June. (J&S 02-039.) Sacramento, CA. Prepared for California Department of Transportation, Noise, Vibration, and Hazardous Waste Management Office, Sacramento, CA.

Because this table was specifically developed to address human response to blast-induced ground vibrations, it is useful in determining a threshold of significance for the Cemex Rockfield Quarry blast-induced ground vibrations. However, in order to determine whether the 2004 Caltrans study is the most appropriate significance criteria, it is necessary to compare that table with other available studies.

The majority of the studies done on human tolerance to vibrations have been of steady-state sources, meaning that the amplitude and frequency of the vibration remain constant over the test period. This type of testing is usually performed with vibrations lasting much longer than the vibrations from a typical mine or quarry blast event. The purpose of these studies is usually to determine the vibration levels that people can perform tasks at a reasonable level of comfort,

or to set occupational exposure limits for activities such as working in an office, traveling in an airplane, driving an automobile, or operating heavy equipment. Conclusions are drawn about the effects of vibration on the human body.

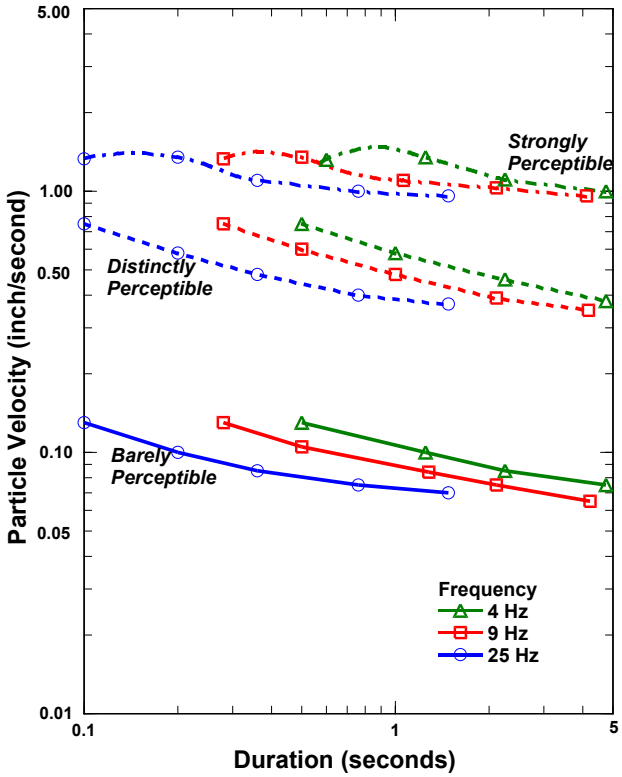


Figure 1. Human Response to Transient Vibrations of Various Frequency and Duration (from Wiss & Parmelee, 1974).

Based on available research, blast vibrations are certainly not detrimental to the human body, and the short period of time over which they occur does not produce physical fatigue. For these reasons, most studies of human response to vibration cannot be related to blast vibrations. However, three important facts become apparent from these studies. First, people can perceive vibrations over an extremely wide range of amplitudes, frequencies, and durations. Second, individual response to a given vibration level is highly subjective and varies not only with each individual but also on a daily basis. Third, it is also dependent upon many factors unrelated to the vibration event.

Blast induced ground vibration is not a steady state vibration, but rather a transient vibration. A transient vibration is a vibration that begins near its maximum level, quickly decreases in amplitude, and usually becomes imperceptible after just a few seconds. Figure 1 is derived from a study of subjective human response to transient vibrations completed by Wiss and Parmelee in 1974. The Wiss and Parmelee study involved subjecting forty people to transient vertical vibrations while standing on a test platform. Each person was exposed to vibrations of various duration and amplitude, at frequencies between 2.5 and 25 Hz, and asked to characterize their perception of the vibrations. Four levels of subjective human response

to vibration were categorized: “Barely Perceptible, Distinctly Perceptible, Strongly Perceptible, and Severe”. The mean response to the three lower categories is shown in Figure 2 for three tested frequencies. The mean response to the “Barely Perceptible” category is the level at which half of the people tested could not perceive vibrations below. The mean for each of the other categories was found similarly. Clearly human tolerance to vibration decreases as the duration of the vibration increases. The mean response curves for each frequency considered in Figure 1 are asymptotic; that is, they each approach a constant minimum level, or asymptote, as the duration increases, and each category has a common asymptote. These asymptotes provide a convenient method of assigning a subjective criterion to human response to transient vibrations that is independent of frequency or duration. Figure 2 depicts both the asymptotic mean response levels and the threshold response levels from the Wiss and Parmelee study. The threshold response levels are the levels cited by the most sensitive of the test subjects for each vibration category.

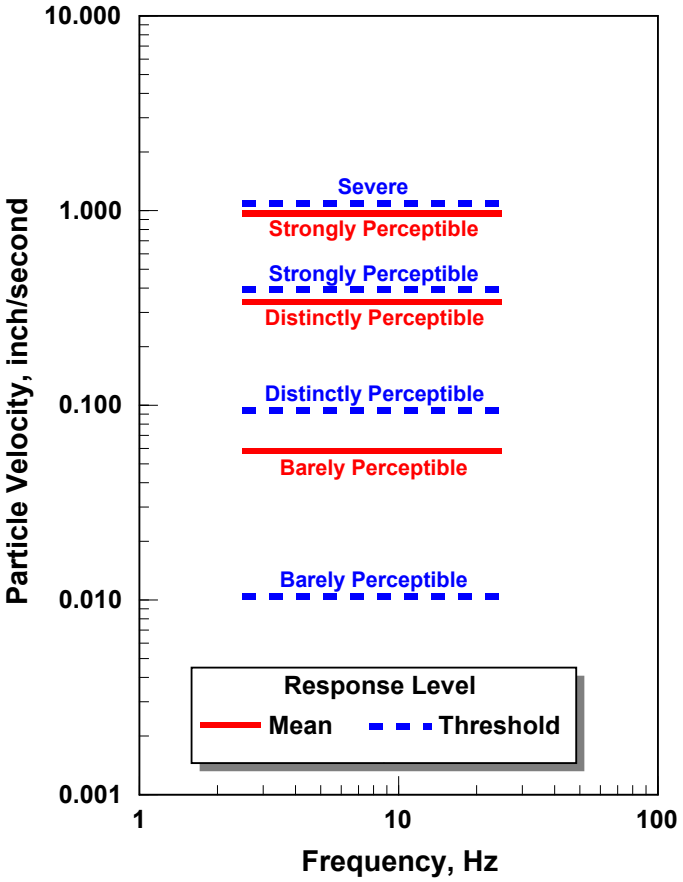


Figure 2. Generalized Human Response to Transient Vibrations (from Wiss & Parmelee, 1974).

The Wiss and Parmelee study was based on people standing and being subjected to vertical vibrations. Studies involving people in various body positions have found good correlation to the data from standing tests, suggesting that body position may not influence a persons sensitivity to vibration. The threshold levels defined by the broken lines in Figure 2 are generally accepted as quite conservative for both transient and steady state vibrations under most conditions.

Most scientific studies regarding human perceptibility to steady state and transient vibrations have been conducted in laboratories and other controlled environments. The levels at which people may perceive vibration will not change when they are in their homes, however, their classification of the vibration levels may. While no studies have been able to adequately account for all the variables affecting the response of people in their homes to blast vibrations, it is reasonable to conclude that the tolerance to vibrations would occur at levels lower than those found in laboratory environments.

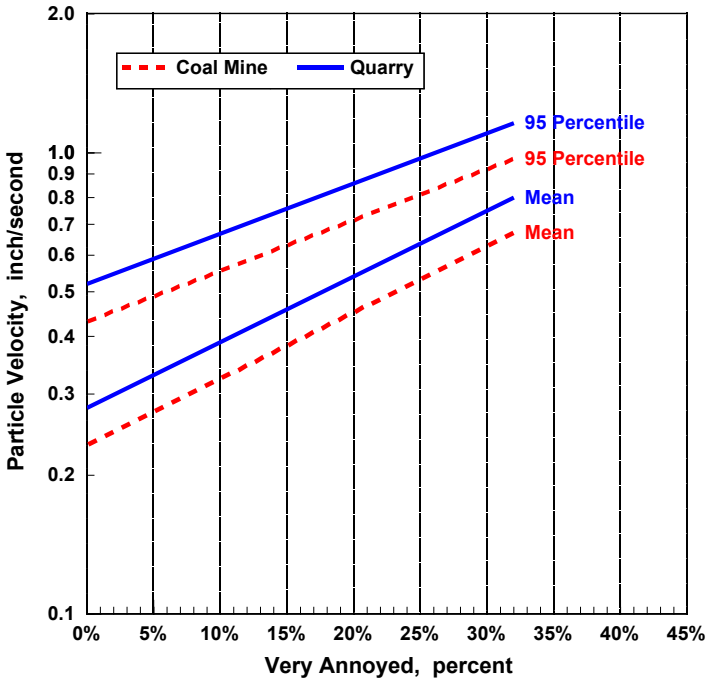


Figure 3. Reactions of Persons Subjected to Blasting Vibration in their Homes (from RI-8507).

In order to gain a better insight to the levels of vibration which evoke complaints from homeowners, the USBM calculated the ground vibrations necessary to produce structure response similar to that measured during an airblast study (USBM RI-8485). These calculated ground vibration levels were then correlated to the human annoyance curves generated through the airblast study. The result of this correlation is shown graphically in Figure 3. The 95-percentile curve represents the level at which there would be 95% confidence in the data that if ground vibration levels reached 0.60 in/sec approximately 5% of the population would consider this to be very annoying.

This data, although based on calculated ground vibration levels, may be the most valid predictor of homeowner response to blast vibrations. It is based on human response to not only perceived vibration in their homes, but also the house rattle and other associated sounds produced by vibration in a residential structure. This data also considered the fear homeowners feel concerning property damage.

By comparison, the American National Standards Institute (ANSI) has two relevant guidelines addressing vibrations for people. ANSI S3.18-1979 addresses issues of health, task proficiency and comfort for whole-body vibrations. This standard uses steady-state rather than transient blast-like vibrations. The shortest duration covered by the standard is one minute. In the frequency range of 8 to 20 Hz the recommended vibration levels for health, proficiency, and comfort are 4.4, 2.2, and 0.7 in/sec respectively.

ANSI S3.29-1983 recognizes that people perceiving vibrations in buildings have different concerns than do people performing a task. People in buildings are responding to a structure's response to the vibration, which includes secondary effects such as window rattling or movement of loose objects and pictures on walls. The peak vibration tolerated by humans in a residence or office is 0.50 or 0.71 in/sec respectively.

Comparing the research described in the preceding section with the 2004 Caltrans study and the ANSI standards, an appropriate significance threshold for human response to blast-induced ground vibrations from the proposed Rockfield Quarry is a peak particle velocity of 0.60 inches/second. This threshold falls between the two ANSI standards and is at the lower end of the "strongly perceptible to mildly unpleasant" average response in the 2004 Caltrans table, while still encompassing the 95th percentile of responses discussed in the USBM report. Maintaining this threshold would therefore sufficiently reduce potential blasting disturbances to residents living adjacent to the quarry site. The Blasting Protocols are revised to require that the blast design adhere to the 0.60 in/sec ppv threshold at occupied residential structures near the quarry site.

Human Response to Air Overpressure

Since noise levels due to blasting are generally very low frequency (approximately 2 to 25 Hz), the human ear does not detect the total energy associated with the overall linear sound energy. Based upon research on blasting, the typical fundamental frequency (the frequency where the majority of sound energy is located) for a blast is at the 20 to 25 Hz range, below the level of human hearing.

Little research has been done on the subjective human reactions to blast noise, although annoyance studies have been made for sonic booms and other impulsive source and applied to blasting. As part of the development of the air overpressure criteria by the USBM, researchers not only had to consider the structural effect of the air overpressure limit but also determine if the limit would be acceptable in terms of annoyance. In studying the limits for air overpressure annoyance, the USBM compared blasting to previous government studies of sonic booms and artillery fire.

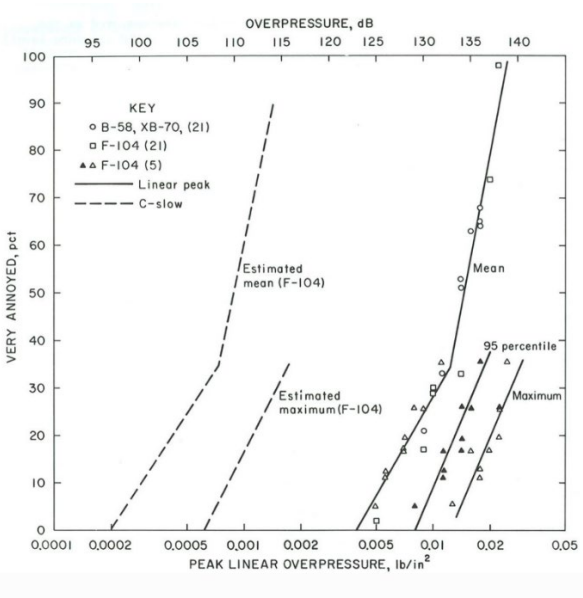


Figure 4. Population very annoyed by sonic boom-produced house rattles (after Siskind).

Figure 4 above shows the results of one study that was utilized for comparison by the USBM. The study was conducted in Oklahoma City and consisted of an average of eight booms per day for six months. Utilizing the 95-percentile line, there would be 95 % confidence in the data that at 0.01 psi blast-induced air overpressure would be acceptable to all but 5% of the population. Therefore, the appropriate threshold of significance for human response to blast-induced air overpressure is 0.01 psi. The Blasting Protocols are revised to require that blast-induced air overpressure maintain the 0.01 psi threshold at occupied residential structures near the quarry site.

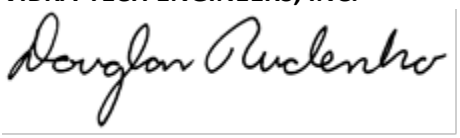
The distance to each receptor will change for each blast in the Rockfield pit as the blast location changes during the pit's development. Figure B1 and B2 in the Vibra-Tech Blast Impact Analysis Report shows 42 different blast designs and the corresponding maximum charge weight for the design that could be used. Table 2 shows the closest distance that a blast could occur to the various adjacent structures and the maximum charge weight that would be required to be below the ground vibration and air overpressure threshold of significance of 0.6 in/sec and 0.01 psi. Obviously, for many blast locations the distance to the receptor will be much greater resulting ground vibration and air overpressure levels significantly lower than 0.6 in/sec and 0.01 psi.

Table 2. Maximum charge weight for closest distance to meet threshold of significance

Receptor	Distance (ft)	Max Pounds Per Delay (lbs.)
South Residential Structure	275	*41
East Residential Structures (Mesa View Ave.)	460	116
Lost Lake Park Structures	500	138
North Ranch Structures	1,000	550
Northeast Residential (N. Friant Rd.)	1,430	1,125
Sumner Hill Residences	2,000	2,200

*To accomplish 41 lbs./delay near the closest residential structure a 53' deep hole, 3.5" diameter, 4 explosive decks, and an ANFO product with a density of 0.87 g/cc can be utilized. The maximum pounds per delay interval would be 34 lbs./delay.

Respectfully,
VIBRA-TECH ENGINEERS, INC.



Douglas Rudenko
Senior Vice President

APPENDIX H-9
REVISED BLASTING PROTOCOLS

Blasting Protocols
CEMEX - Rockfield Quarry
Fresno, California

Prepared for:

CEMEX Construction Materials Pacific, LLC.
4120 E. Jurupa Street
Suite 202
Ontario, CA 91761

Prepared by:

Vibra-Tech Engineers, Inc.
109 E. First Street
Hazleton, PA 18201
1-800-233-6181

October 12, 2020
Updated April 29, 2026

Introduction

This blasting protocol document summarizes the monitoring, control and reporting requirements for ground vibrations and air overpressures emitted from blasting at the Cemex Rockfield Quarry in Fresno County, California. In addition, it provides "Best Practices" for the control and mitigation of flyrock from rock blasting and the mitigation of groundwater and surface water contamination from the use of explosive products.

Blast Vibration Monitoring and Control Plan

A. Instrumentation Requirements

1) A direct reading velocity seismograph that adheres to the performance specifications for blasting seismographs adopted by the International Society of Explosives Engineers will be used at all times to monitor ground vibration and air overpressures resulting from blasting operations at the Rockfield Quarry.

2) All seismographs shall be considered approved only if the instrument meets the following criteria, as suggested by the International Society of Explosives Engineers:

    a) For ground vibration measurements, the instrument shall have a frequency response range from 2 – 250 hertz, within zero to -3 dB of an ideal flat response.

    b) For ground vibration measurements, the instrument shall have an accuracy of ± 5 pct. or ±0.02 in/sec, whichever is larger between 4 and 125 Hz.

    c) For air overpressure measurements, the instrument shall have a flat frequency response over the range of 2 to 250 hertz, -3dB at 2 Hz. ± 1dB.

    d) For air overpressure measurements, the instrument shall have an accuracy of ± 10 pct. Or ± 1 dB, whichever is larger between 4 and 125 Hz.

    e) The digital sampling rate shall be 1000 samples/sec or greater, per channel.

3) The instrument shall be capable of measuring and recording particle velocity in three mutual perpendicular directions.

4) The instrument shall have a seismic range from 0.02 to 4.0 inches per second for ground vibration measurements.

5) The instrument shall have a pressure range from approximately .001 to .012 pounds per square inch (psi) [approximately 106 dB to 138 dB, re: $2x10^{-9}$ psi] for air overpressure measurements.

6) The instrument shall be capable of performing a dynamic field calibration during monitoring and should be calibrated in accordance with the manufacturer's recommendations on a yearly basis.

7) Appendix A of this document gives the specifications of an instrument that meets the requirements set forth above.

B. Instrumentation Setup Procedures

1) In order to document compliance, an instrument will be located, at a minimum, at the closest residential/commercial structure, the closest well, and at three locations along the crest of the east San Joaquin River embankment. The instruments will be placed on the ground between the closest blast hole to be detonated and these locations. As the blast location moves, the embankment instruments will be moved to locations nearest the blast. Figure 1 below shows the location for the first blast and the monitoring locations.

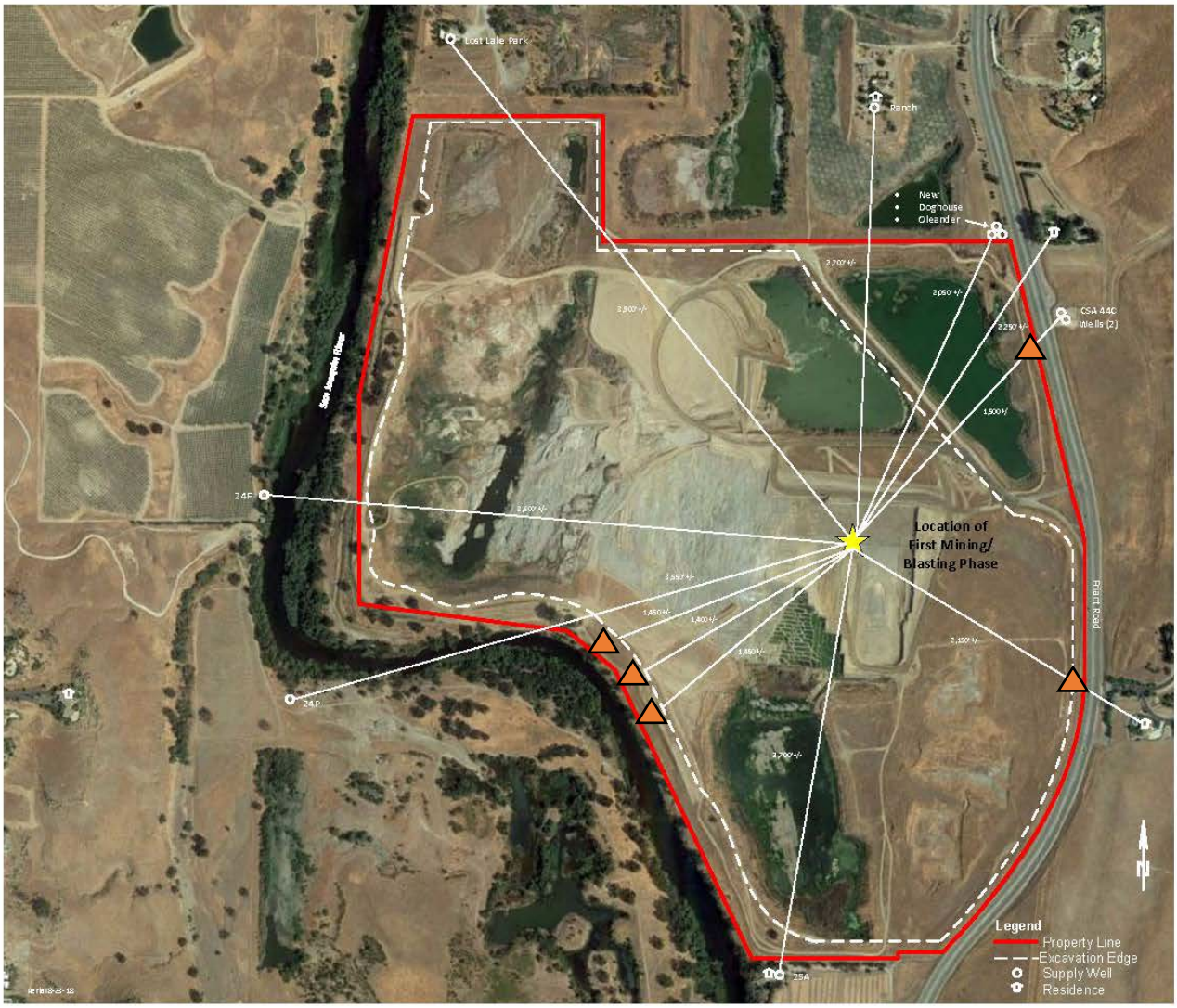


Figure 1 - Location of First Blast denoted by yellow star. Location of ground vibration and air overpressure monitors denoted by orange triangle.

If a property owner does not give permission for the monitoring to be conducted on their property then the seismograph should be placed at a location between the blast area and the property that did not provide permission (a closer distance to the blast).

Ground Vibration Measurements

a) Sensor placement - The sensor should be placed on or in the ground on the side of the structure closest to the blast, or in line with the blast

b) Location relative to the structure – Sensor placement should ensure that the data obtained adequately represents the vibration levels received at the structure being protected. The sensor should be placed within 10 feet of the structure or less than 10% of the distance from the blast, whichever is less.

    i) The sensor must be nearly level.
    ii) The longitudinal channel should be pointing directly at the blast or oriented with a reference direction (ex: North).
    iii) Where access to the structure and/or property is not available, the sensor should be placed closer to the blast in undisturbed soil.

c) Sensor coupling – Depending on the anticipated ground vibration acceleration levels spiking, burial, or sandbagging of the geophone may be appropriate depending on conditions.

    i) Burial, the preferred method, is excavating a hole that is no less than three times the height of the sensor, spiking the sensor to the bottom of the hole, and firmly compacting soil around and over the sensor.
    ii) Spiking entails removing the sod, with minimal disturbance of the soil and firmly pressing the sensor with the attached spike(s) into the ground.
    iii) Sand bagging requires removing the sod with minimal disturbance to the soil and placing the sensor on the bare spot with a sandbag over top. Sandbags should be large and loosely filled with about 10 pounds of sand. When placed over the sensor the sandbag profile should be as low and wide as possible with a maximum amount of firm contact with the ground

d) Ground Vibration Trigger Level - The trigger level should be programmed low enough to trigger the instrument from blast vibrations and high enough to minimize the occurrence of false events. The level should be slightly above the expected background vibrations of the area. A good starting level is 0.05 in/sec.

e) Record the full waveform. It is not recommended that the continuous recording option available on many seismographs be used for monitoring blast-generated vibrations. If the blast vibration is not sufficient to trigger the instrument a monitor log should be printed to show that the instrument was on and monitoring during the date and time that the blast occurred. A dynamic sensor check should also be part of the permanent record.

Air Overpressure Measurements

a) Microphone placement - The microphone should be placed along the side of the structure nearest the blast, or in line with the blast.

    i) The microphone should be mounted near the geophone with the manufacturer's windscreen attached.

ii) If practical, the microphone should not be shielded from the blast by nearby buildings, vehicles or other large barriers. If such shielding cannot be avoided, the horizontal distance between the microphone and shielding object should be greater than the height of the object above the microphone.

iii) If placed too close to a structure, the air blast may reflect from the house surface and record higher amplitudes. Structure response noise may also be recorded. Placing the microphone near a corner of the structure can minimize reflection.

2) Document the location of the seismograph. This includes the name of the structure and where the seismograph was placed on the property relative to the structure. Any person should be able to locate and identify the exact monitoring location at a future date.

3) Know and record the distance to the blast. The horizontal distance from the seismograph to the blast should be known to at least two significant digits. For example, a blast within 1000 feet would be measured to the nearest tens of feet and a blast within 10,000 feet would be measured to the nearest hundreds of feet.

C. Receptor Locations and Frequency of Monitoring

The Rockfield Quarry Blast Impact Analysis, dated September 9, 2019 lists six (6) residential/commercial locations, four (4) wells, and the San Joaquin River embankment as receptors of concern. The closest receptor locations will be based on the location of the blast. In order to ensure that the criteria set forth in the Blast Impact Analysis are met, vibration measurements need to be taken at the closest residential/commercial property, the closest well, and at three points to the San Joaquin River embankment.

D. Application of Particle Velocity and Air Overpressure Control

The ground vibration and air overpressure control limits for the receptors are detailed in the Vibra-Tech Blast Impact Analysis Report. The ground vibration and air overpressure limits are summarized below for residential/commercial structures, water wells and the east embankment of the San Joaquin River.

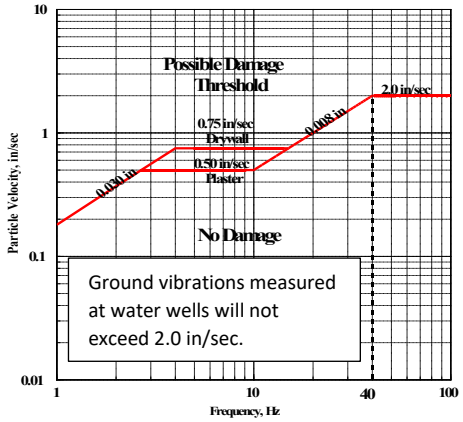


Figure 2 – Ground Vibration Criteria for Residential and Commercial Structures

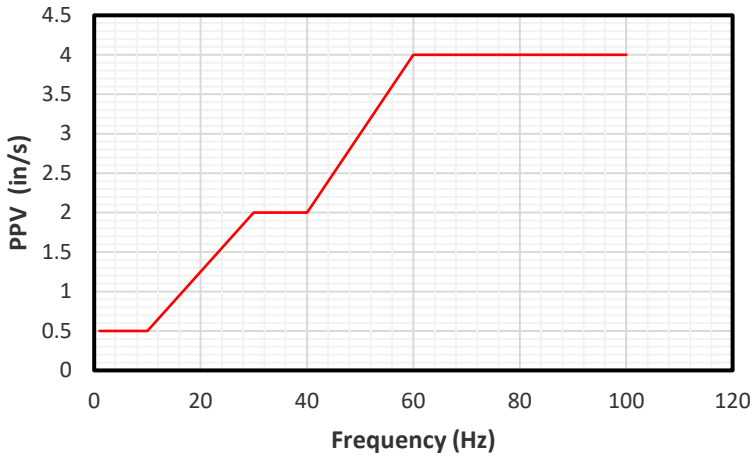


Figure 3 – Ground Vibration Criteria for East embankment of San Joaquin River

Lower Frequency Limits of Measuring System	Maximum Level in dB
0.1 Hz high-pass system	134 dB
2 Hz high-pass system	133 dB
5 or 6 Hz high-pass system	129 dB
c- slow (events not exceeding 2 sec duration)	105 dB

Table 1 – Air Overpressure limits for Residential and Commercial Structures

If the blasting operations at the Rockfield Quarry exceed the above referenced control limits for any single axis of ground vibration for any blast or the air overpressure control limit, CEMEX and their blasting contractor shall cease all blasting activities and provide notification to Fresno County. A corrective action plan will be submitted to Fresno County. The corrective action plan will give the blast design parameters and seismographic data and include any necessary proposed corrective action, which in their opinion will reduce ground vibration or air overpressure intensity.

E. Inspection of San Joaquin River Embankment

A pre-blast and post blast visual inspections of the portions of the San Joaquin Embankment that are located within 1,000 feet of each blast will be completed. These visual inspections will continue until blasts are at depths greater than 100 feet below the contact between alluvium and rock. The visual inspections will focus on signs of instability including slumping or cracking of the embankment. If any signs of instability are noted the operator will prepare a Corrective Action Plan in accordance with Section F below.

F. Corrective Action Plan

If the blast monitoring indicates that ground vibration or air overpressure exceed the criteria recommended by Vibra-Tech in Figures 2, 3, and Table 1 of this document or if flyrock exceeds the limits of the defined blast clearance zone, the operator will provide notification to Fresno County within 48 hours and identify changes to the blasting program that will be implemented to prevent future exceedances. The corrective action plan will require the immediate suspension of all blasting until the corrective action is implemented. A record of the Corrective Action Plan and the corrective actions implemented will be retained as per Section H.

G. Complaint Response Procedure

If the operation receives a blast vibration complaint, the date, time, name of complainant, complainant address, telephone number for complainant, nature of complaint, distance from blast to complainant, peak particle velocity and air overpressure level for seismograph closest to complainant, distance to seismograph from blast, and name of the person recording the complaint will be logged. The plant manager will be notified of the complaint and a return call will be made to the complainant, for complaints about which the Plant Manager has received notice. If damage is alleged by the complainant, the plant manager will arrange for a damage claim investigation from an independent third party.

H. Record Keeping

Blasting logs, drilling logs, blast videos, seismograph records and complaint logs will be retained for seven years. In addition, any Corrective Action Plans or corrective actions implemented will be recorded and retained. The blasting log will contain the full details of the drilling and blasting patterns used on site. At minimum, the Blast log will include the following:

- GPS Location for the blast
- Plan and section view of proposed drill pattern, including free face, burden, blast hole spacing, blast hole diameter, blast hole angle, lift height, and subdrill depth.
- Loading diagrams showing location, type, depth, and amount of explosives, primers, initiators, and stemming. The report will document charge weight/delay and total explosives consumed.
- Sketch of initiation sequence of blast holes, including delay times and delay system. Indicate on this sketch the location of GPS measurement.

I. Annual Reporting

An annual blast vibration monitoring report will be prepared and will summarize the results of the monitoring including comparison of the monitoring results to the applicable criteria. The report will include a graph with peak particle velocity on the X-axis and the corresponding frequency on the Y-axis. The graph will include the USBM Ground Vibration Criteria found in Section D - Figure 2 for comparison to the measured data. Data collected from the east embankment of the San Joaquin River will be plotted in a similar manner with the graph including the Ground Vibration Criteria found in Section D – Figure 3. Each blast will also be plotted on a graph showing Peak Air Overpressure vs. Blast Date from the seismograph closest to the nearest residential structure compared to USBM Air Overpressure limit found in Section D – Table 1.

The report will also include a regression analysis plot of peak particle velocity vs. scaled distance with the best fit and 95% confidence equations for the site. The report will also include a summary of blasting complaints and the results of any complaint investigations. The report will also provide a recommendation for modifying the prediction of blast-induced vibrations, if necessary, to improve the correlation of the predicted ground vibrations to the actual ground vibration measurements.

J. Annual Blasting Plan

An Annual Blasting Plan should be prepared and submitted to the County. The Annual Blasting Plan will identify the areas proposed for blasting and include proposed charge weight/delay limits for the designated areas. The proposed charge weight/delay limits will consider the results of the blast monitoring program and utilize the annual regression analysis plot of peak particle velocity vs. scaled distance with the best fit and 95% confidence equations for the site.

The charge weight/delay limits will be supported by calculations that maintain blast-induced vibrations below the following maximum values:

- Ground vibrations at residential structures, commercial structures, and groundwater wells shall be limited to those at or below the limits shown in the Vibra-Tech report, *Blast Impact Analysis, CEMEX Rockfield Quarry*, Sept 2019. Also shown in Section D Figure 2 of this document.
- Ground vibrations at the east San Joaquin River embankment shall be limited to those at or below the limits shown in the Vibra-Tech report *Blasting Induced Ground Vibration Effects on Structural Integrity of Nearby San Joaquin River Embankments*, May 2020. Also shown in Section D Figure 3 of this document.
- Air overpressures at residential or commercial structures shall be limited to those at or below the limits shown in in the Vibra-Tech report, *Blast Impact Analysis, CEMEX Rockfield Quarry*, Sept 2019. Also shown in Section D Table 1 of this document.
- In order to maintain the threshold of significance for human perception in the DEIR, ground vibration is limited to a ppv of 0.6 in/sec and air overpressure is limited to 0.01 psi as measured at occupied residential structures not owned by Cemex. These limits are documented in the Technical Note on Threshold of Significance for Human Response dated April 29, 2026.

If blasting is necessary outside of the areas indicated in the annual blast location plan a revised plan will be submitted to the County.

Flyrock Mitigation Plan

The purpose of rock blasting is to fracture and displace intact rock to facilitate its removal by mechanical equipment. This breakage and displacement occurs within a planned displacement zone called the muckpile. Rock fragments that are displaced beyond the planned displacement zone can be considered flyrock. The Mine Safety and Health Administration (MSHA) defines this area of expected blasted rock displacement as the blast area. The blaster-in-charge is responsible for defining the blast area and the clearance zone around the blast area. Inside the clearance zone the blaster-in-charge must evacuate all personnel and equipment prior to firing the blast. Outside of the clearance zone there should be no risk to personnel or equipment from flying rock fragments. Rock fragments that are displaced beyond the

clearance zone are called flyrock. The blaster-in-charge must develop and communicate a plan for every blast. This plan should

- Define the blast area
- Define an appropriate blast clearance zone based upon the proposed blast design, charging details and observed geologic conditions.
- Denote the location of warning signs outside the blast clearance zone
- Denote the location of guards outside the blast clearance zone to stop accidental entry into the clearance zone
- Define the warning whistles to be used to denote the imminent blast.

Flyrock is generated when the energy of the explosive is too close to the air/rock interface. The two primary origins for flyrock come from either the top of the blast area in the collar zone of the boreholes or from the vertical or sub-vertical free face of a bench blast. Flyrock can also originate from secondary blasting, where charges are placed in boulders to reduce oversize. Secondary breakage with explosives should be avoided at this site.

The key element of flyrock control is that explosive charges must have the appropriate degree of burial or confinement. The distance between the explosive and the air/rock interface is the charge burial distance. The appropriate charge burial distance will depend on the borehole diameter, explosive density, and the strength of the rock mass between the charge and the free surface. Flyrock can be reduced to extremely low levels with sufficient burial or confinement of explosive charges, but it can never be reduced to zero.

As stated earlier, the origin of flyrock is either from an area on the free face in front of a blast hole or the collar zone of the blast hole. The cause of flyrock from these two areas can usually be found to come from inadequate face burden or an inadequate length of stemming for a given hole diameter and explosive density. Mitigation measures for inadequate burden are:

- The blaster-in-charge must thoroughly examine the free face for signs of weak seams, voids, or cavities in the face that would serve as a zones of weakness for high pressure explosive gases to escape.
- Instrumentation and software are readily available for blasters to know the minimum burden anywhere along the length of a borehole for which a free face is available. Face profiles should be established in two dimensions for every face hole or in three dimensions for the entire face.
- In order to perform accurate face profile measurements, the free face must be clear of any muck material from previous blasts.
- The excavator should be prevented from over digging the face and toe area.
- An initial burden of 30 charge diameters should be maintained along all portions of the charge length. The burden can be changed as blasting progresses and experience is developed with the rock mass.
- Accurate drill logs must be provided to the blaster-in-charge that indicate the depth and thickness of any cavities, clay seams, or layers of unconsolidated/weaker material. If these are encountered the blaster must stem through these areas or provide other methods for preventing overloading.
- Accurate drill holes must be maintained and borehole deviation minimized. This is achieved through proper drill placement, leveling, alignment, and down pressure. If borehole deviation is suspected a borehole deviation survey should be conducted before loading.

Mitigation measures for inadequate length of stemming are:

- Measure all holes prior to loading to ensure no holes have blocked and holes are the planned drill depth.
- Measure explosive column rise during bulk loading to make sure holes are not overloaded. This is extremely important with gassing products.
- Utilize scaled depth of burial calculations to determine proper stemming heights for a given hole diameter and explosive density. A scaled depth of burial of 3.4 to 3.5 should be used for the initial stemming length calculation.
- The loading density should not be significantly higher than designed through incorrect gassing of emulsion products. Cup density[1] checks should occur frequently during the loading process.
- Angular crushed stone approximately 1/10th the blasthole diameter should be used as stemming material. When stemming the blastholes, the loader must ensure that the stemming column is continuous and the stemming material does not bridge the hole.

Other blast design errors that can cause flyrock from the top of the blast area are caused by too much confinement. If there is excessive face burden or inadequate time between rows of blastholes, the rock mass of the free face may not move out fast enough. This causes later holes in the design to be more confined with the explosive energy left with nowhere to escape except vertically.

Every blast should be recorded with a video camera from two locations. One location should be able to observe the free face of the rock mass containing the loaded blastholes and the other location should be at 90^{o} to the first location and be able to observe the top of the blast block and profile of the free face. These videos should be reviewed after each blast for any signs of ejected material beyond the clearance zone or gases coming from the free face or the collar zone of the blastholes. If these signs are observed details from the drill logs, burden profiles, blast reports, and seismograph records should be reviewed and appropriate corrective actions should be considered.

The above recommendations are made for dry ground conditions. Water saturated ground conditions can aid in the transmission of explosive pressure. This increased pressure can increase the potential for flyrock and extend the maximum displacement range of rock material. The blaster must apply additional factors of safety to his design in saturated ground conditions.

Groundwater and Surface Water Contamination Mitigation Plan

Best Management Practices for Blasting.

All activities related to blasting shall follow Best Management Practices (BMPs) to prevent contamination of groundwater and surface water including preparing, reviewing and following an approved blasting plan; proper drilling, explosive handing and loading procedures; observing the entire blasting procedures; evaluating blasting performance; and handling and storage of blasted rock.

[1] Cup Density – As a quality control measure a cup of known volume and mass is filled with the bulk explosive product after mixing the gassing agent. As the explosive product rises in the cup, the product is slashed to keep the cup volume constant. The explosive weight in the cup is measured and the density is calculated.

A. General Requirements

1. Handling of all explosive products shall be limited to qualified and licensed blasting contractors at all times.
2. Blast designs and loading controls shall be prepared by qualified blasting contractors or other experts to ensure complete detonation.
3. No explosives will be stored on site. All explosives will be delivered on site for each blast event, in D.O.T. certified commercial trucks. Any unused explosives material will be removed from the site after blasting is complete and returned to the point of origin. All local, state and federal D.O.T. regulations governing the transportation and handling of explosives will be obeyed.
4. All personnel transporting explosives to the site and onsite will carry a commercial driver's license with HAZ/MAT endorsement.
5. A current inventory of the types of explosive materials to be used on site, along with Material Safety Data Sheets, will be maintained onsite by qualified personnel.

B. Loading Practices

The following blasthole loading practices to minimize environmental effects will be followed:

1. Drilling logs shall be maintained by the driller and communicated directly to the blaster. The logs shall indicate depths and lengths of voids, cavities, and fault zones or other weak zones encountered as well as groundwater conditions.
2. Explosive products shall be managed on-site so that they are either used in the borehole, returned to the delivery vehicle, or placed in secure containers for off-site disposal.
3. Spillage of explosive materials around the borehole shall either be placed in the borehole or immediately cleaned up and properly disposed of in strict accordance with applicable state and federal regulations.
4. Loaded explosives will be detonated as soon as possible and will not be left in the blastholes overnight, unless weather or other safety concerns reasonably dictate that detonation should be postponed.
5. Loading equipment will be cleaned in an area where wastewater can be properly contained and handled in a manner that prevents release of contaminants to the environment.
6. Blasting contractors will follow industry accepted loading practices for priming, stemming, decking and column rise so that good continuity in the column load is maintained to promote complete detonation.

C. Explosive Selection

The following BMPs shall be followed to reduce the potential for groundwater contamination when explosives are used:

1. Blast holes shall be inspected prior to placement of explosive material to determine if water is present. In cases where the boreholes have standing water or are moist, explosive products shall be selected that are appropriate for site conditions and safe blast execution.
2. Explosive products will be selected that have the appropriate water resistance for the site conditions present to minimize the potential for hazardous effect of the product upon groundwater.

D. Muck Pile Management

Muck piles (the fragmented pieces of rock left after the blast) will be managed in a manner to reduce the potential for contamination by implementing the following measures:

1. Remove the muck pile from the blast area as soon as reasonably possible.
2. Manage the interaction of blasted rock piles and storm water to prevent contamination of groundwater or surface water.

APPENDIX A

Re:mote™

MONITORING

VIBRATION

Re:mote Vibration Monitoring System

Ground vibration comes from many sources in the construction, mining and energy development industries—but no matter where it comes from, it can create concerns for equipment, structures or adjacent neighbors.

The GeoSonics/Vibra-Tech Re:mote Vibration Monitoring System is a critical tool to help monitor and analyze vibration caused by construction activities. Our system will address project needs and provide experienced, third-party analysis of the collected data to help understand neighbor concerns. We use state-of-the-art instrumentation above standard blasting seismographs. This advanced technology allows two way communication between the operator and the seismograph, allowing downloads and instrument programming and diagnosis from anywhere in the world. Our capabilities far exceed others in the field, providing results of unassailable integrity.

Let us show you how the GeoSonics/Vibra-Tech Re:mote Vibration Monitoring System allows you to get data to project personnel without requiring them to spend hours in the field, saving you operational time and resources.

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The GeoSonics/Vibra-Tech Re:mote Vibration Monitoring is a web enabled remote monitoring and data retrieval system designed for remotely accessed equipment with a managed web based interface for instrument setup and basic access to data retrieved from devices in the field. Hardware resources and overall data processing and analysis systems are managed and maintained by a centralized group system administrators, qualified support personnel and field technicians.

3000-Series Portable Vibration Monitors and IP-SR Re:mote™ Monitors have four recording modes: 1) triggered – either seismic or sound, 2) continuous with frequency (histogram), Dual mode (triggered mode plus histogram data without frequency), and 3) sustained trigger. Sustained trigger mode permits collection of consecutive waveform data up to a cumulative total of approximately 4.2 minutes. Data can be collected in either imperial (US customary) or metric units.

IP-SR Re:mote Vibration Monitor Specifications

STANDARD FEATURES:

- External geophone meets ISEE density recommendations.
- Flexible interface and extensive options available for custom configurations.

STANDARD FEATURES (Continued):

- Two (2) independent threshold alarm output ports.
- Imperial and metric operation.
- Designed & manufactured in the USA.

GENERAL:

- Weight.....7 lbs (6.7 kg)
- Dimensions..... 6 in x 8 in x 5.0 in
- Operating Temperature: 0 to 130° F (-18 to 55° C).

OPTIONAL ACCESSORIES:

- Hydrophones (instrument modifications required).
- Accelerometers to 500 g's (instrument mods. req'ed).
- Amplifiers (10x-100x).
- Optically isolated dual alarm control for dialers, pagers and remote alarm notifications.

RECORDING MODES:

Seismic Trigger:	Resolution:	0.0025 in/sec. (0.06 mm/sec.).
	Range:	Up to 5.120 in/sec. (130 mm/sec.)(Other ranges available).
	Frequency Response Range:	2 to 250 Hz (3 dB) / 2 to 1,000 Hz (Nyquist).
	Sampling Rate:	Up to 2,000 / second / channel.
	Recording Intervals:	1 to 15 seconds.
	Accuracy:	5% within one year (multi-frequency calibrated).
	Calibration:	Internal dynamic.
Sound Trigger:	Range (Linear):	82 to 148 dB (other ranges available).
	Frequency Range (3 dB):	2 to 250 Hz (3 dB) / 2 to 1,000 Hz (Nyquist).
	Accuracy:	5% within one year (multi-frequency calibrated).
	Calibration:	Internal electronic.
Continuous (Histogram):	Vibration Data:	Peak particle velocity and frequency for L, T & V.
	Recording Intervals:	Selectable: 1 to 60 seconds.
	Sound Data (Linear):	82 to 148 dB (other ranges available).
Sustained Trigger:	Multiple Event Recordings:	Consecutive waveform recordings up to 4.2 minutes.
Dual Mode:	Operating Specifications	Same as for Triggered and Histogram w/o frequency

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When it comes to blasting and environmental issues, Re:mote can help you meet your monitoring needs.
Your Data. Anywhere. Anytime.

APPENDIX I-5
PAVEMENT HAZARD IDENTIFICATION AND MITIGATION TECHNICAL MEMORANDUM

BENCHMARK RESOURCES

PETERS ENGINEERING GROUP
A CALIFORNIA CORPORATION

To: Ms. Christine M. Jones
CEMEX

From: John Rowland, PE, TE

Subject: Pavement Hazard Identification and Mitigation
CEMEX Rockfield Quarry Modification Project
Fresno County, California

Date: February 24, 2026

Peters Engineering Group prepared a traffic impact study for the CEMEX Rockfield Quarry Modification Project (hereinafter referred to as "the Project") and presented the results in a report dated November 15, 2019 (TIS) that was utilized in the Draft Environmental Impact Report dated December 2024 (DEIR). The purpose of this memorandum is to provide additional information related to identifying pavement hazards, specifically determining the severity of potholes based on size, and recommendations for mitigating the potential pavement hazard.

The U.S. Department of Transportation, Federal Highway Administration (FHWA) publication entitled *Distress Identification Manual for the Long-Term Pavement Performance Program* (Publication No. FHWA-HRT-13-092 Revised May 2014) describes potholes as bowl-shaped holes of various sizes in the pavement surface with a minimum plan dimension of 150 millimeters (mm) (approximately 6 inches). To qualify as a pothole, a 6-inch-diameter circle must fit within an irregularly-shaped pothole. FHWA describes the severity of potholes as follows:

- Low severity: less than 25 millimeters (mm) deep (approximately 1 inch)
- Moderate severity: 25 to 50 mm deep (approximately 1 to 2 inches)
- High severity: greater than 50 mm deep (approximately 2 inches)

The Transportation Research Board (TRB) *Circular Number E-C134, Influence of Roadway Surface Discontinuities on Safety, State of the Art Report* dated May 2009 states: "Holes in the pavement have to be a foot or more long and wider than a tire to be hazardous." TRB also states: "The greatest influence of holes on safety may be the hazard caused by drivers trying to avoid them."

Although it would be difficult to identify the cause of potholes, or the proportionality of responsibility for causing potholes, in the vicinity of the Project site, it is our professional opinion that the Project can mitigate its contribution to a hazardous pavement condition or a pavement safety concern by repairing highly-severe potholes.

It is recommended that, as a Project mitigation measure, until such time as other parties have entered agreements with the County of Fresno regarding sharing of these costs, at which time the Project operator's obligations would be reduced by such sharing, the Project operator shall repair potholes greater than 6.0 inches in width, length, or diameter, and greater than 2.0 inches in depth, within the travel lanes on Friant Road between North Fork Road and Willow Avenue (inclusive of the area within the intersections) as requested by the County of Fresno in response to substantiated reports from the public or as identified through County pavement condition surveys. The repair cost, including permits and fees, shall be the responsibility of the Project. Work shall be coordinated with the County of Fresno Public Works department, including closing lanes and maintaining public safety in accordance with the applicable County permits.

With the application of this mitigation measure, the pavement hazard impact would be mitigated to below a level of significance.

APPENDIX I-6
STATE ROUTE 41/FRIANT ROAD INTERCHANGE ANALYSIS TECHNICAL MEMORANDUM

BENCHMARK RESOURCES

PETERS ENGINEERING GROUP
A CALIFORNIA CORPORATION

TECHNICAL MEMORANDUM

To: Mr. J. Scott Miller
Mitchell Chadwick

From: John Rowland, PE, TE
Peters Engineering Group

Subject: Interchange Analysis – State Route 41 and Friant Road
CEMEX Rockfield Quarry Modification Project
Fresno County, California

Date: May 28, 2026

The purpose of this memorandum is to assess potential effects of the CEMEX Rockfield Quarry Modification Project (Project) contribution of vehicle trips at the interchange of State Route (SR) 41 and Friant Road. An aerial view of the interchange is presented in the attached Figure 1. This analysis focuses on observed conditions at the freeway off ramp intersections, the on ramps, and along Friant Road between approximately Nees Avenue and Fresno Street. The analyses include consideration of available traffic volume data and the relative effect of trips expected to be generated by the Project, and concludes that the trips generated by the Project will be within the normal variations and would not be expected to cause a significant change in operations or measurably affect average queue lengths, traffic signal operations, or ramp operations.

OBSERVED CONDITIONS

Site visits were conducted on Tuesday, May 19, 2026 to observe PM peak hour conditions and on Wednesday, May 20, 2026 to observe AM peak hour conditions. The observations are summarized below.

Tuesday, May 19, 2026: PM peak hour

The site visit was conducted from approximately 4:30 PM to just after 6:00 PM.

Westbound Friant Road: Traffic queues were observed in the right lane of westbound Friant Road approaching the SR 41 northbound and southbound on ramps. The queues did not appear to result from ramp metering or congestion on the ramps, but rather from very high lane utilization in the right lanes, with volume likely exceeding capacity for brief periods and long queues resulting during the red interval at the traffic signal for the northbound off ramp. The queues were observed extending to Fresno Street occasionally, but the observed queues did not block movements from the intersection of Friant Road and Fresno Street. The northbound on ramp is in advance of the signal limit line and was flowing freely, so queues were primarily

caused by traffic approaching the southbound on ramp. Queues were not excessive for through traffic on westbound Friant Road.

Eastbound Friant Road: Queues were observed in the right lane on eastbound Friant Road approaching the SR 41 southbound and northbound on ramps, and occasionally would extend to Nees Avenue and block movements from the intersection of Blackstone and Nees Avenues. The queues did not result from ramp metering or congestion on the ramps, but rather from high lane utilization in the right lane, with volume likely exceeding capacity for brief periods.

Queues were generally not excessive for through traffic on eastbound Friant Road, but the short spacing between Fresno Street, the northbound off ramp, and the southbound off ramp results in eastbound queues extending back to the next intersection. Eastbound Friant Road at times had the appearance of being completely backed up to the northbound off ramp, but queues on Friant Road generally clear during each traffic signal cycle.

Northbound SR 41 off ramp to Friant Road: Queues on the off ramp between 5:00 and 6:00 PM frequently were observed to extend approximately half a mile from Friant Road, primarily in the right lane for vehicles intending to turn right and proceed eastbound on Friant Road. It was estimated that vehicles making this movement would require two to four traffic signal cycles before passing through the intersection. There were periods when the right turn from the off ramp appeared to be completely blocked by eastbound traffic on Friant Road backed up from Fresno Street. However, the right turn from the off ramp typically flowed well once the green interval at the traffic signal at Fresno Street cleared eastbound Friant Road.

Southbound SR 41 off ramp to Friant Road: It appeared that there were brief periods during which long queues occurred, but it appeared that the queues were able to clear during each traffic signal cycle. No blockage from traffic on eastbound Friant Road extending from the signal at the northbound off ramp was observed.

Wednesday, May 20, 2026: AM peak hour

The site visit was conducted from approximately 7:30 AM to just after 8:00 AM.

Westbound Friant Road: Traffic queues were observed in the right lane of westbound Friant Road approaching the SR 41 northbound and southbound on ramps. The queues appeared to result from ramp metering on the southbound on ramp. It appears that Caltrans has implemented queue override techniques to prevent excessive spillback on Friant Road. Specifically, it was observed that the ramp meters on the southbound on ramp would occasionally stay green for extended periods of time, which would clear nearly the entire queue along Friant Road, and then switch back to typical metering with two cars per green in each lane. The queues occasionally appeared to extend to Fresno Street; however, at no time was the queue observed to block movements from the intersection of Friant Road and Fresno Street. The northbound on ramp is in advance of the signal limit line and was flowing freely, so queues were primarily caused by traffic approaching the southbound on ramp. Queues were not excessive for through traffic on westbound Friant Road. It was observed that queues for the left lane on westbound Friant Road at the northbound ramps typically cleared during each traffic signal cycle.

Eastbound Friant Road: Excessive queues were not observed on eastbound Friant Road. Traffic volumes appeared to be substantially less than the PM volumes.

Northbound SR 41 off ramp to Friant Road: Queues during the AM peak hour were much shorter than during the PM peak hour. The longest queues observed occurred for very short

periods and were likely only a few hundred feet long. Queues appeared to clear during each traffic signal cycle and no blockage was observed.

Southbound SR 41 off ramp to Friant Road: It appeared that that the queues were able to clear during each traffic signal cycle. No blockage was observed.

TRAFFIC VOLUMES

Traffic volume data available on the Caltrans web site (https://dot.ca.gov/programs/traffic-operations/census) was obtained for SR 41 freeway mainline volumes and for on ramp and off ramp volumes at Friant Road. Data were also obtained from intersection turning movement counts available in the *Vulcan Materials Austin Quarry Updated Traffic Impact Study Report* dated January 2016. The intersection turning movement counts indicate that the total volume of vehicles entering the intersection of Friant Road and the SR 41 southbound ramps in 2012 was 7,524 during the AM peak hour and 9,848 during the PM peak hour. The intersection turning movement counts indicate that the total volume of vehicles entering the intersection of Friant Road and the SR 41 northbound ramps in 2012 was 7,976 during the AM peak hour and 10,746 during the PM peak hour.

Ramp and mainline volumes available from Caltrans between 2013 and 2024 were reviewed to identify the actual historic growth rate near the interchange. The table below presents the historic volume, the most recent volume available, and growth rate data.

Table 1
Historic Volumes and Growth Rates

Location	Year	Volume	Year	Volume	Annual Growth Rate
SR 41 north of Friant Road	2013	43,000	2024	59,000	2.92%
SR 41 south of Friant Road	2013	76,000	2024	86,000	1.13%
SR 41 NB off to Friant Road	2015	24,900	2023	22,000	-1.54%
SR 41 NB on from EB Friant	2015	4,400	2023	4,600	0.56%
SR 41 NB on from WB Friant	2015	3,900	2023	5,800	5.09%
SR 41 SB off to Friant Road	2015	7,800	2023	9,800	2.89%
SR 41 SB on from EB Friant	2015	10,800	2023	11,500	0.79%
SR 41 SB on from WB Friant	2015	11,800	2023	12,700	0.92%

To estimate 2026 volumes, it is considered appropriate to apply the growth rates to the locations identified in Table 1 and to assume an annual growth rate of one percent on Friant Road. Applying these growth rates to the intersection turning movement count data, and assuming an annual growth rate of one percent on Friant Road itself, the estimated year 2026 volumes at the ramp intersections are as follows:

- intersection of Friant Road and the SR 41 southbound ramps: 8,996 during the AM peak hour and 11,873 during the PM peak hour.
- intersection of Friant Road and the SR 41 northbound ramps: 8,821 during the AM peak hour and 11,419 during the PM peak hour.

Table 2 presents the Project's net peak-hour trips at the Friant Road / SR 41 interchange and also presents the total volume estimated at the intersection with the addition of Project trips.

Table 2
Percentage of Net Project Trips at State Route 41 / Friant Road Intersections

Location	AM Peak Hour			PM Peak Hour		
	Net Project Trips	Total Volume	Project Percentage	Net Project Trips	Total Volume	Project Percentage
Friant / SR 41 SB Ramps	27	9,023	0.3%	0	11,873	0.00%
Friant / SR 41 NB Ramps	48	8,869	0.5%	0	11,419	0.00%

Note: Total volume includes net Project trips. Net Project trips are calculated using data from the Traffic Impact Study – Proposed CEMEX Rockfield Modification Project (Peters Engineering Group, November 15, 2109; Appendix I-1 of the Project Draft EIR).

DISCUSSION

It should be noted that operational analyses for conditions in which demand (volume) exceeds capacity and/or queues are extremely long (such as those observed under existing conditions as described above) produce results that are highly sensitive to assumptions actual arrival patterns, storage limitations, and queue interactions. Consequently, such analyses are not able or expected to provide precise predictions regarding the operational effect of the relatively small number of Project-generated trips. Therefore, Project-specific operational analyses to attempt to define levels of service and estimate queues have not been performed and are not expected to provide useful output given the very small percentage of net Project trips to existing traffic conditions at the subject locations.

Moreover, urban intersections typically experience daily fluctuations in traffic volumes, with a commonly-accepted standard that traffic volumes generally fluctuate up to 10 percent. The "10% rule" is described in *Evolving Standard Validation Practices for Traffic Data* dated February 8, 2022 by Fehr & Peers (and also referencing the Federal Highway Administration *Traffic Monitoring Guide* Updated October 2016) as follows: "Referring to a collection of counts for only one, or occasionally two, weekdays to represent typical weekday traffic volumes for an area. The presumption is that one to two days of counts would generally fall within +/-10% of the typical weekday volume." As such, the existing conditions peak-hour traffic volumes may fluctuate by several hundred per peak hour, perhaps up to as much 900 vehicles during the AM peak hour.

The net Project trips at the Friant Road / SR 41 interchange are a very small fraction of the total traffic volumes and are operationally negligible with respect to the total volumes at the intersections. During the AM peak hour the Project trips represent half a percent or less of the total volume, and no net Project trips are expected for typical average conditions during the PM peak hour. Project truck trips are expected to be present on any given approach to the intersections at a rate of substantially less than one truck per minute, and would contribute a negligible effect on overall traffic operations. Considering the daily fluctuations in traffic volumes typically expected in urban areas, the trips generated by the Project will be within the normal variations that would occur under existing conditions without the Project and are not expected to cause a significant change in operations or measurably affect average queue lengths, traffic signal operations, or ramp operations at the SR 41 and Friant Road interchange.

STATE ROUTE 41 / FRIANT ROAD INTERCHANGE
FRESNO, CALIFORNIA

APPENDIX L
REVISED NOTICE OF AVAILABILITY

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

FROM:
David Randall, Senior Planner
Fresno County Public Works and Planning Department
Divisions of Public Works and Planning
2220 Tulare St., 6th Floor
Fresno, CA 93721

SUBJECT: SCH No. 2020060123 Revised Notice of Availability of a Draft Environmental Impact Report (EIR) for the Proposed CEMEX Rockfield Quarry Modification Project (EIR No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667)

The County of Fresno has extended the public review period for the Rockfield Quarry Expansion Project (SCH No. 2020060123) to ensure that all interested parties have adequate time to review the Draft EIR and provide comment. The public review period stated in the original Notice of Availability (NOA) was January 2, 2025, to February 17, 2025. The revised NOA, submitted with this memorandum, has a public review period of January 2, 2025, to March 10, 2025. The NOA was also revised to eliminate the reference to the public information meeting which was held on January 16, 2025. No other changes to the project or the NOA have been made.

FROM: David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capitol Projects Division
2220 Tulare St., 6th Floor,
Fresno, CA 93721

SUBJECT: Reissued Notice of Availability of a Draft Environmental Impact Report (EIR) for the proposed modification to the existing CEMEX Rockfield Quarry (EIR No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667)

SUMMARY: The County of Fresno (County) is releasing this Notice of Availability (Notice) to announce an extension of the comment period, and to notify additional agencies that the County has prepared a Draft EIR in compliance with the California Environmental Quality Act (CEQA) for the CEMEX Rockfield Quarry Modification Project (Project) situated in an area of unincorporated Fresno County, California (see APNs and Longitude and Latitude listed below). Fresno County, as the local land use authority, may permit mining operations on unincorporated lands through the Conditional Use Permit process accompanied by approved Reclamation Plans in accordance with Section 834.4.220 of the Fresno County Zoning Ordinance. The document serves as the second Notice for this project and is being reissued to broaden the distribution list of recipients and to extend the comment period.

CEMEX Construction Materials Pacific LLC (hereinafter referred to as the "Applicant") has submitted an application to the County for two Unclassified Conditional Use Permits (CUP Application Nos. 3666 and 3667) to facilitate the continuation and modification of the Rockfield Quarry's existing operations in aggregate mining and processing, which includes rock, sand, and gravel. The project encompasses two distinct locations situated approximately two miles apart. The first location, known as the Plant Site, is positioned on the west side of North Friant Road, between North Willow Avenue and Little Dry Creek. The second location, referred to as the Quarry Site, is also on the west side of North Friant Road, situated between Bluff View Avenue and Lost Lake Road. The County has assumed the role of the lead agency for the preparation of the Environmental Impact Report (EIR No. 7763) for this project and is issuing this Notice in accordance with Section 15087 of the CEQA Guidelines.

Assessor Parcel Numbers (APNs):

Plant Site APNs: 300-070-56S, 300-070-57S, 300-070-58S, 300-070-59S, and 300-070- 60S (Latitude: 36°55’44” N / Longitude: 119°44’12” W)

Quarry Site APNs: 300-040-19, 300-040-20, 300-080-01S, 300-250-12, and 300-310-01 (portion) (Latitude: 36°57’20” N / Longitude:119°44’00” W)

PROJECT DESCRIPTION: The Applicant is requesting the continuation and modification of its current aggregate (rock, sand, and gravel) mining and processing operations. The Project includes the following two project life stages that are estimated to span 100 years:

Stage 1:

- Continue concurrent operations at both the Quarry Site and the Plant Site for up to 30 Years.
- At the Plant Site, the existing aggregate processing plant would continue to be used to wash, screen, crush and sort aggregate mined on site.
- At the Quarry Site the hard rock deposit that lies beneath the alluvial deposit currently being mined, would be mined. Excavation of the hard rock would require drilling and blasting and would occur to a depth of approximately 600-feet below ground surface (bgs).
- An aggregate processing plant would be added to the Quarry Site to wash, screen, crush, and sort the hard rock to be mined on site.
- Aggregate products produced at the Quarry Site used at the asphalt and ready-mix plants at the Plant Site would be transported approximately 2 miles south to the Plant Site via Friant Road in the same manner as the raw aggregate currently being transported from the Quarry Site to the Plant Site for the existing operations.
- Other aggregate products produced at the Quarry site not used by the asphalt and ready-mix plants at the Plant Site would be sold directly from the quarry.
- The existing asphalt plant at the Plant Site would be replaced with a modern Hot Mix Asphalt (HMA) plant.
- Periodic use of a portable crushing plant to recycle come-back concrete would continue with the addition of asphalt recycling and import of concrete debris to recycle into crushed miscellaneous base (CMB) and asphalt debris to be recycled asphalt product (RAP).
- Mine the remaining alluvial deposit at the Plant Site to a depth of approximately 85-feet below ground surface (bgs).
- Relocation of the plant operations at the Plant Site to the Quarry Site in less than 30 years to recover the deposit beneath the plants.
- Upon approval of project permits, the combined annual sales of aggregate from both sites are estimated to ramp up from the 1.4 MT allowed under the current

permits to 2.0 MT in approximately five years and up to 3.0 MT in approximately 10 years.

- When mining is completed at the Plant Site, reclamation would consist of approximately 122 acres of open space, riparian and open water wildlife habitat.

Stage 2:

- Continue hard rock mining and processing operations only at the Quarry Site for approximately 70 more years. The ready-mix concrete plant and the hot-mix asphalt plant would be relocated from the Plant Site to the Quarry Site.
- The periodic use of a portable plant to recycle concrete and asphalt debris (including imported) into CMB and RAP would be added to the Quarry Site.
- All aggregate products produced at the Quarry site would be used by the on-site asphalt and ready-mix plants or sold directly from the Quarry Site. The interplant haul would cease.
- Stage 2 operations are estimated to have annual aggregate sales of 3.0 MT.
- Reclamation of the Quarry Site would create approximately 349 acres of open space, riparian and open water wildlife habitat.

SIGNIFICANT ENVIRONMENTAL EFFECTS: The Draft EIR identified the following significant and unavoidable impacts. All remaining impacts would be significant or potentially significant prior to the implementation of mitigation measures but would be reduced to less than significant levels with mitigation applied.

- Aesthetics and Visual Resources: The project would have a substantial adverse effect on a scenic vista and would substantially degrade the existing visual character or quality of public views of the project sites from two locations. Mitigation would require the exposed rock of the quarry pit wall to be stained to reduce contrast and visibility.
- Transportation: The project would cause traffic delays at two intersections which cannot be fully mitigated due to the availability of funding for necessary improvements.

DOCUMENT AVAILABILITY: The Draft EIR and all supporting technical and reference documents are available for review at the following locations:

- Fresno County Public Works and Planning Department Current Planning Counter: 2220 Tulare St., Annex Suite B Fresno, CA 93721
- CEQAnet Web Portal (SCH #2020060123): https://ceqanet.opr.ca.gov/

- Fresno County Website (Cemex Rockfield Expansion): https://www.fresnocountyca.gov/eir7763

PUBLIC COMMENT: Due to the time limits mandated by state law, the public agencies and members of the general public should provide written comments on the Draft EIR to the County by 5:00 PM on March 10, 2025. Written comments on the Draft EIR should be sent to the following address:

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capitol Projects Division
2220 Tulare St., 6th Floor.
Fresno, CA 93721

Or via e-mail with subject line "CEMEX Rockfield Quarry Modification Project EIR" to:
DRandall@FresnoCountyCA.gov

This Notice supersedes all previous Notices of Availability. Requests to be provided future public notices for this project may be sent to the same email or address above.

Following the public review and comment period, the County will respond to all written comments received on the environmental analysis in the Draft EIR. The responses, along with any modifications to the Draft EIR, will be compiled into a response-to-comments document. The response-to-comment document, along with the Draft EIR and its appendices, will form the Final EIR for the proposed project. In accordance with CEQA (Section 21092.5), the Final EIR, will be made available at least 10 days before certification.

APPENDIX M
DRAFT EIR COMMENT LETTERS

APPENDIX M-1
PUBLIC AGENCIES COMMENT LETTERS (LETTERS #1-15)

FRESNO COUNTY FIRE

PROTECTION DISTRICT
103

1700 Jensen Ave, Ste

Sanger, California 93657
Telephone: (559) 319-044
Fax: (559) 272-2410

January 28, 2025

David Randall, Development Services Division
County of Fresno
Fresno County Public Works & Development Services
2220 Tulare Street, Suite A
Fresno, CA 93721

Transmitted by Email to: drandall@fresnocountyca.gov

RE: **Reference # DRAFT EIR#7763/CUP#3666 & #3667**
Name CMEX CONSTRUCTION MATERIALS PACIFIC LLC
Address
City, State,Zip

Dear Mr. Randall:

Comment 1-1

Fresno County Fire Protection District (FCFDP) has received notice of this project, and has not identified any significant concerns. FCFPD has no comment for this project at this time. If future development is sought, your project/development will be subject to the requirements of the current Fire Code and Building Code when a building permit or certificate of occupancy is sought. Your project/development may be required to annex into the Community Facilities District No. 2010-01 of the Fresno County Fire Protection District.

Please feel free to contact me at (559) 319-0400 with any questions, comments and/or concerns.

Sincerely,

DUSTIN HAIL
District Fire Chief

By

Larry Brown

LARRY BROWN, SENIOR FIRE INSPECTOR
Fire Prevention

From:	Jones, Keyomi L@DOT
To:	Randall , David A.
Cc:	Padilla, Dave@DOT
Subject:	Rockfield Quarry Modification Project EIR No. 7763 and Unclassified CUP Application Nos. 3666 and 3667 Request for Comments
Date:	Monday, February 24, 2025 11:56:43 AM
Attachments:	image001.png image002.png image003.png image004.png

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good morning David,

The Rockfield Quarry Modification Project EIR No. 7763 and Unclassified CUP Application Nos. 3666 and 3667 Summary document describes the proposed continuation and modification of the aggregate mining and possessing operations; however, the documents provided are from original proposed operation. The CEMEX Rockfield Modification Project Traffic Impact Study (2019), VMT Letter Addendum to Traffic Impact Study (2020), Scoping Meeting Agenda (2020) are all out of date. The documents concerning this modification should be forwarded for review.

Comment 2a-1

Thank you,

Keyomi Jones, MBA
Associate Transportation Planner
Caltrans District 6|Transportation Planning
Local Development Review Branch

Mobile 559-981-7284
Web www.dot.ca.gov | **Email**
keyomi.jones@dot.ca.gov
1352 W. Olive Avenue|Fresno, CA 93728

California Department of Transportation

DISTRICT 6 OFFICE
1352 WEST OLIVE AVENUE |P.O. BOX 12616 |FRESNO, CA 93778-2616
(559) 981-7284| FAX (559) 488-4195 | TTY 711
www.dot.ca.gov

February 10, 2026

FRE-41-R31.702
Cemex
Draft Environmental Impact Report No. 7763
Conditional Use Permit Nos. 3666 and 3667
GTS #: https://ld-igr-gts.dot.ca.gov/district/6/report/19525

SENT VIA EMAIL

Mr. Tawanda Mtunga, Principal Planner
Fresno County -PWP
2220 Tulare St. 6th Floor
Fresno, CA 93723
Tmtunga@fresnocountyca.gov

Dear Mr. Mtunga:

Caltrans has completed the review of the Draft Environmental Impact Report No. 7763 for Conditional Use Permit Nos. 3666 and 3667. CUP Application No. 3666 proposes to amend the approval of the Plant Site, previously approved under CUP Nos. 2235, 3034, and 3094. CUP Application No. 3667 proposes to amend the approval of the Quarry Site, previously approved CUP Nos. 367, 2032, 3063, and 3093.

The project site is located north of State Route (SR) 41/Friant Road interchange. Comment 2b-1

The mission of Caltrans is to provide a safe and reliable transportation network that serves all people and respects the environment. The Local Development Review (LDR) process reviews land use projects and plans through the lenses of our mission and state planning priorities of infill, conservation, and travel-efficient development. To ensure a safe and efficient transportation system, we encourage early consultation and coordination with local jurisdictions and project proponents on all development projects that utilize the multimodal transportation network.

Caltrans provides the following comments consistent with the State's smart mobility goals that support a vibrant economy and sustainable communities:

1. The CEMEX Rockfield Modification Project Traffic Impact Study (2019) is outdated and no longer reflective of current or future conditions. The study neglects the intersections of Friant Road with the State Route 41 interchange ramps despite their proximity to and functional relationship with the project (Comment documented in the Technical Memorandum - Response to Comments on Traffic Impact Study, dated Comment 2b-2

December 17, 2020, with a cost per trip table).

Vehicle queues are not properly addressed at or near this interchange. Queues from the local road intersections (Fresno Street and Nees Avenue) along Friant Road that extend to the ramp intersections are a concern. These conditions, along with potential off-ramp queues spillback, should be analyzed to assess operational and safety impacts.

2. The Traffic Impact Study recommends improvements to the SR 41 / SR 145 intersection. Given the extent of the modifications recommended, an Intersection Safety and Operational Assessment Process (ISOAP) would be required prior to Caltrans' consideration of intersection modifications within State right-of-way. Comment 2b-3

   The ISOAP Guide provides a data-driven, performance-based framework incorporating the Safe System Approach to screen intersection strategies and identify optimal solutions for new or improved intersections. ISOAP objectively helps select intersection control and geometric designs for the expected users within the context of an intersection's location.

If you have any other questions, please call or email: Keyomi Jones, Associate Transportation Planner at (559) 981-7284 or keyomi.jones@dot.ca.gov.

Sincerely,

Mr. Dave Padilla, Branch Chief,
Local Development Review

From: Jennifer Laird
To: Randall , David A.
Cc: Mtunga, Tawanda; Motta, Chris
Subject: RE: REISSUED NOTICE OF AVAILABILTY OF DRAFT EIR- CEMEX ROCKFIELD QUARRY
Date: Wednesday, March 5, 2025 8:24:19 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good Morning

Thank you for forwarding the documents.

Thank you

Jennifer Laird | Executive Assistant to Director
Planning & Development Department
Jennifer.Laird@Fresno.gov

From: Randall , David A. <drandall@fresnocountyca.gov>
Sent: Tuesday, March 4, 2025 4:52 PM
To: Jennifer Laird <Jennifer.Laird@fresno.gov>
Cc: Mtunga, Tawanda <tmtunga@fresnocountyca.gov>; Motta, Chris <CMotta@fresnocountyca.gov>
Subject: RE: REISSUED NOTICE OF AVAILABILTY OF DRAFT EIR- CEMEX ROCKFIELD QUARRY

External Email: Use caution with links and attachments

Attached are the files for the CUP 3666 and CUP 3667 for the CEMEX project as requested. If you have any questions, please feel free to contact me.

David Randall | Senior Planner
Department of Public Works and Planning |
Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4497 Direct: (559) 600-4052
Your input matters! Customer Service Survey

From: Jennifer Laird
Sent: Friday, February 28, 2025 4:10 PM
To: 'drandall@fresnocountyca.gov' <drandall@fresnocountyca.gov>
Cc: 'BJimenez@fresnocountyca.gov' <BJimenez@fresnocountyca.gov>; Jennifer Clark <Jennifer.Clark@fresno.gov>
Subject: REISSUED NOTICE OF AVAILABILTY OF DRAFT EIR- CEMEX ROCKFIELD QUARRY

Importance: High

Good Afternoon:

The City of Fresno is preparing comments regarding the Draft EIR for the CEMEX Rockfield Quarry. At this time, we are requesting copies of the Unclassified Conditional Use Permit Application Nos. 3666 & 3667.

Comment 3-1

I am unable to locate them.

Thank you

Jennifer Laird | Executive Assistant to Director
Planning & Development Department
2600 Fresno Street | Fresno CA 93721
559.621.8036
Jennifer.Laird@Fresno.gov

Resources: **Planning & Development**

Docusign Envelope ID: 863DFDB3-7455-4603-B963-C2EA1A9C90E9

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY **GAVIN NEWSOM**, GOVERNOR

CENTRAL VALLEY FLOOD PROTECTION BOARD
3310 El Camino Ave., Ste. 170
SACRAMENTO, CA 95821
(916) 574-0609

February 28, 2025

David Randall
Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capitol Projects Division
2220 Tulare Street, 6th Floor
Fresno, CA 93721
DRandall@FresnoCountyCA.gov

Subject: Comments for the Draft Environmental Impact Report, Proposed Modification to the Existing CEMEX Rockfield Quarry (EIR No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667) Project, SCH# 2020060123, Fresno County

Comment 4-1

Dear David Randall,

The Central Valley Flood Protection Board (Board) appreciates the opportunity to comment on the Draft Environmental Impact Report (DEIR) for the Proposed Modification to the Existing CEMEX Rockfield Quarry (EIR No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667) Project (proposed project).

The proposed project involves the continuation and modification of its current aggregate (rock, sand, and gravel) mining and processing operation in two project stages that are estimated to span 100 years. The proposed project is located along the San Joaquin River, a regulated stream and designated floodway that is within the Board's permitting authority, therefore an encroachment permit may be required. Board permit information is available on the Permitting page at the Central Valley Flood Protection Board website.

Please include the Central Valley Flood Protection Board encroachment permit regulatory setting under heading 4.10.2.2 State.

California Code of Regulations, Title 23 provides standards that govern the design and construction of projects that affect the flood control works and floodways. Board staff recommends that you review Title 23 Standards, including Sections 112 (Streams Regulated and Nonpermissible Work Periods), 116 (Borrow and Excavation Activities – Land and Channel), and 130 (Patrol Roads and Access Ramps). Any deviation or variation from these standards will require approval from the Board.

Responsibility of the Central Valley Flood Protection Board

The Board is the State's regulatory agency responsible for enforcing appropriate standards for the construction, maintenance, and operation of the flood control system that protects life, property, and habitat in California's Central Valley. The Board operates under authorities as

Docusign Envelope ID: 863DFDB3-7455-4603-B963-C2EA1A9C90E9

described in California Water Code (Water Code), which requires the Board to oversee future modifications or additions to facilities of the State Plan of Flood Control (SPFC).

Encroachment Permit

Per California Code of Regulations, Title 23, Waters, Division 1 (Title 23), Section 6, approval by the Board is required for all proposed work or uses, including the alteration of levees within any area for which there is an Adopted Plan of Flood Control within the Board's jurisdiction. In addition, Board approval is required for all proposed encroachments within a floodway, on adjacent levees, and within any Regulated Stream identified in Title 23, Table 8.1. Specifically, Board jurisdiction includes the levee section, the waterward area between project levees, a minimum 10-foot-wide strip adjacent to the landward levee toe, the area within 30 feet from the top of bank(s) of Regulated Streams, and inside Board's Designated Floodways. Activities outside of these limits which could adversely affect Federal-State flood control facilities, as determined by Board staff, are also under the Board's jurisdiction. Permits may also be required for existing unpermitted encroachments or where it is necessary to establish the conditions normally imposed by permitting, including where responsibility for the encroachment has not been clearly established or ownership or uses have been changed.

Flood Impacts Analysis

Pursuant to Section 15 of Title 23, the Board may deny an encroachment permit if the proposed project could:

- Jeopardize directly or indirectly the physical integrity of levees or other works
- Obstruct, divert, redirect, or raise the surface level of design floods or flows, or the lesser flows for which protection is provided
- Cause significant adverse changes in water velocity or flow regimen
- Impair the inspection of floodways or project works
- Interfere with the maintenance of floodways or project works
- Interfere with the ability to engage in flood fighting, patrolling, or other flood emergency activities
- Increase the damaging effects of flood flows
- Be injurious to, or interfere with, the successful execution, functioning, or operation of any adopted plan of flood control
- Adversely affect the State Plan of Flood Control, as defined in the California Water Code

The Board, as a Responsible Agency under the California Environmental Quality Act (CEQA), will review and consider the environmental effects of the proposed project identified in the DEIR, and will reach its own conclusions on whether and how to approve the project involved (14 CCR 15096, subd. (a)). This includes direct impacts to facilities under construction, as well as indirect impacts from the proposed project to surrounding facilities. Accordingly, the comments herein are intended to assist in the development of a robust CEQA document capable of supporting the Board's permitting process.

Closing

The potential risks to public safety, including increased flood risks, need to be considered when developing proposed projects that seek to modify flood control works or the hydrology of the water ways. Board staff is available to discuss any questions you have regarding the above

Docusign Envelope ID: 863DFDB3-7455-4603-B963-C2EA1A9C90E9

comments. Please contact Jordan Robbins at (916) 524-3454, or via email at Jordan.Robbins@CVFlood.ca.gov if you have any questions.

Sincerely,

Jamie Silva

Jamie Silva
Environmental Program Manager

cc: Office of Land Use and Climate Innovation
State.Clearinghouse@opr.ca.gov

Central Valley Regional Water Quality Control Board

7 March 2025

David Randall, Senior Planner
Fresno Co. Dept. Public Works & Planning
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
(via email: DRandall@fresnocountyca.gov)

DRAFT ENVIRONMENTAL IMPACT REPORT NO. 7763; RMC PACIFIC MATERIALS, LLC; ROCKFIELD QUARRY MODIFICATION PROJECT, UNCLASSIFIED CONDITIONAL USE PERMITS 3666 AND 3667; FRESNO COUNTY

Comment 5-1

Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff has reviewed Draft Environmental Impact Report (DEIR) No. 7763 for the RMC Pacific Materials, LLC (CEMEX) Rockfield Quarry Modification Project. According to the DEIR's description, CEMEX plans to modify and expand its current aggregate mining and processing operations along the San Joaquin River near Friant in Fresno County (Project). The proposed Project will affect operations at two existing locations identified as the Quarry site and the Plant site.

The proposed Project will be implemented in two stages. During Stage One, CEMEX proposes to extend mining operations at the Quarry site to mine the hard rock deposit. The mining, which will include drilling and blasting, will extend to a final depth of approximately 600 feet. In addition, CEMEX will construct a new aggregate processing plant at the Quarry site to wash, screen, crush, and sort the mined hard rock. At the Plant site, mining operations will be extended to a final depth of approximately 85 feet before the area is reclaimed as open space and riparian habitat. Aggregate processing operations will continue at the Plant site during this period. In addition, CEMEX will replace the existing asphalt plant at the Plant site with a new hot-mix asphalt plant. Stage One is estimated to span 30 years and increase annual aggregate production from the current 1.4 million tons per year to eventually 3.0 million tons per year.

Stage Two is proposed to span an additional 70 years. During Stage Two, aggregate production will continue only at the Quarry site with a sustained volume of about 3.0 million tons per year. Also, during Stage Two, the ready-mix concrete plant and hot-mix asphalt plant will be relocated to the Quarry site, near the new aggregate processing plant, and all processing operations will take place at the Quarry site.

The Central Valley Water Board is responsible for protecting the quality of surface waters and ground waters of the State; therefore, our comments will address issues related to water quality matters only. The following sections discuss various programs and/or requirements applicable to the proposed Project. Comment 5-2

Waste Discharge Requirements (WDRs)

The Central Valley Water Board originally commented on the Notice of Preparation for the proposed Project in a letter dated 3 July 2020 (attached). In our letter we identified that the discharge of process wastewater from the existing aggregate processing plant at the Plant site is subject to regulation under individual waste discharge requirements (WDRs). WDRs Order 90-083 currently regulates the discharge of wastewater from the aggregate processing plant to onsite settling ponds at the Plant site. As discussed in our previous comment letter, WDRs Order 90-083 will need to be updated to reflect the changes outlined in the proposed Project.

In accordance with Water Code section 13260, CEMEX is required to submit a complete Report of Waste Discharge (RWD) to the Central Valley Water Board at least 140 days prior any material change or increase in the discharge as a result of the proposed Project. The RWD must characterize and evaluate all discharges of waste that may occur at the properties, including the discharge of aggregate wash water, ready-mix concrete wash water, and any wastewater generated at the hot-mix asphalt facility. The DEIR should clearly specify that that applicant will need to submit a RWD to the Central Valley Water Board to address changes in its operation before the proposed Project can proceed.

At a minimum the RWD should include:

1) A Form 200 signed and certified by a duly authorized person at CEMEX
2) A Technical Report that identifies all waste handling and storage areas for both solid and liquid wastes from all processing operations (i.e., aggregate processing plant, ready-mix concrete plant, and hot-mix asphalt plant) at both locations, and describes the treatment process and characterizes the discharge from the new aggregate processing plant at the Quarry site.
3) Discuss how the proposed Project's expanded operations will comply with the Salt and Nitrate Control Programs. Information on the Salt and Nitrate Control Programs can be found on the website at:

   https://waterboards.ca.gov/centralvalley/water_issues/salinity/

Note that the Nitrate Control Program is a prioritized program. The proposed Project is within Groundwater Basin 5-22.08 (San Joaquin Valley – Kings), and in a Priority 2 portion of the basin/sub-basin. Dischargers in Priority 2 basins were issued Notices to Comply in December 2023. Some sand and gravel facilities within the Central Valley have been determined to be exempt from the Nitrate Control Program because the typical washing process at aggregate processing plants does not appear to result in increased nitrogen concentrations in the discharge. However, the proposed Project will

include hard-rock blasting at the Quarry site, which may introduce materials such as ammonium nitrate fuel oil and other nitrogen containing compounds as blasting agents, which could potentially impact groundwater through the storage and handling of wastewater from aggregate processing operations. Therefore, the RWD should include a Nitrogen Source Evaluation to identify known or potential sources of nitrogen in the proposed discharge from the aggregate processing plants and dewatering water from the Quarry Site mine pits and evaluate the potential impact on underlying groundwater.

The Technical Report and Nitrogen Evaluation accompanying the RWD must be prepared and certified by a person registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1.

Construction and Industrial Storm Water General Permits

Comment 5-3

Dischargers whose project disturbs one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs more than one acre, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit Order No. 2022-0057-DWQ). Construction activity subject to this permit includes cleaning, grading, grubbing, and disturbances to ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line grade or capacity of the facility. The Construction General Permit requires development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

Storm water discharges associated with specific industrial activities, including some mining and mineral processing activities, must comply with the regulations contained in the Industrial Storm Water General Permit Order 2014-0057-DWQ.

Information on the Construction Storm Water General Permit and the Industrial Storm Water General Permit can be found on the State Water Resources Control Board website at:

https://waterboards.ca.gov/water_issues/programs/stormwater/construction.html

https://waterboards.ca.gov/water_issues/programs/stormwater/industrial.html

Dredge and Fill Permitting for Discharges to Waters of the United States and/or Waters of the State

Comment 5-4

If the Project includes the discharge of dredge and/or fill material to wetlands and/or to non-wetland waters (e.g., creek, river, pond, etc.), CEMEX must submit an application to the Central Valley Water Quality Board for such discharges. The State Water Resources Control Board and Central Valley Water Board (collectively, Water Boards) have the authority to regulate the discharge of dredged or fill material under section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Dischargers that obtain a federal permit or license that authorizes impacts to waters of the United States (i.e., waters that are within federal jurisdiction), such as section 404 of the Clean Water Act and section 10 of the Safe Rivers and Harbors Act, must obtain certification from the

Water Boards to ensure that the discharge does not violate state water quality standards or any other appropriate requirements of State law. When a discharge is proposed to waters outside of federal jurisdiction, the Water Boards regulate the discharge under Porter-Cologne Water Quality Control Act through the issuance of WDRs. Comment 5-4 Cont.

The State Water Resources Control Board adopted the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (Procedures), which became effective on 28 May 2020. Applications for dredge/fill activity and the processing of applications must comply with the Procedures. The Procedures require, among other things, a project applicant to conduct a delineation of waters, including wetlands, in an aquatic resource delineation report. The delineation must be performed as specified in the Procedures. The Procedures also require, in some instances, an alternatives analysis to identify the Least Environmentally Damaging Practicable Alternative. Even if a project is determined to be exempt from the Procedures' alternatives analysis requirement, the applicant must, at a minimum, demonstrate a sequence of actions has been taken to first avoid, then to minimize, and lastly compensate for adverse impacts that cannot be practicably avoided or minimized to waters of the state. Comment 5-5

Information supporting the Procedures including an implementation guidance document can be found here: https://www.waterboards.ca.gov/water_issues/programs/cwa401/wrapp.html.

Other resources for applicants, including the application form and fee information can be obtained here: https://www.waterboards.ca.gov/water_issues/programs/cwa401/

Thank you for the opportunity to comment on this Project. For questions related to waste discharge requirements and submittal of the RWD, please contact Katie Carpenter at (559) 445-5551 or by email at Katie.Carpenter@waterboards.ca.gov. For questions related to storm water permits or dredge/fill permitting please contact Matt Scroggins at (559) 445-6042 or by email at Matt.Scroggins@waterboards.ca.gov.

Bryan C. Rock
Senior Engineering Geologist

Enclosure: 3 July 2020 Central Valley Water Board Letter

cc's:

- Christopher Moskal, State Water Resources Control Board, OCC (via email)
- Alexander Mushegan, Central Valley Water Board, Fresno, (via email)
- Omar Mostafa, Central Valley Water Board Fresno (via email)
- Matt Scroggins, Central Valley Water Board Fresno (via email)
- David Randall, Fresno County Department of Public Works & Planning (via email)

Central Valley Regional Water Quality Control Board

3 July 2020

Christina Monfette
County of Fresno, Department of Public Works and Planning
2220 Tulare Street, Sixth Floor
Fresno, California 93271

CEMEX CONSTRUCTION MATERIALS PACIFIC, LLC; ROCKFIELD QUARRY MODIFICATION PROJECT ENVIRONMENTAL IMPACT REPORT NO. 7763 AND UNCLASSIFIED CONDITIONAL USE PERMIT APPLICATION NOS. 3666 AND 3667; FRESNO COUNTY

Central Valley Water Board staff has reviewed the Notice of Preparation (NOP) for the proposed Rockfield Quarry Modification Project (Project) (SCH # 2020060123). CEMEX Construction Materials Pacific, LLC (CEMEX) is proposing to expand its current aggregate (rock, sand, and gravel) mining and processing operations at the CEMEX Friant Plant (Plant). According to the NOP, the County of Fresno (County) will be the lead agency and will prepare an Environmental Impact Report (EIR) for the proposed project. A summary of our comments is provided below. The Central Valley Water Board is responsible for protecting water quality; therefore, our comments specially address water quality matters.

The NOP proposes changes to the Plant (CUP 3666) and the Quarry (CUP 3667) in two stages. During Stage One, CEMEX proposes to mine a hard rock deposit at the Quarry. The mining (via drilling and blasting) will occur at a depth of approximately 600 feet. An aggregate processing plant will also be added to the Quarry to wash, screen, crush, and sort the mined hard rock. At the Plant, the existing asphalt plant will be replaced with a hot-mix asphalt plant. Stage One is estimated to span 30 years and increase annual aggregate production from the current 1.4 million tons per year to eventually 3.0 million tons per year. Stage Two is proposed to span 70 years. During stage 2 aggregate production will continue to be 3.0 million tons per year. Also, during Stage Two, processing operations will only continue at the Quarry Site and the ready-mix concrete plant and hot-mix asphalt plant will be relocated to the Quarry Site.

The EIR for the Project should include a description of all solid and/or liquid waste that might be generated by the proposed project and how it will be handle, treated, and dispose of. Furthermore, the final EIR also needs to evaluate potential impacts to groundwater water and surface water associated with the Project. The following sections discuss various programs/requirements that may be applicable to the Project.

Waste Discharge Requirements (WDRs)

The discharge of process/wash water to land is subject to regulation under individual WDRs. WDRs Order 90-083 currently regulates the discharge of 1.5 million gallons per day of wash water generated by the washing/processing of sand and gravel at the Plant. Due to the proposed changes to the Plant and Quarry discussed in the NOP, WDRs Order 90-083 needs to be updated to reflect the proposed changes at the Plant and Quarry and ensure the discharge is consistent with Central Valley Water Board plans and policies.

In accordance with California Water Code section 13260, CEMEX is required to submit a Report of Waste Discharge (RWD) to apply for updated WDRs. The RWD must be submitted to the Central Valley Water Board at least 140 days prior to any discharge of wastewater from the project pursuant to California Water Code section 13264. The RWD needs to, at a minimum, include the following:

1) A Form 200 signed and certified by a duly authorized person at CEMEX;
2) A technical report that describes the treatment process and characterizes the wastewater discharge.

A technical report accompanying the RWD must be prepared and certified by a person registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. A guidance document for applying for individual waste discharge requirements is attached to this letter.

Construction Storm Water General Permit

Dischargers whose project disturbs one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website (https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html).

Industrial Storm Water General Permit

Certain industries that discharge storm water to waters of the United States require coverage under a federally mandated permit. In California, the applicable permit is the Industrial Storm Water General Permit Order 2014-0057-DWQ. For more information on the Industrial Storm Water General Permit, visit the State Water Resources Control Board website (https://www.waterboards.ca.gov/water_issues/programs/stormwater/industrial.html).

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material to waters of the United States, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water alterations, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit, or any other federal permit, is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. Water Quality Certification must be obtained prior to initiation of project activities. Water Quality Certification information can be obtained by going to the State Water Resource Control Board Water Quality Certification and Wetlands Program website.

Salt and Nitrate Control Programs

As part of the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative, the Central Valley Water Board adopted Basin Plan amendments (Resolution R5-2018-0034) incorporating new programs for addressing ongoing salt and nitrate accumulation in the Central Valley at its 31 May 2018 Board Meeting. On 16 October 2019, the State Water Resources Control Board adopted Resolution 2019-0057 approving the Central Valley Water Board Basin Plan amendments and also directed the Central Valley Water Board to make targeted revisions to the Basin Plan amendments within one year from the approval of the Basin Plan amendments by the Office of Administrative Law. The Office of Administrative Law approved the Basin Plan amendments on 15 January 2020 (OAL Matter No. 2019-1203-03).

Pursuant to the Basin Plan amendments, discharges will receive a Notice to Comply with instructions and obligations for the Salt Control Program within one year of the effective date of the amendments. Upon receipt of the Notice to Comply, the Discharger will have no more than six months to submit their Notice of Intent informing the Central Valley Water Board of their choice between Option 1 (Conservative Salinity Permitting Approach) or Option 2 (Alternative Salinity Permitting Approach). For the Nitrate Control Program, the Project is within Groundwater Basin 5-22.06 (San Joaquin Valley – Madera), a Priority 2 basin/sub-basin.

More information on the Salt and Nitrate Control Program may be found on the internet (https://www.cvsalinity.org/public-info).

If you have any questions regarding this matter, please contact Denise Soria by phone at (559) 444-2488, by email at dsoria@waterboards.ca.gov.

ALEXANDER S. MUSHEGAN
Senior Engineer

Enclosure:
- Technical Information for a Report of Waste Discharge for Discharges to Land in the WDRs (Non 15) Program

TECHNICAL INFORMATION
FOR A REPORT OF WASTE DISCHARGE
For
Discharges to Land in the WDR (Non 15[1]) Program (Individual WDRs Only)

This document provides guidance for applying for individual waste discharge requirements only. If you believe that your discharge would be appropriately regulated under general waste discharge requirements or general waiver, please see the links below and contact Central Valley Water Board staff for guidance.

General WDRs: http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/#General
Waivers: http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/#Waivers

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[1] The Non 15 Program regulates discharges to land that are exempt from Title 27 of the California Code of Regulations. See the following link for a brief explanation of Title 27 and exemptions that may be used: http://www.waterboards.ca.gov/water_issues/programs/land_disposal/waste_discharge_requirements.shtml

I. What is a Report of Waste Discharge?

A Report of Waste Discharge (ROWD) is an application for waste discharge requirements. A ROWD consists of the following:

A completed and signed Form 200, which can be downloaded from the internet at http://www.waterboards.ca.gov/publications_forms/forms/docs/form200.pdf.

1. A technical report prepared by a California registered Civil Engineer that presents the Information listed in the table below.
2. For a new or previously unpermitted discharges, a check for the first annual fee made payableto the *State Water Resources Control Board*. Consult with staff to determine the required fee.There is no fee if you are applying for revised or updated WDRs because you are already subject to an annual permit fee. The current fee schedule can be viewed at the following link: http://www.waterboards.ca.gov/resources/fees/index.shtml#wdr

II. Compliance with the California Environmental Quality Act (CEQA)

Although not required as part of the ROWD, for new, previously unpermitted, or expanding/changing discharges, you must also submit a copy of any draft and final environmental review documents prepared to comply with the California Environmental Quality Act (CEQA).

If the local planning agency (city or county, as applicable) or another public agency has determined thatthe project (or expansion, changes, etc.) does not require any discretionary action by that agency, the Central Valley Water Board may be the lead agency for the purposes of CEQA, and you will be required to submit an Initial Study and pay all fees and other costs associated with the CEQA process unless the Board determines that the action falls within the scope of a categorical or statutory exemption. Fees associated with the filing of an Initial Study may include a California Department of Fish and Wildlife fee, County Clerk recording fees, and costs for publishing the CEQA Notice of Intent in a local newspaper. Consult with your local planning agency and Central Valley Water Board staff if you have any questions about CEQA. Additional information about CEQA is also available at the following link: https://opr.ca.gov/ceqa/.

III. What is Required for the ROWD Technical Report?

Please note the following tips to expedite the ROWD review and waste discharge requirements development:

- Providing the information in the same order as the list below will help to expedite the ROWD review. Staff will use this as a checklist.
- If any of the information is missing or incomplete, the ROWD will be deemed incomplete and the process (and your project) will be delayed until all of the required information is submitted. You will be notified in writing of the ROWD status after it has been reviewed. If the ROWD is incomplete, we will specify the additional information that is required to complete the ROWD.
- All numerical data presented in tables and calculations performed using spreadsheets should be provided in digital form (MS Excel compatible spreadsheet).
- If some of the information listed below can be found in a previous technical report prepared by a registered professional, the ROWD can incorporate the report as an appendix, but the ROWD text must specify where in the report the required information can be found. However, if appended reports contain information that conflicts with the body of the ROWD, it may cause further delays.

A. General Information
1. Is this a new/proposed or existing facility?
2. If this is an existing facility, is the discharge currently regulated under Waste Discharge Requirements (WDRs) issued by the Central Valley Water Board?
a. If so, provide the WDRs order number.
b. If not, provide the name of the local agency that issued the current permit.
3. Provide a copy of any other permits that reference or relate to the wastewater disposal system. This includes Use Permits and Surface Mining and Reclamation Act (SMARA) reclamation plans, etc.
4. Provide the following for the facility that generates the waste and the site where the waste is discharged:
a. Street address (provide street name and distance from nearest cross street if there is no street number).
b. The approximate latitude and longitude of the facility that generates the wastewater, wastewater treatment facilities, and wastewater land disposal areas.
c. Township, Range, and Section.
d. Assessor's parcel numbers.

B. Wastewater Facility and Discharge *Complete this section for both new/proposed facilities and existing facilities*.
1. A description of the sources and types of wastewater flowing into the system from:
a. Residential (population served and number of connections or equivalent dwelling units).
b. Commercial (number of connections by type).
c. Industrial (number of connections by type).
2. Design influent flow rates (average daily, dry weather daily, peak hour, peak day, and peak month), and the design treatment capacity of the system with respect to each of these. For new/proposed facilities, provide the methods used to estimate these design parameters and copies of all calculations.
3. For existing facilities, a summary table of monthly influent flow totals and monthly precipitation totals for the last five years. Explain any data gaps, outliers, and/or unusual circumstances that might affect measured flow rates. If sewer inflow and infiltration (I/I) contributes significantly to influent flow, provide an I/I analysis to project I/I as a function of total annual precipitation and/or groundwater level as appropriate.
4. A detailed description of the facilities that generate wastewater, and all wastewater conveyance, treatment, and disposal systems. Use site plans and conceptual drawings as appropriate to illustrate locations and typical construction. Include all treatment processes. The following maps, plans, and illustrations are needed:
a. A facility location map showing local topography, the facility location and/or boundaries, streets, and surface waters (including storm water drainage ditches, irrigation canals, and irrigation/tailwater ditches).
b. A process flow schematic for the entire treatment and disposal system. Include existing and proposed flow monitoring devices and sampling locations proposed to determine compliance with the WDRs.

c. A scaled treatment plant site plan.
d. A scaled map showing the limits of all proposed wastewater treatment, storage and disposal areas.
5. Characterization of the source water (the community or process water supply), influent wastewater quality (prior to treatment or discharge), and treated effluent quality. See Table 1 for a minimum list of constituents to be analyzed.
6. For POTWs and domestic wastewater facilities, a description of the sewer system, sewer materials and age, and lift station details (type, location, capacity, backup systems, and alarms features). Discuss potential inflow and infiltration (I/I) rates in light of local groundwater conditions and sewer system materials/design. For industrial facilities, a description of the industrial wastewater collection and conveyance system.
7. A description of proposed alarm systems, emergency wastewater storage facilities, and other means of preventing treatment system bypass or failure during reasonably foreseeable overload conditions (e.g., peak flows, power failure, sewer blockage). Consider both potential problems at the treatment system and within the conveyance system.
8. Preventive and contingency measures for controlling spills and accidental discharges.
9. Flood and frost protection measures (structural and operational) employed at the facility.
10. For debris, grit and screenings, sludge, and biosolids the following:
a. A description of solids generation rates, on-site treatment and handling systems, and short-term storage procedures.
b. A description of solids disposal practices.
c. For facilities that do not have continuous sludge wasting systems (i.e., where sludge accumulates in treatment and/or storage ponds), the frequency of assessing accumulated sludge volume, the date of the last sludge volume assessment, the date of the last sludge cleanout, and expected frequency of future sludge cleanout activities
11. For each wastewater treatment, storage, or disposal pond and containment structure, provide the following information:
a. Identification (name) and function of the pond.
b. Surface area, depth, and volumetric capacity at two feet of freeboard.
c. Height (relative to surrounding grade), crest width, interior slope, and exterior slope of each berm or levee.
d. Materials used to construct each berm or levee.
e. Description of engineered liner, if any. Include a copy of the Construction Quality Assurance (CQA) Report if one was prepared.
f. Estimated steady state percolation rate for each unlined pond.
g. Depth to shallow groundwater below the base and pond inverts.
h. Overfilling/overflow prevention features.
i. Operation and maintenance procedures.
12. For subsurface disposal systems, provide the design basis and documentation demonstrating that the system has been designed in accordance with applicable regulations, codes, ordinances, and guidelines. If the design deviates from these requirements, provide justification in terms of system longevity, maintainability, and groundwater protection.

13. If treated domestic effluent will be recycled for beneficial reuse or if wastewater will reused or land-applied[2], provide a complete description of the following:
a. Ownership and contact information for each landowner[3].
b. Effluent disinfection system.
c. Effluent conveyance systems.
d. Water recycling/Land application areas (LAA) areas.
e. Cropping plans.
f. Planned operations (planting and harvest, irrigation method, irrigation frequency, irrigation amounts).
g. Expected nutrient loadings (pounds per acre per year total nitrogen).
h. Expected salt loadings (pounds per acre per year total dissolved solids).
i. Tailwater management methods.
j. Storm water runoff management methods.
k. Setback distances from the edge of each recycling/land application area from the property boundary, public streets, occupied structures owned by others, and surface waters/surface water conveyances.
l. Plans that illustrate items c, d, i, j, and k above
14. If wastewater effluent will be recycled pursuant to Title 22 of the California Code of Regulations (e.g., if domestic wastewater is recycled to grow crops, irrigate landscaping, provide pasture for livestock, or for landscape or recreational impoundments, including reclamation sites owned by a POTWs, unless water is recycled solely for irrigation of landscaping at the POTW site) a Title 22 Engineering Report must be submitted to both the Central Valley Water board and the Division of Drinking Water[4].
15. Projected monthly water balances demonstrating adequate containment capacity for both the average rainfall year and the 100-year return period total annual precipitation, including consideration of at least the following:
a. For POTWs and private domestic wastewater facilities, initial baseline influent and I/I flows as well as baseline influent and I/I flows at full build out with an aging sewer system.
b. A minimum of two feet of freeboard in each pond at all times (unless a registered civil engineer determines that a lower freeboard level will not cause overtopping or berm failure).
c. Historical local evapotranspiration, pan evaporation, and lake evaporation data (monthly average values).
d. Local precipitation data with the 100-year return period annual total distributed monthly in accordance with mean monthly precipitation patterns.
e. Proposed recycling area/land application area/disposal system hydraulic loading rates distributed monthly in accordance with expected seasonal variations based on crop evapotranspiration rates.
f. Projected long-term percolation rates (including consideration of percolation from unlined ponds and the effects of solids plugging on all ponds).

[2] Uses of recycled water that are limited to landscape irrigation (including golf courses) can be regulated under General WDRs issued by the State Water Board. See this webpage for more information: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/requirements.html

[3] Landowners are typically named in WDRs as co-dischargers, and the WDRs may include separate requirements with which co-dischargers must comply.

[4] To the extent this information is already presented in the Title 22 Engineering Report, the ROWD may incorporate that report by reference. The Title 22 Engineering Report must also be submitted to the Division of Drinking Water for review and approval.

16. Proposed flow limits and basis for the limits. Consider dry weather flows vs. peak flows and seasonal variations. Include the technical basis for the proposed flow limit (e.g., design treatment capacity; hydraulic capacity of a main lift station, headworks, or other system element; and demonstrated effluent storage/disposal capacity).
17. A narrative description of treatment system operation and maintenance procedures to be employed, including those associated with effluent storage and disposal.
18. For POTWs, the level of operator certification and staffing; the names and grade levels of all certified operators, and the hours that the facility is manned.
19. For privately owned domestic wastewater treatment facilities, the names and grade levels of all certified operators, and the hours that the facility is manned. If the facility does not have a certified operator, provide justification for not retaining one.
C. Planned Changes in the Facility and Discharge (for existing facilities only)
1. Describe in detail any and all planned changes in the facility or discharge, addressing each of items listed in Section B above.
D. Local and Site-Specific Conditions (Illustrate with maps as appropriate)
1. Neighboring land uses.
2. Typical crops grown (if agricultural area).
3. Irrigation water source(s) and volume and quality data (if agricultural area).
4. Terrain and site drainage features.
5. Nearest surface water drainage course.
6. FEMA floodplain designation(s).
7. Average Annual precipitation (inches)
8. 100-year 365-day precipitation (inches)
9. Reference evapotranspiration (monthly and annual total)
10. Pan evaporation (monthly and annual total)
11. A description of the types and depths of soil underlying ponds and/or effluent disposal areas (include a copy of the geotechnical report and/or NRCS soil report). Include at least the following:
a. Depth of unsaturated soil when groundwater is closest to the surface.
b. Soil types based on site-specific information, sampling locations (accurately measured and recorded), description and results of percolation tests or other tests used to estimate soil long-term infiltration rates. Include depth, thickness, and soil horizons. Soils must be described at a minimum of five feet below the bottom of any disposal unit.
c. Bedrock type and condition encountered in disposal area, if any.
d. A scaled map depicting soil/rock types and test locations.
12. Provide the following information about hydrogeology and groundwater:
a. Stratigraphy, groundwater elevation and gradient, transmissivity, and influence of all recharge and pumping sources (site conceptual model).
b. Elevation and gradient of first groundwater at the facility
c. Depth to highest anticipated groundwater based upon onsite measurements taken during wet season.

d. Shallow groundwater quality for typical waste constituents, up/down gradient. (See Table 1)
e. Information on monitoring well locations, construction details, and locations of any geological features (e.g. aquitards, subterranean channels, faults) and aquifer characteristics.
f. Summary of historical groundwater monitoring results (last 5 years for existing facilities, 2 years for new/planned facilities).
E. Antidegradation Analysis
The State Water Resources Control Board Resolution No. 68-16 (the Antidegradation Policy) requires that the Central Valley Water Board maintain the high quality of waters of the state until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the state, will not unreasonably affect beneficial uses, and will not result in exceedances of one or more water quality objectives. If a discharge will degrade groundwater quality but will not cause an exceedance of one or more water quality objectives, the discharger must demonstrate that all practicable treatment or control measures have been implemented or will be implemented such that the Board can consider these measures to represent the "best practicable treatment or control" (BPTC) of the constituents of concern. Demonstrating that BPTC has been, or will be, implemented at the site can provide justification for the Board to allow the current level of degradation to continue or increase (as applicable), or for the Board to allow any degradation in the case of a new discharge. The Antidegradation Policy is incorporated into our Basin Plans, which also include implementation plans that we follow. See the following link for the Basin Plans and other important policy documents: http://www.waterboards.ca.gov/centralvalley/plans_policies/
The Antidegradation Analysis must include the following:
1. For existing facilities, whether the discharge has caused degradation. If so, for which constituents, to what degree, and whether the discharge has caused exceedance of a water quality objective.
2. The potential for the discharge to degrade groundwater quality (for new discharges) or further degrade groundwater quality (for existing discharges, whether or not the discharge is expanding).
The assessment must be made based on site-specific data and shall include the following items for each constituent listed in the effluent category on Table 1:
a. Characterization of all waste constituents to be discharged that have the potential to degrade groundwater quality;
b. Characterization of shallow groundwater quality (i.e., the uppermost layer of the uppermost aquifer) for typical waste constituents[5] upgradient and downgradient of the site and comparison to established water quality objectives [6] (include tabulated historical groundwater monitoring data and groundwater elevation contour maps for the last eight monitoring events);
c. A description of the geology and hydrogeologic conditions of the site including groundwater elevation and gradient, transmissivity, influence of all known recharge and pumping sources, and subsurface conditions at the facility, including any proposed new disposal site or storage ponds;

[5] Include analyses for the following: total coliform organisms, total dissolved solids, fixed dissolved solids,electrical conductivity, nitrate nitrogen, total nitrogen, and major anions and cations

[6] Compare to Basin Plan water quality objectives, including drinking water standards, agricultural water quality goals, etc.

d. Groundwater degradation , if any, that has resulted from existing operations, other nearby discharges, or natural occurrences;
e. The areal extent that the discharge has impacted or will impact the quality of the shallow groundwater, if any;
f. The concentration found and/or expected increase in concentration in shallow groundwater foreach constituent.
g. If degradation has occurred or is expected to occur describe the following:
i. Any facility design features and operational practices that reduce the potential for groundwater degradation (treatment or control). Such features might include salinity source control, other pollutant source control, advanced treatment, disinfection, concrete treatment structures, and pond lining systems, etc.
ii. Additional treatment or control measures that could be implemented and a preliminary capital and annual operations and maintenance cost estimate for each.
iii. How current treatment and control measures are justified as BPTC (i.e., what justifies not implementing additional measures);
iv. How no water quality objectives will be exceeded; and
v. Why allowing existing and/or anticipated degradation is in the best interest of the people of the state.
F. Industrial Storm Water Permit
The State Water Resources Control Board adopted Order 2014-0057-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. Many industrial facilities and some domestic wastewater treatment facilities are required to obtain coverage under this permit. Provide evidence that the facility is exempt or hasapplied for coverage under the Industrial Storm Water Permit. See the following link for more information: http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/
G. General WDRs for Sanitary Sewer Systems.
The State Water Resources Control Board adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (Order 2006-0003-DWQ). The permit requires all public agencies that own or operate sanitary sewer systems greater than one mile in length to obtain coverage. Provide evidence that the facility is exempt or has applied for coverage under the General WDRs for Sanitary Sewer Systems. See the following link for more information: http://www.waterboards.ca.gov/water_issues/programs/sso/index.shtml

H. Department of Water Resources Well Standards

The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the State or county pursuant to Water Code section 13801, apply to all monitoring wells. Discuss whether existing monitoring wells at the facility were constructed in accordance with the Department of Water Resources Well Standards.

See the following link for more information: https://water.ca.gov/well-standards

I. Salt and Nitrate Control Programs

The Central Valley Regional Water Board adopted Basin Plan amendments incorporating new programs for addressing ongoing salt and nitrate accumulation on 31 May 2018 (Resolution No. R5-2018-0034). The resolution resulted from a Central Valley Regional Water Board initiated collaborative stakeholder initiative known as the Central Valley Salinity Alternatives for Long-term Sustainability (CV-SALTS).

Nitrate Control Program
After the effective date of the Nitrate Control Program, new dischargers located in groundwater basin/sub-basin (regardless of priority) or those with a material change to their operation that increases the level of nitrate discharged to groundwater must comply with the Nitrate Control Program and provide data and information as applicable. This provision does not apply to dischargers located in areas that are not part of a designated basin/sub-basin unless the Executive Officer of the Central Valley Water Board determines, based on the specific facts of the discharge, that it should be subject to the Nitrate Control Program and the Board's Executive Officer notifies the discharger accordingly.

This Nitrate Control Program NTC requires that discharges choose between two compliance pathways:

- **Pathway A:** New individual permitting options. The Board will set more stringent nitrate requirements in your permit to ensure that nitrate impacts will not cause a problem for drinking water users.
- **Pathway B:** Form or Join a Local Management Zone with other Permittees. A Management Zone is an association of permittees that work together to reduce nitrate loading and to provide replacement water

Salt Control Program
A new permittee, or existing permittee seeking a permit modification due to a substantial and/or material change which increases salt concentration or load from a facility, shall indicate how the permittee intends to comply with the Salt Control Program at the time of application and provide the required information to support the decision.

- *Conservative Salinity Permitting Approach* – A permittee that selects this approach must submit an assessment of how the discharge will comply with the conservative permitting requirements set forth in the Conservative Salinity Permitting Approach. The permittee shall submit this assessment to the Central Valley Water Board with the notification to the Board of its permit compliance pathway decision. If the Board does not concur with the findings of the assessment, the Board may request additional technical and/or monitoring information with a deadline for submittal. When conducting the assessment, the permittee may use historical water quality information if the information adequately represents the character of the current discharger and/or receiving water and is approved by the Board's Executive Officer.
- *Alternative Salinity Permitting Approach* – A permittee that selects this approach shall participate in the Phase I P&O Study by providing at least the minimum required level of

financial support throughout Phase I as determined by the lead entity overseeing the P&O Study. The permittee shall provide documentation of its compliance with the required level of support with the notification to the Central Valley Water Board of its permitting decision. If the permittee has an approved salinity-related Time Schedule Order, Compliance Schedule or variance that expires prior to the completion of the Phase I P&O Study, the Board, at its discretion, may extend the Time Schedule Order or Compliance Schedule or renew or grant a variance, as appropriate and allowed by other applicable policies.

See the following links for more information about the Salt and Nitrate Control Programs:
https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/
https://www.cvsalinity.org/public-info

Table 1 – ROWD Constituent Characterization List

The Report of Waste Discharge must characterize the groundwater (G), source water (S), treatment system influent (I), and effluent discharge (E) for, at minimum, the constituents indicated in the list below. The characterization must be based on a statistically significant number of representative samples as determined by an appropriately registered and/or licensed professional. All media must also be characterized for all additional waste constituents that may be in the discharge based on the facility processes employed but not listed below.

Constituent [1]	Units	Minimum Recommended Characterization Data			
		POTW/ Domestic	Food Processor	Sand and Gravel	Other Industry
Biochemical Oxygen Demand	mg/L	I, E	I, E		E
Chemical Oxygen Demand	mg/L	G, E	I, E		E
Settleable Matter	ml/L	E	E		E
Total Suspended Solids	mg/L	I, E	I, E		E
Total Dissolved Solids	mg/L	G, S, I, E	G, S, E	G	G, S, E
Fixed Dissolved Solids	mg/L		E		G, S, E
Electrical Conductivity	µmhos/cm	G, S, I, E	G, S, I, E	G, S, I, E	G, S, I, E
Total Kjeldahl Nitrogen as N	mg/L	G, S, E	G, S, E		G, S, E
Ammonia Nitrogen as N	mg/L	G, S, E	G, S, E		G, S, E
Nitrate Nitrogen as N	mg/L	G, S, E	G, S, E		G, S, E
pH	pH Units	G, S, I, E	G, S, E	G, S, I, E	G, S, I, E
General Minerals[2]					
Alkalinity	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Hardness	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Bicarbonate	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Carbonate	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Calcium	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Magnesium	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Chloride	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Potassium	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Sodium	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Sulfate	mg/L	G, S, E	G, S, E	G, S, E	G, S, E
Metals[3]					
Aluminum	ug/L	E			E
Antimony	ug/L			S, E	
Arsenic	ug/L	G, S, E	G, S, E	G, S, E	G, S, E
Barium	ug/L			S, E	
Beryllium	ug/L			S, E	
Boron	ug/L	G	G	G, S, E	G

Constituent [1]	Units	Minimum Recommended Characterization Data			
		POTW/ Domestic	Food Processor	Sand and Gravel	Other Industry
Cadmium	ug/L			S, E	
Chromium (IV)	ug/L			S, E	
Chromium (III)	ug/L			S, E	
Total Chromium	ug/L	G	G	G, S, E	G
Cobalt	ug/L			S, E	
Copper	ug/L	E	E	S, E	E
Fluoride	ug/L			S, E	
Iron	ug/L	G, S, E	G, S, E	G, S, E	G, S, E
Lead	ug/L	E		S, E	E
Mercury	ug/L	E		S, E	E
Manganese	ug/L	G, S, E	G, S, E	G, S, E	G, S, E
Molybdenum	ug/L			S, E	
Nickel	ug/L			S, E	
Selenium	ug/L			S, E	
Silver	ug/L			S, E	
Thallium	ug/L			S, E	
Vanadium	ug/L			S, E	
Zinc	ug/L	E		S, E	E
Disinfection By-Products[4]	ug/L	G, E	E		E
Formaldehyde[5]	ug/L	G, E	E		E
Phenols[5]	ug/L	G, E			E
Priority Pollutants[6]	Various	G, E			E

1 With the exception of wastewater samples, for constituents with Secondary MCLs listed in Title, 22 Table 64449-A (e.g., aluminum, copper, iron, manganese, silver, zinc, color and turbidity), samples shall be filtered with a 1.5-micron filter prior to preservation, digestion, and analysis. For all other constituents, samples shall be filtered with a 0.45-micron filter prior to preservation, digestion, and analysis. If filtering in the field is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain of custody form) to immediately filterthen preserve the sample.

2 General minerals analyses shall be accompanied by a cation/anion balance demonstrating complete analysis.

3 Where constituents are analyzed as part of other suites of constituents, the results may be substituted to avoid redundant analyses (i.e., arsenic results collected to fulfill the metals suite requirements may also beused to fill the Priority Pollutant suite requirements provided appropriate detection limits are used.).

4 If wastewater is disinfected using chlorination or chlorination is used in internal disinfection processes.

5 If the facility accepts holding tank waste from RVs, boats, or portable toilets.

6 The Discharger must determine which priority pollutants, if any, are likely to be present in the discharge at concentrations that might degrade groundwater quality, and must provide characterization data for those constituents.

From:	Armstrong, Karlyn A
To:	Randall , David A.
Cc:	Stock, Karl J; White, Kristin N; Emerson, Rain L; Portz, Donald E; Victorine, Rebecca A; Jason R. Phillips; hcandee@altshulerberzon.com; jennifer.quan@noaa.gov; thomas.gibson@water.ca.gov; Souza, Paul; chuck.bonham@wildlife.ca.gov
Subject:	Re: CEMEX Rockfield Quarry Modification Project EIR
Date:	Friday, March 7, 2025 4:44:18 PM
Attachments:	DEIR for the proposed modification to the existing CEMEX Rockfield Quarry.pdf 20250307_CEMEX DEIR Technical Comments.pdf

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

We apologize, we sent you the wrong version in error. Please use the attached final version.

Sincerely,

Karlyn

Get Outlook for iOS

From: Armstrong, Karlyn A <karmstrong@usbr.gov>
Sent: Friday, March 7, 2025 1:59 PM
To: DRandall@FresnoCountyCA.gov <DRandall@FresnoCountyCA.gov>
Cc: Stock, Karl J <KStock@usbr.gov>; White, Kristin N <knwhite@usbr.gov>; Emerson, Rain L <remerson@usbr.gov>; Portz, Donald E <DPortz@usbr.gov>; Victorine, Rebecca A <RVictorine@usbr.gov>; Jason R. Phillips <jphillips@friantwater.org>; hcandee@altshulerberzon.com <hcandee@altshulerberzon.com>; jennifer.quan@noaa.gov <jennifer.quan@noaa.gov>; thomas.gibson@water.ca.gov <thomas.gibson@water.ca.gov>; Souza, Paul <paul_souza@fws.gov>; chuck.bonham@wildlife.ca.gov <chuck.bonham@wildlife.ca.gov>
Subject: CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

Please accept this email as the transmittal of the U.S. Bureau of Reclamation's comments on the Draft Environmental Impact Report for the proposed modification to the existing CEMEX Rockfield Quarry (EIR No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667), which are attached. Please contact Ms. Becky Victorine at rvictorine@usbr.gov with any questions or if there is a need for discussion of these comments in more detail.

Sincerely,

Karlyn Armstrong

Karlyn Armstrong
Interdisciplinary Project Manager
San Joaquin River Restoration Program
Bureau of Reclamation
Interior Region 10 · California-Great Basin
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United States Department of the Interior
BUREAU OF RECLAMATION
2800 Cottage Way
Sacramento, CA 95825-1898

IN REPLY REFER TO:

CGB-100
2.1.4.17

VIA ELECTRONIC MAIL ONLY

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
DRandall@FresnoCountyCA.gov

Subject: RE: Draft Environmental Impact Report for the proposed modification to the existing CEMEX Rockfield Quarry (EIR No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667)

Dear Mr. Randall,

The U.S. Bureau of Reclamation (Reclamation) is submitting this comment letter regarding the County of Fresno's Draft Environmental Impact Report (DEIR) 7763 for the CEMEX Rockfield Quarry: Rockfield Modification Project (proposed project). Comment 6-1

The mission of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public. Reclamation has extensive infrastructure that is operated in the San Joaquin Basin in support of this mission, including the Friant Division of the Central Valley Project (CVP), which could be impacted by this proposed project. In addition, Reclamation is implementing the San Joaquin River Restoration Program (SJRRP) in accordance with the San Joaquin River Restoration Settlement and the San Joaquin River Restoration Settlement Act (Act), included in Public Law 111-11. The proposed project is located within the SJRRP Restoration Area and has the potential to impact Reclamation's successful implementation of the SJRRP.

With these responsibilities and interests in mind, Reclamation appreciates the County of Fresno's (County's) efforts on the proposed project and consideration of the agency's comments. General comments are provided herein, and specific comments are provided in the attached technical comment spreadsheet.

Existing Conditions

Comment 6-2

Reclamation is concerned that the environmental setting does not adequately describe the physical environmental conditions in the vicinity of the proposed project, as required by Section 15125(a) of the California Environmental Quality Act (CEQA), and requests a complete description of the following resources be included in the description of the environmental setting:

a. Terrestrial and aquatic wildlife, including species listed in accordance with the Endangered Species Act, that may be present in the vicinity of the proposed project
b. The existing impacted hydrology of the San Joaquin River (SJR) Comment 6-3
c. Actions being taken to implement the SJRRP, including: Comment 6-4

(1) Reintroduction of Central Valley (CV) spring-run Chinook salmon (*Oncorhynchus tshawytscha*)
(2) SJRRP flows that offset existing impacts to the river and CV spring-run Chinook salmon

Comment 6-4 cont.

d. The Plant Site river water delivery ditch (delivery ditch) and its connection to Little Dry Creek

Comment 6-5

Reclamation also requests that a projected future conditions baseline be included in addition to existing conditions for hydrologic impact analyses, as provided for in CEQA Section15125(a)(1). The DEIR groundwater section and adaptive management plan assume future groundwater conditions will be similar to existing conditions. However, the ongoing implementation of the SJRRP involves increased flows down the SJR, which will elevate the river stage, increase the river's connectivity with adjacent groundwater, and increase groundwater levels in some locations. Because current conditions are the only baseline used in the analysis of impacts and as a measure of future impact in the adaptive management program, the hydrologic impacts of the proposed project are likely underestimated and would be involuntarily subsidized by SJRRP flows, negatively impacting the implementation of the SJRRP and Reclamation's water rights. The analysis should include impacts based on future SJRRP flows and the adaptive management program should be designed in a way that future SJRRP flows are not impacted by operation of the proposed project.

Comment 6-6

Holding Contracts and Water Rights

Comment 6-7

Reclamation is concerned with the applicant's described use of the Holding Contract for this project. Reclamation provides the following comments solely to inform the applicant's environmental review. Reclamation reserves all rights, claims and defenses available to the U.S. under the Holding Contracts.

a. The DEIR improperly points to Holding Contract #15 as a water right; a Holding Contract does not purport to be a water right nor is it a water supply contract for CVP water. Reclamation could not locate any water right associated with any CEMEX parcel and no water use reports could be located in the State electronic Water Rights Information Management System database. The State of California has required all water right claimants to have claims on file and submittals of annual use since 2006. The applicant should provide evidence that it may lawfully divert water as described in the DEIR.
b. In addition, and assuming the applicant can demonstrate authorization to divert water as described in the DEIR, Holding Contract #15 obligates the water user to return any water used for specified industrial purposes to the river free of pollution and/or contamination. The applicant should provide evidence that they are able to return the water to the river free of pollution and/or contamination. It appears the applicant is proposing to capture river flows in the Quarry Site that contain hazardous materials as a flood reduction strategy. This approach would create unnecessary pollution risk and divert water supplies into the quarry that would otherwise be available for other water users. All flood flows should be routed away from the site. The project proponent should also confirm with the State Water Resources Control Board that this action would conform with the Governor's order regarding the use of flood flows for groundwater recharge.

Floodplain Analysis

Comment 6-8

Reclamation has serious concerns about the use of an alternative floodplain map in the hydrologic impact analysis. The current Federal Emergency Management Agency (FEMA) map shows portions of both the Quarry Site and the Plant Site to be located within the 100-year floodplain. Given the proposed project's 100-year life, that would mean the project sites have a 63% chance of flooding within the project lifetime and a 38% chance of experiencing a 200-year flood during the proposed project's 100-year life (NOAA's

National Weather Service, n.d.). The DEIR uses an alternative floodplain map, which does not show the Quarry Site to be located within the floodplain, as the basis for the analysis of impacts of the proposed project. Reclamation has several concerns with this approach:

Comment 6-8 cont.

a. The alternative map does not appear to have been peer reviewed or accepted by FEMA as an official amendment to the currently effective Flood Insurance Rate Map through a Letter of Map Revision (LOMR). Use of an alternate floodplain map that has not been approved through FEMA floodplain mapping is insufficient evidence to demonstrate that the Quarry Site would not be impacted by a 100-year flood event.
b. The 2022 public draft of the Central Valley Flood Prevention Plan Technical Analyses Summary Report (2022 CVFPPT draft technical analyses) (Department of Water Resources, 2022) includes climate change flood frequency analyses for low, medium, and high climate change impact scenarios in 2072. As a part of the analyses, it identifies the change in peak flows for the 1997 flood under the respective climate change conditions. It found that at the Gravelly Ford gage, the projected change in peak flows would increase 132% under the low scenario, 162% under the medium scenario, and 208% under the high scenario (Table 5.6). This data strongly suggests flood forecasts will increase in magnitude over the life of the proposed project.

The applicant's less conservative approach increases the risk that flood water will enter the proposed project sites without impact assessments or mitigation measures. Until FEMA has accepted the applicant's alternative floodplain map through a LOMR, the official FEMA map should be used for all hydrologic analyses in the DEIR. Should the County move forward with the applicant's HEC-RAS model approach, Reclamation recommends running larger flood events, such as those anticipated in the 2022 CVFPPT draft technical analyses, to understand the risk of large flood events affecting the proposed project by connecting the river to the Quarry Pit and potentially polluting the SJR. In either case, the current analysis based on the alternative map does not include an analysis of direct or indirect impacts from overland flooding into the Quarry Site. Since the proposed project is within the FEMA 100-yr floodplain and is highly likely to experience a large flood during the proposed project life, an analysis of effects of overland flooding to the Quarry Site should be included in the DEIR.

Comment 6-9

Comment 6-10

Impact Analyses

Reclamation is concerned the DEIR provides an incomplete impact analysis for several resource categories as further described below.

Comment 6-11

Geology and Hydrology

Reclamation is concerned that the analysis presented in the DEIR has an antiquated understanding of SJR hydrology and understates the current and future connectivity between the SJR and the Quarry Pit. The analysis presented provides limited data comparing the river stage and groundwater levels and does not evaluate the river at higher stages as are expected with continued implementation of the SJRRP. In addition, connectivity may be greater than anticipated due to local variation in rock fracturing not characterized in the exploratory borings. Supplemental analysis should be completed to better understand the connectivity between the river and the Quarry Site so that appropriate mitigation can be developed and implemented.

Comment 6-12

It does not appear that an analysis was conducted of impacts of Plant Site pumping on the SJR. The SJR is approximately 800 feet from the Plant Site. Little Dry Creek, which provides tributary flows to the SJR, is within 200 feet of the Plant Site. Please provide an analysis as to how the lowering of the groundwater

Comment 6-13

table around the Plant Site will impact flows in the surface tributaries and include this additional impact determination in the DEIR. Comment 6-13 Cont.

In the analysis it is stated that the Friant-Kern Canal (FKC) is the primary contributor of groundwater in the area and compares maximum canal flows that only take place in wet years to median river flows in support of this claim. The FKC is lined and over a mile away from this location, while the river is only 200 feet from the site. Comparing maximum canal flows that only take place in wet years to median river flows does not account for temporal, hydrologic, or geographic factors. Please provide a supplemental analysis to verify this assumption or otherwise amend it. Comment 6-14

Water Quality

As currently proposed, water pumped from the sites would either directly, or after other uses, be placed into recharge pits and trenches adjacent to the site. However, there is no water quality treatment proposed to take place prior to placement in settling and recharge vessels. If water that exceeds water quality standards for surface or groundwater is placed in the trenches, it has the potential to contaminate existing groundwater supplies and percolate into the SJR, impacting aquatic species such as CV spring-run Chinook salmon. An analysis should be conducted on the proposed project's potential to contaminate river water from recharge operations. Comment 6-15

To the extent long-term recharge operations at the Quarry Site would be generated from pumping of the pond, pond water quality should be analyzed in greater detail to disclose what constituents would be put into the recharge trenches from the pond. The Quarry Site Pond should be monitored for water quality concerns in a similar fashion to the Plant Site Pond and, if water quality standards are exceeded, mitigation measures should be implemented, including but not limited to, installation of an aeration or oxygenation system in the Quarry Site Pond.

Biological Resources

Due to incomplete descriptions of existing conditions and incomplete hydrology, water quality, and other resource impact analyses, there is not currently enough information to complete a biological resources impact assessment since impacts to many of these resources, especially aquatic species, are dependent on other resource impacts. The biological resources analysis should be revised based on inclusion of the information requested above. Comment 6-16

Blasting Impacts

The river adjacent to the Quarry Site is a rearing site for juvenile CV spring-run Chinook salmon and an over-summer holding and spawning site for adult CV spring-run Chinook salmon. Although the project proponent's analysis concludes the blasting protocols will have significantly less impacts than those that may "cause harm" such as mortality, it is not possible to verify the field accuracy of the analysis. Blasting impacts greater than those stated in the report may impact fish behavior at various life stages (i.e., juveniles displaced from cover in rearing habitat, adults displaced from holding and spawning habitat) and therefore impact the success of SJRRP. Blasting impacts should be monitored to verify the level of impact. Comment 6-17

Invasive Species

Reclamation is concerned with the potential for invasive aquatic fish species entering the river from the Plant Site Pond, especially should the existing delivery ditch remain in place. The applicant should screen the ditch and ensure the ditch is in no way connected to the Plant Site, even in the event of flooding, to prevent invasive species introduction to the SJR. Comment 6-18

Cumulative Impacts

Comment 6-19

Reclamation is concerned about the cumulative impacts analysis. The SJR has significant cumulative impacts to its hydrology due to existing diversions, as demonstrated by the need for the SJRRP. Therefore, for the purposes of analyzing cumulative impacts to the hydrology of the SJR, cumulative impacts of this proposed project should be determined based on whether the project is cumulatively considerable, not on whether the impact itself is determined to be significant or if the project substantially draws down groundwater. Please revise this analysis.

Mitigation Measures

Comment 6-20

Floodplain Management

Reclamation requests the proposed project develop additional mitigation measures such as enhanced berms, overland flooding hazardous management plans for the site, and plans to put flood waters back into the river free of pollution or other water quality constituents from the sites to avoid and minimize impacts to the SJR in the event of a flood event.

Sediment Management

Comment 6-21

In reviewing Google Earth (n.d.) aerial photography, sediment deposition from the Plant Site into the delivery ditch is visible at times. The delivery ditch is directly connected to Little Dry Creek and the SJR. Plant Site flood protections should be increased as a part of project mitigation measures to maintain the natural channel and prevent the introduction of sediment into the river from the project site.

Blasting

Comment 6-22

The 2013 State of Alaska Department of Fish and Game Blasting Standard (Alaska Blasting Standard) cited by the applicant identifies mitigation monitoring (hydrophones) that should be conducted in conjunction with blasting (Timothy, 2013). Reclamation requests that the applicant adaptively manage blasting for impacts to aquatic life. Reclamation has provided a recommended mitigation approach for consideration:

Year 1 of blasting: Monitor blasting impacts at the river adjacent to the Quarry Site. Depending on monitoring results, implement the following actions:

(1) Below 0.6 pounds per square inch and 0.5 inches per second: no action.
(2) Between 0.6 pounds per square inch-6 pounds per square inch or 0.6 inches per second-2.0 inches per second: implement avoidance and minimization measures outlined in the Alaska Blasting Standard and continue monitoring.
(3) Above 7.3 pounds per square inch or 2.0 inches per second: implement avoidance, minimization, and mitigation measures outlined in the Alaska Blasting Standard and continue monitoring.

At the end of one year of monitoring, re-evaluate the need for monitoring using the following parameters:

(4) If after 1 year, river impacts stay below 0.6 pounds per square inch and 0.5 inches per second, no additional monitoring is needed so long as future blasting techniques don't create additional pressure or other river impacts.
(5) If after 1 year, river impacts have been between 0.6 pounds per square inch-6 pounds per square inch or 0.5 inches per second-2.0 inches per second, continue monitoring and implementing avoidance and minimization measures until 1 year of 0.6 pounds per square inch and 0.5 inches per second measurements.

(6) If after 1 year, river impacts exceeded above 7.3 pounds per square inch or 2.0 inches per second, continue to implement monitoring and avoidance, minimization, and mitigation measures until 1 year of lesser pounds per square inch measurements are experienced, at which point follow guidance for the range of pounds per square inch and inches per second measurements experienced.

Comment 6-22 cont.

If at any point blasting technique changes so that blasts have the potential to be more impactful to the surrounding land than they were during a 1-year monitoring period where blasts registered below 0.6 pounds per square inch and 0.5 inches per second at the river, river monitoring should take place for the period of higher impact blasting to verify that the new blasting technique does not create additional impacts to the river. So long as impacts of the new blasting technique remain below 0.6 pounds per square inch and 0.5 inches per second at the river, no additional monitoring is necessary for that blasting technique. If the blasting technique creates impacts, either cease the technique or re-enter monitoring, avoidance, minimization, and mitigation measures described above.

As a part of this adaptive management measure, the applicant is encouraged to work with Reclamation to understand when and where various life stages may be present to efficiently apply avoidance, minimization, and mitigation measures.

Groundwater Monitoring

Comment 6-23

Reclamation requests the applicant use the MW-2 monitoring well cluster in addition to MW-1 monitoring well cluster in the adaptive management plan for the Quarry Site. This would likely provide additional benefit to the mitigation measure by providing spatial coverage representing the southern portion of the Quarry Site. Infiltration from the river into the excavated site will be highly influenced by localized fracture characteristics, as demonstrated by the airlift permeability testing in hard rock at MW-2; the well's test results were 10 times greater than at MW-1.

Reclamation also requests that baseline conditions for all groundwater monitoring programs be developed so that they can adapt to expected increased baseflow conditions in the SJR associated with the SJRRP. Reclamation requests the opportunity to review and comment on the baseline proposals and to review the annual reports and any impact evaluations produced.

As currently proposed, the adaptive management plan states that if, upon additional assessment it is confirmed "that a decrease in groundwater levels greater than 15 percent is exclusively attributable to mine dewatering, then corrective measures would be implemented" (4.10-109). The burden of proof is inappropriately placed in this circumstance. The applicant should bear the responsibility to prove that their project does *not* contribute to impacts above 15 percent and, to the extent impacts may be attributable to them, appropriate corrective measures should be implemented. Reclamation recommends amending this in the adaptive management plan.

200-foot Setback

Comment 6-24

Reclamation is concerned about using a 200-foot setback from the river for the Quarry Site. There is no justification provided for the applicability of this setback other than preceding permits. The last time the Conditional Use Permits (CUPs) were updated was in 2004 (from the early 1980s), which was prior to the Settlement and Settlement Act that resulted in the SJRRP. Therefore, the 200-foot setback did not consider the SJRRP restoration activities and reintroduction of CV spring-run Chinook salmon. To avoid adversely impacting the implementation of the SJRRP, this buffer should be revised for any subsequent CUPs, including the proposed project. Reclamation recommends that, based on the sensitive special status resources present near the site, the maximum feasible setback be considered.

In conclusion, Reclamation does not have enough information to adequately analyze the impacts of the proposed project to the resources the agency manages. Reclamation requests additional information be provided in the DEIR regarding baseline conditions, impact analyses, and mitigation measures, as described above and in the attached technical comment spreadsheet.

Comment 6-25

Reclamation appreciates the opportunity to comment on this proposed project and the County's consideration of our comments. Please contact Ms. Becky Victorine at rvictorine@usbr.gov with any questions or if there is a need for discussion of these comments in more detail.

Sincerely,

Karl Stock
Regional Director
California-Great Basin Region
U.S Bureau of Reclamation
Department of the Interior

Enclosure

cc: Kristin White, Deputy Regional Director, California Great Basin, Bureau of Reclamation
Rain Emerson, Deputy Area Manager, SCCAO
Donald E. Portz, Program Manager, SJRRP
Jason Phillips, Chief Executive Officer, Friant Water Authority
Hamilton Candee, Altshuler Berzon LLP
Chuck Bonham, Director, California Department of Fish and Wildlife
Jen Quan, Regional Administrator, NOAA Fisheries West Coast Region
Paul Souza, Regional Director, Pacific Southwest Region, USFWS
Tom Gibson, Lead Deputy Director, California Department of Water Resources

References

Department of Water Resources. (May 2022). *2022 Central Valley Flood Protection Plan Update – Technical Analyses Summary Report, Public Draft.* State of California, The Natural Resources Agency.

Google Earth. (n.d.) [*Google Earth map of Plant Site*]. Retrieved February 27, 2025 from https://earth.google.com/web/@36.93183349,-119.73485824,92.70475009a,1490.43320907d,35y,0.71918359h,0t,0r/data=CgRCAggBQgIIAEoNCP_____wEQAA

NOAA's National Weather Service. (n.d.) *Flood Return Period Calculator.* https://www.weather.gov/epz/wxcalc_floodperiod

Timothy, J. 2013. Alaska blasting standard for the proper protection of fish. Alaska Department of Fish and Game, Technical Report No. 13-03, Douglas, Alaska.

#	Document	PDF pg	Section	Existing Text	Comment	
1	DEIR	29, 98			The Draft Environmental Impact Report (DEIR) does not include adequate information to determine the effects of the proposed project on all species listed under the Endangered Species Act (ESA) that have the potential to occur in the action area. The Regulatory Setting Section of Chapter 4.4 mentions the ESA but does not provide information on the applicability to this proposed project (i.e. whether consultation with the United States Fish and Wildlife Service (FWS) is required in accordance with Section 7 or Section 10 and if not, why). Recommend the project proponent request an official species list from the FWS and provide information in the analysis on the potential effects of the proposed project on all listed species potentially occurring in the action area and include project-specific information on the applicability of the ESA to the proposed project. Recommend the project proponent provide further information on what coordination is planned with FWS regarding an incidental take statement.	Comment 6-26
2	DEIR	29, 98			Please provide further analysis regarding the baseline conditions of the San Joaquin River (SJR) in the action area and the effects of the proposed project on the Central Valley (CV) spring-run Chinook salmon (Oncorhynchus tshawytscha) being reintroduced to the SJR by the San Joaquin River Restoration Program (SJRRP), as it is not adequately described in the DEIR. The United States Bureau of Reclamation (Reclamation) recommends the project proponents coordinate with all the SJRRP Implementing Agencies, including National Marine Fisheries Service (NMFS), to ensure that the analysis captures the environmental setting accurately and adequately, and that compliance with all applicable environmental laws and regulations are being documented for the proposed project.	Comment 6-27
3	DEIR	35	Impact Table	Impact 4.1-1 Rock Staining	If the walls are stained adjacent to the SJR's edge, there is a potential for the stain to seep or spill into the river. Recommend no staining of pit walls unless the project proponent can prevent impacts to the river through product selection and/or application precautions.	Comment 6-28

#	Document	PDF pg	Section	Existing Text	Comment	
4	DEIR	47	Impact Table	Impact 4.7-7 Result in slope instability.	The mitigation measures are good efforts to prevent a potential slope failure from occurring but do not address mitigation in the event a failure occurs. There is particular concern over the potential for failure adjacent to the SJR given the constant seepage and groundwater exchange occurring at the riverbanks. A mitigation plan should be included for the instance there is a slope failure in the quarry or the adjacent riverbank.	Comment 6-29
5	DEIR	118	2.4.2.1	The San Joaquin River is located approximately 0.5 miles to the west of the Plant Site. The project proponent has water rights to use river water for industrial purposes in connection with the processing of rock, sand, and gravel. Water is diverted from the river to the Plant Site via a ditch and the water is then used to wash the aggregate.	The DEIR improperly points to Holding Contract #15 as a water right; a Holding Contract does not purport to be a water right nor is it a water supply contract for Central Valley Project (CVP) water. Reclamation could not locate any water right associated with any CEMEX parcel and no water use reports could be located in the State electronic Water Rights Information Management System database. The project proponent should provide evidence that it may lawfully divert water as described in the DEIR.	Comment 6-30
6	DEIR	118	2.4.2.1	The San Joaquin River is located approximately 0.5 miles to the west of the Plant Site. The project proponent has water rights to use river water for industrial purposes in connection with the processing of rock, sand, and gravel. Water is diverted from the river to the Plant Site via a ditch and the water is then used to wash the aggregate.	Holding Contract #15 obligates the water user to return any water used for specified industrial purposes to the river free of pollution and/or contamination. The project proponent should provide evidence that they are able to return the water to the river free of pollution and/or contamination.	Comment 6-31

#	Document	PDF pg	Section	Existing Text	Comment	
7	DEIR	118	2.4.2.1	[Plant site] Approximately 35 acre-feet/year of groundwater from onsite wells is consumed by the ready-mix concrete operations with a small amount of groundwater (approximately 1 acre-feet/year) also used for domestic purposes (e.g., toilets, handwashing, etc.).	With groundwater levels from 21 to 34 ft below ground surface (bgs), "groundwater" at the Plant Site from shallow wells is more likely interconnected with surface waters, predominantly the SJR. If so, the shallow well use at the Plant Site would then be considered a use of surface waters and would require associated water rights, only deep wells would truly be "groundwater."	Comment 6-32
8	DEIR	120	Current CUP permits		The last time the Conditional Use Permits (CUPs) were updated was in 2004, which is prior to the SJR Settlement that resulted in the SJRRP. Therefore, the 200-foot setback from the river did not consider the SJRRP, the restoration goals and the reintroduction of CV spring-run Chinook salmon. To avoid adversely impacting implementation of the SJRRP and salmon, this buffer should be revisited for any subsequent CUPs, including the bedrock quarry proposal.	Comment 6-33
9	Appendix 2 of 2	131	Well Diagram and Logs	Well Log MW-2	Mitigation measures identified in the DEIR propose consistent monitoring of wells to ensure no impact to groundwater during operations, but it does not appear the monitoring wells are sufficiently deep to monitor deep aquifer impacts. Please clarify how monitoring efforts will be implemented and adapted to reflect conditions of the deep aquifer and ensure adequate mitigation.	Comment 6-34
10	DEIR	331	4.4.1.3	River Water Delivery Ditch	Please describe how the surface water diversion operates in greater detail. For example, is this waterway screened? What species exist in the diversion? How does water move from the diversion to the Plant Site, and how does it interact with the Plant Site at various flow levels? Is the ditch grade maintained by dredging?	Comment 6-35

#	Document	PDF pg	Section	Existing Text	Comment	
11	DEIR	335	4.4.1.4	Plant Site Wildlife	With the connection of the Plant Site to the SJR through a delivery ditch, are there any potential mitigation measures that could be implemented to prevent non-native species from entering the SJR? Reclamation recommends incorporating some mitigation measure to prevent fish species from using the ditch as a corridor between the Plant Site and the SJR.	Comment 6-36
12	DEIR	341	4.4.1.4	Quarry Site Wildlife	Please clarify the methods used for the Quarry Site assessment of aquatic species. Also, please provide information regarding how native species arrived in the ponded pits and whether those conditions would allow fish from the SJR to get into the pits. Reclamation recommends a more thorough investigation of the aquatic species near the proposed project site, especially in the ponded pits.	Comment 6-37
13	DEIR	385	Impact 4.4-5	...do not fall under the regulatory authority of the Army Corps, SWRCB, or CDFW	The delivery ditch identified at the Plant Site is directly connected to Little Dry Creek (LDC), which flows into the SJR. However, there is no discussion of this existing condition. In reviewing aerial imagery, there are visible sediment depositions that appear to have originated from the Plant Site and were released into the delivery ditch. This sediment disposition causes turbidity issues and impacts to water quality within LDC and the SJR. Please describe the hydrologic connectivity of the delivery ditch to the Plant Site, how sediment and water quality have been managed to date, and the potential impacts of sediment and water quality concerns to riparian areas along LDC and the SJR.	Comment 6-38
14	DEIR	385	Impact 4.4-5	result of dewatering would not adversely affect streamflow in either the San Joaquin River or Little Dry Creek because as described above dewatering of these deeper geologic units would not affect the quantity of water in the river.	This discussion in not consistent with the discussion of Impact 4.10-12, which states there is potential for significant impact; Mitigation Measure 4.10-10a is needed to protect the SJR adjacent to the Quarry Site due to this impact. Impact 4.4-5 describes reduced issues as compared to those described in 4.10-12, by stating that the SJR and LDC are usually losing streams without recognizing connectivity. Please provide a more thorough, consistent analysis and discussion of Impact 4.4-5, particularly LDC during all hydrologic conditions.	Comment 6-39

#	Document	PDF pg	Section	Existing Text	Comment	
15	DEIR	385	4.4.4	...together demonstrate that the San Joaquin River is not in direct hydraulic communication with the weathered rock and hard rock at the Quarry Site.	While the connection in weathered rock and bedrock is more limited, it is inaccurate to state that there is no hydraulic connection. Please revise this statement and any related analyses and impact determinations accordingly.	Comment 6-40
16	DEIR	386	4.4.4	Fish species that occur in the San…	This is an inadequate description of fish species in the SJR. Reclamation suggests investigating resources on the SJRRP website(restoresjr.net) and from other resource agencies to better describe the aquatic resources in the SJR and consider potential effects and mitigation relevant to the proposed project.	Comment 6-41
17	DEIR	387	4.4.4	In 2013, the Alaska Department of Fish and Game…	Please clarify if this blasting standard is the common industry standard, or only the standard for Alaska?	Comment 6-42
18	DEIR	387	4.4.4	This level of ground vibration is significantly…	The SJR adjacent to the Quarry Site is a spawning site for CV spring-run Chinook salmon. Although the project proponent's analysis concludes the blasting protocols will have significantly less impacts than those that may "cause harm" such as mortality, it is not possible to verify the field accuracy of the analysis. Blasting impacts greater than those stated in the DEIR may impact fish behavior at various life stages (i.e., juveniles displaced from cover in rearing habitat, adults displaced from spawning habitat) and therefore impact the success of the SJRRP. Reclamation requests the monitoring and avoidance, minimization, and mitigation measures outlined in the Alaska blasting standards be implemented as necessary for blasting impacts.	Comment 6-43
19	DEIR	554	4.9		Based on the language in the DEIR, it does not appear that the hazardous materials plan accounts for overland flooding of the Quarry Site. Please provide a hazardous materials plan that accounts for the possibility of overland flooding.	Comment 6-44
20	DEIR	567	Figure 4.10-1		It appears the Quarry Site is within the Federal Emergency Management Agency (FEMA) 100-year Zone AE floodplain, as is a portion of the Plant Site. How will the project proponent prevent flood water from entering the Quarry Site in a 100-year or greater event?	Comment 6-45

#	Document	PDF pg	Section	Existing Text	Comment	
21	DEIR	569		The easterly bank slope is generally flatter than 2:1 (horizontal: vertical). There are no signs of significant bank erosion. During historic flow events, including the January 1997 flood event of approximately 60,300 cubic feet per second (cfs), the easterly bank along the Quarry Site did not experience significant erosion and the bank has never breached into the Quarry Site.	Reclamation recommends conducting a bank stability model that incorporates recharge operations and flooding events to ensure the risks of bank erosion will not increase due to recharge operations.	Comment 6-46
22	DEIR	569			As currently documented and designed, the sites do not contemplate mitigation of overland flow events greater than a 100-year flood. It appears there is notable risk of capturing river flows and contaminating river water and groundwater in an event greater than a 100-year flood. Reclamation recommends that larger events should also be considered in the analysis; County Policy HS-C.14 suggests a 200-year floodplain should be considered. Consider constructing larger levees that can protect the Plant and Quarry Sites from events greater than a 100-year flood.	Comment 6-47
23	DEIR	577	4.10.1.5	San Joaquin River floodway generally does not encroach onto the Plant Site or Quarry Site, but the floodplain encroaches on the west side of both sites	The description of Figure 4.10-1 (on page 4.10-15) incorrectly characterizes encroachment as potentially occurring by the floodway or floodplain onto the Plant or Quarry Site, instead of the other way around. Please revise the text to characterize the sites' encroachment (or not) into the floodway or floodplain.	Comment 6-48
24	DEIR	578	4.10.1.5	Controlled Release from Dam	Operations of Friant Dam have changed greatly in the last decade and should be described here.	Comment 6-49
25	DEIR	579	Figure 4.10-5		It appears the Quarry Site equipment will be placed below the groundwater table and the Quarry Site may need to be continuously pumped to not flood the aggregate plant, asphalt plant, ready-mix concrete plant, and office. What happens if a pump goes down and these structures start to flood? Please include appropriate mitigation measrues to address this possibility.	Comment 6-50

#	Document	PDF pg	Section	Existing Text	Comment	
26	DEIR	585			It appears that some of the ponded water on the sites exceed water quality standards. The project proponent claims water quality exceedances are acceptable because the proposed project does not discharge directly to the SJR, however at the Quarry Site the proposed project discharges within 100 feet of the river and leaves minimal opportunity for filtration. Additional water treatment should be conducted before recharging water collected from the Quarry or plant Sites.	Comment 6-51
27	DEIR	585	Plant Site Surface Water Quality		The water quality analysis of the Plant Site's silt pond shows high exceedances for metals. Please analyze and disclose the potential for those metals to leach into the soils and surrounding groundwater.	Comment 6-52
28	DEIR	588	Table 4.10-4		It appears the water quality parameters sampled for at the Plant Site were not repeated at the Quarry Site. For instance, arsenic and lead were not sampled; these constituents should be sampled at both sites. Please provide congruent sample information as a part of any analysis.	Comment 6-53
29	DEIR	600	4.10-37		Please clarify if trenches and pumps are sized to move and recharge Quarry Site groundwater and rainwater during wet years, or if pump and/or trench capacity will be exceeded in wet years. If capacity will be exceeded, please clarify how site flooding will be mitigated.	Comment 6-54
30	DEIR	605			To complete a meaningful review of the water quality of the SJR compared to the Quarry Site, the river should be analyzed upstream of any potential groundwater seepage or other impacts from the mining operation. Please include a SJR sample site both upstream and downstream of the proposed project and revise the analysis accordingly.	Comment 6-55
31	DEIR	610	San Joaquin River Connection to the Quarry Site		Please discuss lagged depletions from the SJR to the Quarry Site through weathered rock and bedrock in the DEIR.	Comment 6-56

#	Document	PDF pg	Section	Existing Text	Comment	
32	DEIR	611		The water level data for well MW-2S, screened only in the alluvium, shows that the well does not contain water except during periods when the San Joaquin River stage is greater than 4 feet. A review of river stage data from January 2014 to February 2023 indicates that the San Joaquin River stage measurements exceeded 4 feet for approximately 13 percent of the January 2014 to February 2023 time period.	SJRRP flows will increase the river stage in the coming years. How are future conditions with the proposed project analyzed to account for SJRRP flows in the SJR? How will the project proponent ensure SJRRP flows are not taken by proposed project pumping?	Comment 6-57
33	DEIR	611		Thus, for water to flow from the river and into the alluvium any appreciable distance, the San Joaquin River stage needs to be somewhat higher than 2.5 feet to create a sufficient hydraulic gradient, or slope, away from the river and toward the well location.	This conclusion appears overly broad. It does not address connectivity between weathered rock and bedrock, and it does not address changes to the hydraulic gradient caused by factors such as pumping adjacent to the SJR (as is proposed by the proposed project) or the impacts of recharge trenches. It is unclear if water could be pulled away from the SJR through alluvial material at low stages in these circumstances. Supplemental analysis should be conducted to address these scenarios.	Comment 6-58
34	DEIR	611	4.10.1.9	Thus, when the stage of the river is high enough that the water surface is above the base of the alluvium, there is a higher potential for seepage of water from the river into the Quarry Site... As a result, the San Joaquin River flows are always in contact with the alluvium (which overlies the weathered rock) in this segment of the river.	Will recharge trenches in the NW corner of the Quarry Site provide water that will travel toward the SJR, or will the water move toward the quarry due to location and the hydraulic grade created by continued pumping? How will the hydraulic grade created by recharge trenches and pumping be impacted by varying hydrologic conditions? The analysis presented suggests there is not a strong correlation between the SJR and Quarry Site groundwater. However, as described, the analysis is insufficient to reach this conclusion. Please expand the discussion on this topic and provide a supplemental analysis.	Comment 6-59

#	Document	PDF pg	Section	Existing Text	Comment	
35	DEIR	617		Charts 1 and 2 of Figure 4.10-11 also show relatively minor fluctuations in water levels at the monitoring wells, with the difference between minimum and maximum elevations measured being approximately 10 feet or less... The data from the longer period of record for the offsite wells corroborates the conclusion that, while local rainfall and increased river flows or stages may have short-term effects on the groundwater levels in the weathered rock and hard rock at the Quarry Site and its vicinity, such effects are minor and do not persist.	Comparing recent data to data from 50 years ago is not an appropriate analysis to verify the validity of the project proponent's claim about consistent groundwater levels in the area or that local rainfall and river flow has short term, minor effects on groundwater levels in the weathered rock and hard rock at the Quarry Site. Comparison of monitoring well data to offsite wells should have overlapping periods of record and long-term trends should be evaluated based on recent conditions, not conditions from 50 years ago. Please remove this comparison and any conclusions supported by it, or otherwise provide supplemental, local data to provide relevant trend comparisons.	Comment 6-60
36	DEIR	617	4.10-55	The data from the longer period of record for the offsite wells corroborates the conclusion that, while local rainfall and increased river flows or stages may have short-term effects on the groundwater levels in the weathered rock and hard rock at the Quarry Site and its vicinity, such effects are minor and do not persist.	These conclusions should be separated to address rainfall and river stage separately, since the two appear to have different levels of correlation with groundwater levels. The charts demonstrate a close correlation between river stage and groundwater levels. This correlation demonstrates a significant risk of future river dewatering through Quarry Site dewatering. This impact should be addressed in the document and adequately avoided, minimized, or otherwise mitigated in the project plans.	Comment 6-61

#	Document	PDF pg	Section	Existing Text	Comment	
37	DEIR	617	4.10.1.9	conclusion that, while local rainfall and increased river flows or stages may have short-term effects on the groundwater levels…such effects are minor and do not persist.	The bottom of page 4.10-55 makes the conclusion that "increased river flows or stages may have short-term effects on the groundwater levels" at the Quarry Site but "such effects are minor and do not persist." This conclusion ignores the hydraulic connection between groundwater and the SJR that can be observed during periods of higher river stages (Figure 4.10-11) and contributes to stable groundwater elevations in the monitoring wells from generally stable river flows the rest of the year. This hydraulic connection in all three groundwater zones at MW-1 and MW-2 on the west side of the Quarry Site near the river is described in Appendix G-4 (page 35 and 50) but is absent from the text of the DEIR. Please incorporate this data into the DEIR analysis and revise the DEIR impact conclusions to incorporate this information.	Comment 6-62
38	DEIR	618		Based on pumping records provided by the project proponent, during the 2018-2019 water year, a total of 330 acre-feet were pumped from the existing mining excavation... This indicates that, while there is some hydraulic connectivity between the San Joaquin River and the Quarry Site, water from San Joaquin River is currently not a substantial source of the groundwater inflow into excavations within the Quarry Site.	The previous section states that connection to the SJR is not significant until the SJR reaches a stage 2.5 ft or higher. This analysis makes conclusions about connectivity to the SJR without verifying the stage was high enough to analyze connectivity when, as claimed by the project proponent, connectivity would be possible. In addition, this analysis was completed without a full year's worth of data; the spring runoff period is when the SJR is most likely to have a higher stage, as discussed in previous sections, and is not included in this analysis. Without this data, there is no way to understand how groundwater and groundwater pumping are related to river flows. The existing analysis should be supplemented with an analysis that includes seasons when the SJR stage is above the start of the alluvial material. In addition, this analysis does not consider impacts of pumping and its effects on hydraulic gradient or lagged impacts of pumping on river flows and vice versa. These influences should be considered in a supplemental analysis.	Comment 6-63

#	Document	PDF pg	Section	Existing Text	Comment	
39	DEIR	618		The *Hydrology and Water Quality Analysis Report* (Appendix G-5) notes that the median flow in the San Joaquin River is 394 cfs, while diversions to the canal are in the range of 4,200 cfs. Thus, leakage from the canal flows, which flow year-round, are likely an important source of groundwater recharge to the areas in the vicinity of the Friant-Kern Canal, including the Quarry Site. This is consistent with the *Groundwater Sustainability Plan* for the North Kings GSA, which identifies both the San Joaquin River and the Friant- Kern Canal as significant sources of groundwater recharge to the North Kings GSA (North Kings GSA 2022).	The Friant-Kern Canal (FKC) is lined and over a mile away from this location, while the river is only 200 feet from the site. Comparing maximum canal flows that only take place in wet years to median river flows does not account for temporal, hydrologic, or geographic factors that influence groundwater availability. Please provide a supplemental analysis to verify this assumption or otherwise amend this statement.	Comment 6-64
40	DEIR	621	Figure 4.10-13		This figure does not account for any lagged depletion that might exist between the SJR and groundwater due to pumping. A supplemental analysis should be completed that considers lagged impacts to the river.	Comment 6-65
41	DEIR	623	Table 4.10-7	implies not any significant or consistent flow of water from the river to the GW at the Quarry Site	Comparing SJR water levels from spring 2017 (wet year) to monitoring levels in fall 2021 (critical-high year) is not an appropriate comparison. Also note that the recharge trenches are right next to the monitoring wells, so they would influence water levels and quality. Any analysis used to support an impact conclusion should use data from a single analysis time period where there is data available at all monitoring locations. Further, this data should be taken at varying hydrologic regimes to reflect varying conditions, and artificial recharge should either not be taking place or otherwise appropriately addressed in any analysis to ensure the results are not artificially swayed by recharge operations.	Comment 6-66

#	Document	PDF pg	Section	Existing Text	Comment	
42	DEIR	629			It appears that Waste Discharge Requirement Order 90-083 for the Plant Site expired in 2020. Is there a subsequent order permitting discharge? Please provide or reference any subsequent permits with the DEIR materials.	Comment 6-67
43	DEIR	633		The Surface Mining and Reclamation Act of 1975 (SMARA) (Public Resources Code [PRC], Sections 2710–2796) and its implementing regulations (California Code of Regulations [CCR], Title 14, Section 3500 et seq.).....SMARA 14 CCR Section 3706 applies to the discussion of the project's potential for hydrology and water quality impacts:.....f) When stream diversions are required, they shall be constructed in accordance with: (1) the stream and lake alteration agreement between the operator and the Department of Fish and Game; and (2) the requirements of the Federal CWA, Sections 301 (33 U.S.C. 1311) and Section 404 (33 U.S.C. 1344) and/or Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).	Does the SJR diversion conform to Surface Mining and Reclamation Act standards? This should be reassessed as a part of this permit application to ensure that the proposed project does not contaminate the SJR and impact Reclamation water interests.	Comment 6-68

#	Document	PDF pg	Section	Existing Text	Comment	
44	DEIR	646		The analysis assumes that the operator of the Rockfield Quarry (Operator) would comply with the requirements of the California Surface Mining and Reclamation Act, Fresno County Ordinance Code, and NPDES requirements.	Aerial photos indicate there have likely been previous breaches at the Quarry Site. Given the existing conditions, mitigation measures should be incorporated into the proposed project to reduce the risk of future surface water contamination events.	Comment 6-69
45	DEIR	654		**Mitigation Measure 4.10-1:** *Blasting Protocols - The operator of the Rockfield Quarry shall at all times implement the requirements of the "Blasting Protocols" developed October 27, 2020, and updated September 8, 2021, by Vibra-Tech Engineers, Inc. The Blasting Protocols shall be appended to the Mitigation Monitoring and Reporting Program and shall be incorporated into the conditions of approval for the project.*	Reclamation is concerned that until blasting impact significance can be verified through monitoring, there continues to be the potential for significant blasting impacts. Please see Reclamation's letter for a proposed monitoring and mitigation plan.	Comment 6-70
46	DEIR	655	Impact 4.10-4		The impact to the Plant Site is currently being assessed based on groundwater quality, but recharge trenches will put surface water into the groundwater. Therefore, existing groundwater *and* surface water conditions should be evaluated when determining the proposed project's impact to groundwater quality. According to Table 4.10-3, surface water on the site exceeds water quality standards for manganese, iron, lead, arsenic, and conductivity. All these parameters should be considered in the analysis.	Comment 6-71

#	Document	PDF pg	Section	Existing Text	Comment	
47	DEIR	658		The adaptive management program would be responsive to changing water quality conditions in the reclaimed pond over time... If the iron and/or manganese levels persist above their respective water quality standards, then the mitigation measure recommends feasible actions that can be taken to address reducing conditions in the pond.	Table 4.10-3 indicates that more than just manganese and iron exceed water quality standards. All parameters that exceed water quality standards should be included in any monitoring and adaptive management plan. Monitoring should be conducted monthly. Iron, manganese, lead, and arsenic monitoring should take place at least every six months or immediately upon determination that there have been two exceedances of one of the action parameters, whichever is more frequent. Once iron, manganese, lead, and arsenic monitoring has begun, it should continue monthly until exceedances have resolved for at least two measurement cycles. Monitoring results should be provided to the County of Fresno and stakeholders yearly unless there is an exceedance event, at which point parties should be notified within 30 days of testing.	Comment 6-72
48	DEIR	658	Mitigation Measure 4.10-5a		The 5-year clock on this monitoring should not start until the Plant Site Pond has completely filled and any vegetation present has an opportunity to degrade, creating a hydrologically stable pond elevation and low dissolved oxygen (DO) conditions, at least one year after the pond is filled. Monitoring should also take place as the pond fills.	Comment 6-73
49	DEIR	662	Impact 4.10-6	The Operator would be required to update the existing HMBP and SPCC Plan for both the Plant Site and Quarry Site and in accordance with hazardous material regulations.	The proposed project poses significant risk of flooding at the Quarry Site. The project proponent should clarify that the updated Hazardous Materials Business Plan and Spill Prevention, Control, and Countermeasure Plan will include a specific plan for Quarry Site flooding, or otherwise this plan should be added as a mitigation measure to prevent significant water quality impacts to the SJR and groundwater in the event of a flood.	Comment 6-74

#	Document	PDF pg	Section	Existing Text	Comment	
50	DEIR	662	Impact 4.10-6	As described in the "Groundwater Quality at the Quarry Site" subsection of Section 4.10.1.7, above, groundwater sampling of monitoring wells at the Quarry Site indicates that all constituents were generally within water quality standards, except for nitrate, manganese, and gross alpha activity, which exceeded thresholds in some of the wells sampled.	The impact to the Quarry Site is currently being assessed based on groundwater quality, but recharge trenches will put surface water into the groundwater. Therefore, existing groundwater *and* surface water conditions should be evaluated when determining the proposed project's impact to groundwater quality. According to Table 4.10-3-4, surface water on the site exceeds water quality standards for manganese, iron, lead, arsenic, and conductivity. All of these parameters should be considered.	Comment 6-75
51	DEIR	663	Impact 4.10-6	However, since the rate of inflow of 455 acre-feet per year exceeds the evaporation rate of 380 acre-feet per year, dissolved solids would not accumulate over time because they would be continually diluted by the inflow of water with an average TDS of 100 mg/L... Therefore, the potential for the quarry pit lake to accumulate concentrations of constituents that would violate water quality standards or waste discharge requirements, or otherwise degrade water quality, would be less than significant.	Dilution of existing pond water with water that also has dissolved solids will not prevent accumulation of dissolved solids and other water quality constituents such as minerals and metals; accumulation will take place over time because evaporation will not remove dissolved solids from the pond. This analysis should be revised.	Comment 6-76
52	DEIR	663	Impact 4.10-6	**Violate Groundwater Quality Standards or Otherwise Substantially Degrade Groundwater Quality at the Quarry Site Due to the Ponding of Water in the Excavation**	At this point, there is insufficient analysis to determine that this impact is not significant. Additional analysis should be conducted, and this determination should be reconsidered accordingly, including the potential incorporation of mitigation measures and adaptive management actions to address potentially significant impacts.	Comment 6-77

#	Document	PDF pg	Section	Existing Text	Comment	
53	DEIR	663	Impact 4.10-6		Reclamation requests that the Quarry Site Pond be monitored for water quality concerns in a similar fashion to the Plant Site Pond. If water quality standards are exceeded at the Quarry Site Pond, mitigation of impacts should be implemented, including but not limited to the installation of an aeration or oxygenation system.	Comment 6-78
54	DEIR	663	Impact 4.10-6		The project proponent has not provided any information on what types of metals or minerals may be naturally present in bedrock and deeper groundwater sources that may impact water quality at the Quarry Site. Without a clear understanding of what parameters may exceed water quality standards, it is not possible to know exactly what constituents should be monitored. Therefore, during mining and reclamation a wide suite of water quality constituents should be monitored to ensure an appropriate long-term monitoring and adaptive management plan is developed and implemented.	Comment 6-79
55	DEIR	663	Impact 4.10-6		At 100 feet deep, the Quarry Site Pond will likely experience low dissolved oxygen (DO) conditions near the bottom. This will make any accumulated metals soluble, increasing the chances of exceeding water quality standards and contaminating adjacent groundwater or alluvial groundwater that is receiving pumped pond water to recharge pits. Should the Quarry Site, during mining, reclamation, or after pond inundation show high levels of metals or trend toward increased metal loads that could contaminate local groundwater supply or the SJR through groundwater recharge, appropriate mitigation measures should be implemented including stopping excavation or installing and maintaining an appropriate system to increase DO in the pond.	Comment 6-80

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56	DEIR	663	Impact 4.10-6	Upon the completion of Phase 1 and Phase 2 mining operations at the Quarry Site, the entire quarry pit excavation would have a bottom depth of approximately 290 feet below msl and would fill with groundwater and rainfall to form a 100-foot-deep lake with a surface elevation of about 190 feet below msl, which is about 500 feet below the surrounding grade (shown in Figure 2-10). Once the quarry pit fills to that level, approximately 195 acre-feet of groundwater and 260 acre-feet of rainfall and local runoff would enter the Quarry on an annual basis.	Why does this analysis assume the water level in the Quarry Site Pond will stay 500 ft below ground surface (bgs) when current groundwater elevations are less than 50 feet bgs? One would assume the water level would attempt to rise to reach equilibrium with the level of the existing groundwater table. Please provide evidence to support this assumption.	Comment 6-81
57	DEIR	664	Impact 4.10-8	The use of the recharge trenches would limit the amount of drawdown of the water table in the unconfined alluvial aquifer to six to eight feet at a distance of 500 feet from the excavation (KDSA 2021). As shown in Table 4.10-8, there are no supply wells within 500 feet of the excavation. At a distance of 500 feet to 1,000 feet from the excavation, within which there are three wells, the drawdown would be approximately three to five feet (KDSA 2021).	The SJR is approximately 800 feet from the Plant Site. LDC, which provides tributary flows to the SJR, is within 200 feet of the Plant Site. Please provide a detailed analysis as to how the lowering of the groundwater table around the Plant Site will impact flows in the surface tributaries and describe the outcome of this analysis in a new impact determination within the DEIR. Any impacts to the SJR should be mitigated to avoid impacts to biological resources and other water users.	Comment 6-82

#	Document	PDF pg	Section	Existing Text	Comment	
58	DEIR	670	Mitigation Measure 4.10-10a	*For the San Joaquin River, the impact must be specific to both the alluvium and weathered rock aquifer zones.*	These zones could deplete and replenish at different rates. This is not an appropriate measure of impact and should be revised.	Comment 6-83
59	DEIR	670	Mitigation Measure 4.10-10a	If mining progresses to the full approved depth without causing a potentially significant impact to nearby wells or flows in the San Joaquin River, then monitoring in the MW-1 and MW-3 well clusters will continue for at least 3 years, to include at least two below-normal rainfall years or one critically dry year, as defined by DWR.	Monitoring at the well clusters should continue for at least 10 years after mining has ceased and include at least one wet year, as defined by the California Department of Water Resources.	Comment 6-84
60	DEIR	670	Mitigation Measure 4.10-10a	If the additional assessment confirms that a decrease in water levels greater than 15% is exclusively attributable to mine dewatering, then corrective measures would be implemented.	As currently proposed, the adaptive management plan states that if, upon additional assessment it is confirmed that a decrease in groundwater levels greater than 15 percent is exclusively attributable to mine dewatering, then corrective measures would be implemented (4.10-109). The burden of proof is inappropriately placed in this circumstance. The applicant should bear the responsibility to prove that their project does not contribute to impacts above 15 percent and, to the extent impacts may be attributable to them, appropriate corrective measures should be implemented. Reclamation recommends amending this in the adaptive management plan.	Comment 6-85

#	Document	PDF pg	Section	Existing Text	Comment	
61	DEIR	670	Mitigation Measure 4.10-10a	If the monitoring data indicate that groundwater levels in any of the monitored wells drop such that the available water column decreases by more than 15%, then a significant impact to available groundwater supply will have occurred.	Any measured change should be based on the change at any given point compared to what groundwater levels would be without the proposed project, not a percentage from current conditions. Groundwater levels will continue to fluctuate in dry and wet years and with the increased SJRRP Restoration Flows down the SJR in the future. Increases in groundwater levels due to other factors such as SJRRP flows could mask impacts of the proposed project. Reclamation requests the applicant use the MW-2 monitoring well cluster in addition to the MW-1 monitoring well cluster in the adaptive management plan for the Quarry Site. This would likely provide additional benefit to the mitigation measure by providing spatial coverage representing the southern portion of the Quarry Site. Infiltration from the river into the excavated site will be highly influenced by localized fracture characteristics, as demonstrated by the airlift permeability testing in hard rock at MW-2; the well's test results were 10 times greater than at MW-1. Reclamation also requests that baseline conditions for all groundwater monitoring programs be developed so that they can adapt to expected increased baseflow conditions in the SJR associated with the SJRRP. Reclamation requests the opportunity to review and comment on the baseline proposals and to review the annual reports and any impact evaluations produced.	Comment 6-86
62	DEIR	670	Mitigation Measure 4.10-10a	If, during mining, all available water from dewatering is being pumped to the recharge trench and the water column in the MW-1 well cluster remains below 85% of baseline elevations, then mining could not progress to greater depths in the quarry.	If recharge operations cannot recover the water column in the MW-1 well to within 85% of baseline elevations, ceasing mining to greater depths prevents further impact, but it does not mitigate for the impact that has already occurred. How would the mitigation plan ensure impacts are corrected even after mining ceases?	Comment 6-87

#	Document	PDF pg	Section	Existing Text	Comment	
63	DEIR	670	Mitigation Measure 4.10-10a	The dataloggers shall be programmed to record water levels at least once every six hours such that a range of static and pumping water level effects would be captured. The data shall be downloaded every six months for review and subsequent inclusion in annual mitigation monitoring reports.	Dataloggers should receive more regular downloads to ensure proper function and to be able to provide any impact threshold data more regularly than every 6 months. Sufficient baseline data should be collected from the dataloggers prior to work starting on the Quarry Site to ensure an understanding of existing hydrologic conditions and to validate and calibrate any groundwater models that may be required. This data set should include wet, dry, and average year hydrology.	Comment 6-88
64	DEIR	670	Mitigation Measure 4.10-10a	The rate of pumping into the recharge trench would be increased until the water column in the MW-1 well cluster and any monitored private wells west of the Quarry Site recover to within 85% or more of baseline levels.	What is considered "baseline level" for these wells? These terms should be dynamic based on hydrologic conditions, including increases in SJRRP flows, and the definitions should be approved by impacted stakeholders. Reclamation requests the opportunity to review the proposed baseline levels and have its comments considered in the development of baseline levels.	Comment 6-89
65	DEIR	670	Mitigation Measure 4.10-10a		The Quarry Site Groundwater Adaptive Management Program should be designed to assess any potential effect, and avoid, minimize, or otherwise mitigate the effect, to the SJR and alluvial groundwater system surrounding it, not only the CSA 44C wells, as is listed now.	Comment 6-90
66	DEIR	670	Mitigation Measure 4.10-10a		Any discharged water must be of sufficient quality to keep CV spring-run Chinook salmon in "good" condition to be consistent with the Restoration Goal of the SJR Settlement.	Comment 6-91
67	DEIR	670	Mitigation Measure 4.10-10a		Please provide a map of the well sites referenced in Mitigation Measure 4.10-10a.	Comment 6-92

#	Document	PDF pg	Section	Existing Text	Comment	
68	DEIR	675	Impact 4.10-12	The base flows within the San Joaquin River are typically at or below the elevation of the base of the alluvium on the Quarry Site. Thus, flows from the San Joaquin River toward the Quarry Site within the alluvium can only occur during the infrequent and relatively short-term high flow periods. Due to the recharge trenches along the west side of the Quarry Site, groundwater levels in the alluvium and the weathered rock would be maintained consistent with existing conditions. As a result, there would be no significant change in the volume of potential inflow from the river into the quarry during high flow events through the alluvium and weathered rock as a result of the project.	This assumption should be verified through a robust monitoring program that is adapted to consider future baseline conditions and, should impacts to the SJR occur, appropriate mitigation should be implemented.	Comment 6-93
69	DEIR	675	Impact 4.10-12	Increases in the San Joaquin River stage of three to six feet may increase the groundwater level in the band of alluvium between the river and the existing quarry by six inches up to three feet for periods of a few weeks to a month.	How will this be impacted by changes to the hydraulic gradient due to pumping? Please complete a supplemental analysis that includes this information, incorporate mitigation measures, and revise impact determinations, as applicable.	Comment 6-94

#	Document	PDF pg	Section	Existing Text	Comment	
70	DEIR	679	Impact 4.10-14	As described in the "Erosion and Sedimentation" subsection of Section 4.10.1.5, above, results of the Hydraulic Analysis indicate that the 100-year flow velocities along the Quarry Site river bank under existing conditions are generally at or below the 6 fps "permissible velocity" below which the natural channel will resist erosion, at all cross- sections shown in Figure 4.10-1 except at cross-sections 8, 15, and 16. The proposed SMRP would maintain the existing 200-foot setback from the river edge at the Quarry Site and would not disturb the easterly channel bank along the Quarry Site (nor any other portions of the channel).	While the excavation will take place more than 200 feet from the bank, recharge trenches will be located between the bank and the Quarry Site. Recharge operations should be considered in the bank stability analysis and appropriate mitigation should be implemented. Further, this impact should be re-assessed using the FEMA flood map and considering a 100-year flood that considers the impacts of climate variability. In addition, as recommended in county code, the 200-year event should also be considered.	Comment 6-95
71	DEIR	679	Impact 4.10-16	As described in Section 4.10.1.4, above, the Hydraulic Analysis (Appendix G-1) shows that the San Joaquin River floodplain does not enter into the Quarry Site and therefore the river would not overtop its banks and flow into the quarry.	This impact should be re-assessed using the FEMA floodplain map and climate variability that is expected over the life of the proposed project. In addition, as recommended in county code, the 200-year event should also be considered in this analysis.	Comment 6-96
72	DEIR	679	Impacts 4.10-15 and 16		How would the project proponent handle flood water from the SJR or LDC in the event of a big storm and localized flooding, including potential flooding of site equipment? Water that enters either site that would normally go to the river should be removed from the site promptly and without pollution from on-site hazardous materials.	Comment 6-97

#	Document	PDF pg	Section	Existing Text	Comment
73	DEIR	680	Impact 4.10-16	The analysis also concludes that the San Joaquin River floodplain does not enter into the Plant Site, and existing topography and berms along the north edge of the Plant Site prevent the Little Dry Creek floodplain from entering the Plant Site, with the exception of a small portion of the northwest corner of the Plant Site (as shown in Figure 4.10-1). This portion of the Plant Site is currently used as a stockpile area, and this use would continue during Phase 1 mining operations. Upon completion of Phase 1 mining, the stockpiles would be removed, and the area would be graded to drain to the reclaimed pond to the east, as it does under existing conditions, which would improve conditions relative to flood flows... Although minor changes to the drainage patterns of the portion of the Plant Site in the Little Dry Creek floodplain would occur under the proposed project, ultimately, the area would drain towards the reclaimed Plant Site mining excavation, similar to existing conditions, and flood flows would not be impeded or redirected.	The text states that flood flows would be directed toward the reclaimed pond to the east and then goes on to state that flood flows would not be impeded or redirected. These two statements contradict each other - please clarify and revise so that the text is consistent. Also, during flooding of LDC, the berm walls could be breached and/or silt leave the Plant Site, travel down to the delivery ditch, and enter the SJR. Aerial photography supports that this could occur and potentially has in the past. Existing conditions that create the risk of sediment entering the river should be remediated prior to any further improvements to the site.

Comment 6-98

#	Document	PDF pg	Section	Existing Text	Comment	
74	DEIR	681	Impact 4.10-17	The enlarged mining excavation could help contain and minimize downstream flooding, which would reduce the overall potential for release of pollutants, including sediment.	It appears the project proponent is proposing to capture river flows in the Quarry Site, which contains hazardous materials, as a flood reduction strategy. This approach would create unnecessary pollution risk and divert water supplies into the Quarry Site intended for downstream water users. All flood flows should be routed away from the Quarry Site.	Comment 6-99
75	DEIR	707		**Policy OS-A.14:** The County shall require the protection of floodplain lands and, where appropriate, acquire public easements for purposes of flood protection, public safety, wildlife preservation, groundwater recharge, access, and recreation. Consistent: The project would not result in any development within a floodplain. The northwest corner of the Plant Site is within the floodplain of Little Dry Creek. However, this portion of the site is and would continue to be used for stockpile storage. When the site is reclaimed, the stockpiles would be removed, and the site graded to drain to an existing pond.	While the proposed project might not create development within the floodplain, it does not protect it, as called for in the policy. There continue to be questions regarding the boundaries of the floodplain relative to the proposed project area that should be addressed before an impact determination is made. In addition, it states here that the Plant Site will divert flood waters into a pond where removal is not possible. This is not how a protected floodplain is intended to function and is not an acceptable long-term plan to address floodwaters on the Plant Site.	Comment 6-100

#	Document	PDF pg	Section	Existing Text	Comment	
76	DEIR	707		**Policy OS-A.5:** The County shall encourage, where economically, environmentally, and technically feasible, efforts aimed at directly or indirectly recharging the county's groundwater. Consistent: Project operations include recharge of the underlying aquifer through direct pumping of water pumped from the excavations into unlined ponds and recharge trenches.	It is Reclamation's understanding that pumping of water into unlined ponds and recharge trenches is being proposed to mitigate for some of the impacts of the proposed project on the local groundwater table and the SJR and would not creatie a net gain to groundwater supply. The response to this policy statement is misleading and should be removed; the proposed project would have a negative impact on local groundwater and surface water supply and water users.	Comment 6-101
77	DEIR	707	Policy OS-A.14	Consistent: The project would not result in any development within a floodplain….	The applicant appears to be claiming the policy is related only to developing within the floodplain. However, this policy also appears to be related to not constraining floodplains (for wildlife and public safety), promoting groundwater recharge, wildlife preservation, and recreation. The use of a portion of the LDC floodplain for stockpile/storage does not appear to be consistent with this policy. Reclamation recommends that the LDC floodplain be left in or restored to a natural condition and that stockpiling be limited to areas outside of the LDC 100-year floodplain. Reclamation notes that flow contributions from LDC help maintain flows and support water diversions downstream.	Comment 6-102

#	Document	PDF pg	Section	Existing Text	Comment	
78	DEIR	709		**Policy OS-A.24**	The project proponent's water quality analysis does not address the water quality of recharge waters, which show water quality exceedances. For instance, DEIR pdf page 656 states "Basin Plan limits for conductivity, iron, and manganese were exceeded, but Basin Plan limits would only apply to groundwater pumped from the Plant Site if the water was to be discharged directly to the San Joaquin River." It appears the project proponent is not intending to mitigate potetnial water quality impacts from pumped recharge water with known Basin Plan exceedances because it is not being discharged to a live stream. However, recharge water being placed in these shallow recharge structures has a strong potential to introduce pollutants and water quality constituents into the shallow groundwater table, which would degrade groundwater and impact the adjacent water bodies. This impact should be addressed before any determination is made regarding consistency with this policy.	Comment 6-103
79	DEIR	711	Goal OS-D, OS-D.4	To conserve the function and value...related riparian areas...	The DEIR states these goals are "not applicable" and "consistent", respectively. The delivery ditch at the Plant Site is directly connected to Little Dry Creek, which flows into the SJR. In reviewing aerial imagery, there are visible sediment depositions that appear to have originated from the Plant Site and been released into the delivery ditch. There is riparian vegetation along LCD and the SJR that could be impacted by this sediment. However, there is no discussion of this existing condition or potential impacts. Impact 4.4-4 only discusses dust control and blasting and does not address the other potential impacts. As requested for Impact 4.4-5, baseline conditions should be accurately described, and potential impacts disclosed. The determination for this goal should be reconsidered with this additional information included in the analysis.	Comment 6-104
80	DEIR	728-729	Policy Habitat 7,9, 16		The DEIR lacks sufficient detail for addressing long-term ecological restoration of the proposed project sites. No definition of open water habitat and no plan to remove aquatic vegetation is provided. What are the criteria for success and what is the monitoring plan? How will the project proponent ensure the plan does not impact the SJRRP? Please expand here.	Comment 6-105

#	Document	PDF pg	Section	Existing Text	Comment	
81	DEIR	926		List Method: A list of past, present, and reasonably foreseeable future projects producing related or cumulative impacts, including those projects outside the control of the agency.	The DEIR states that a List Method or Regional Growth Projections Method will be used and will be identified at the beginning of each section but does not actually appear to state the method in each section. Please state which approach was used for each resource analyzed.	Comment 6-106
82	DEIR	937		The proposed project would not affect water from Millerton Reservoir, Friant-Kern Canal, and Tule River; therefore, there would not be potential cumulative impacts of the proposed project and the Friant Ranch Specific Plan project on riparian communities, waters of the state, wetlands, or groundwater dependent ecosystems in the vicinity of the project sites.	Any increase in Reach 1 losses, such as those that would occur from operation of the proposed project, would reduce the amount of available water supply to the Friant Division water users and therefore, negatively impact the Friant-Kern Canal. This conclusion should be revised.	Comment 6-107
83	DEIR	946		Regarding cumulative impacts to surface water quality (Impacts 4.10-1, 4.10-2, and 4.10- 3), stormwater runoff is contained within the project sites by the existing berms, and the project would not impact surface water quality outside of the project sites.	The proposed project does have the potential to impact surface water quality of the SJR if recharge water that is not of a similar quality to SJR water is placed immediately adjacent to the SJR. This statement should be revised to disclose this potential impact and any related analyses should be revisited.	Comment 6-108

#	Document	PDF pg	Section	Existing Text	Comment	
84	DEIR	947		Furthermore, as described in Impacts 4.10-10 and 4.10-11, during both mining operations and after final reclamation, the estimated increase in groundwater consumption at the Plant Site and Quarry Site are several orders of magnitude smaller than the fluctuations in the water balance of the North Kings GSA area. For these reasons, the project's contribution to the significant cumulative impacts related to the depletion of groundwater and conflict/obstruction with the North Kings GSA Groundwater Sustainability Plan would be less than cumulatively considerable.	As stated on Page 5-1, "For purposes of this Draft EIR, the proposed project would be considered to have a significant cumulative effect if... the cumulative effects of other past, present, and reasonably foreseeable future projects without the proposed project are already significant and the project contributes measurably to the effect. The standards used herein to determine measurability are that either the impact must be noticeable or must exceed an established threshold of significance." The measure of significant cumulative effect used for this analysis is a noticeable impact or an impact that exceeds an established threshold of significance. As currently analyzed, the project proponent has indicated the impact is "less than cumulatively considerable," but has not analyzed the impact against the measures outlined in the document. Please analyze this impact to the standards required and amend the section accordingly.	Comment 6-109
85	DEIR	947		The proposed project and cumulative projects could have a significant impact on the hydrology of the San Joaquin River should the projects substantially drawdown groundwater and thereby result in a decrease of flows in the river (Impact 4.10-12).	The SJR already has significant cumulative impacts to its hydrology due to existing diversions, as demonstrated by the need for the SJRRP. Therefore, for the purposes of analyzing cumulative impacts to the hydrology of the SJR, cumulative impacts of this proposed project should be determined based on whether the project is cumulatively considerable, not on whether the impact itself is determined to be significant or if the project substantially draws down groundwater. Please revise this analysis.	Comment 6-110

#	Document	PDF pg	Section	Existing Text	Comment	
86	DEIR	947			The referenced Groundwater Sustainability Plan (GSP) provided by the North Kings Groundwater Sustainability Agency (GSA) to the State of California Department of Water Resources (DWR) included corrective actions identified by DWR as necessary for GSP approval. The corrective actions include an interconnected surface water (ISW) analysis to better understand the interaction between surface water flows and groundwater. As such, the North Kings GSA entered a Memorandum of Understanding with other GSAs, the SJRRP, Friant Water Authority, and the SJRRP Restoration Administrator to initiate a Technical Committee analyzing ISW. The project proponent should engage the North Kings GSA to ensure consistent understanding of ISW and water budget impacts.	Comment 6-111
87	DEIR	948		The Quarry Site is not located in a flood plain, and only a small portion of the northwest corner of the Plant Site (as shown in Figure 4.10-1, “Current and Regulatory Floodways and Floodplains,”) is located within the Little Dry Creek floodplain.	Please revise this language to reflect the FEMA floodplain map and assess the cumulative impact recognizing that the project proponent's alternate floodplain map does not represent the complete data set regarding flood risk for this project.	Comment 6-112
88	DEIR	956		The project’s contribution to the cumulative increase in groundwater use in Fresno County would be cumulatively considerable.	Please clarify that there have been significant cumulative impacts to groundwater in the region, as evidenced by the need for the North Kings GSA and GSP. Analyzing water availability during wet hydrology does not provide a complete picture; groundwater availability in times of drought is at a deficit. Over the course of the proposed project's 100-year life, pumping will undoubtedly take place during times of drought. Please provide a proposed mitigation plan to offset this cumulative impact, especially during times of drought.	Comment 6-113

#	Document	PDF pg	Section	Existing Text	Comment	
89	DEIR	957		As discussed in the preceding sections, the proposed project would not make cumulatively considerable contributions to any significant cumulative impacts except related to transportation. Impact 4.17-1 would remain a significant and unavoidable impact even with mitigation and would contribute significantly to cumulative transportation impacts in the region. See Section 5.3.17, above, for details.	This statement does not address the proposed project's impact to groundwater in times of drought or its impact to the SJR when analyzed for cumulative impact. Please revise to reflect these areas of significant cumulative impacts.	Comment 6-114
90	DEIR	1005	Alternative 4		Please add a risk analysis of bank stabilization and flood protection with and without an additional 100-foot setback. This appears to be a significant consideration with the 100-foot setback that should be considered in the analysis.	Comment 6-115
91	Appendix 1 of 2, Appendix 2 of 2	1798-3	Hydraulic Analysis	[Use of 100-year flow velocities]	The use of 100-year flow velocities, equating to a 71,000 cfs flow, is not adequate given the lifetime of the proposed project (i.e. 100 years). There is a 63% chance of a 100-year flood or larger during a 100-year project lifespan. Since the 100-year flow velocity estimates are close to the erosion threshold, higher flows could endanger the integrity of the natural berms and levees around the proposed project sites. Breaching of the proposed project sites by high flows could cause long-term impact to fisheries, the ability for Reclamation to provide water to Holding Contracts below the proposed project site, the ability of Reclamation to meet environmental flow requirements, and potentially the ability of Reclamation to deliver water to Mendota Pool for the Exchange Contract.	Comment 6-116
92	Appendix 1 of 2	49	3.4	"The San Joaquin River is located approx. 0.6 miles to the west of the Plant Site... In addition, the silt ponds, serve as a source of recharge to the groundwater.	This section describes in detail how water is being consumed, not returned to the river, which would be inconsistent with Holding Contract #15. Furthermore, this section describes that the project proponent is claiming their Holding Contract as evidence of a water right, which Reclamation does not support. Reclamation recommends revising this language.	Comment 6-117

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region, California Central Valley Office
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March 10, 2025

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Email correspondence only:
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Subject: Technical Assistance for the Draft Environmental Impact Report for the Rockfield Quarry Modification Project

Dear Mr. Randall,

The National Marine Fisheries Service (NMFS) is the federal agency responsible for managing, conserving, and protecting marine resources for inland, coastal, and offshore waters of the United States. We derive mandates from several statues, including the Federal Endangered Species Act (ESA) and the Magnuson-Stevens Fishery Conservation and Management Act[1] (MSA). The purpose of ESA is to conserve threatened and endangered species and their ecosystems, while the MSA aims to protect habitat for species important for commercial and recreational fisheries. NMFS's technical assistance in this letter pertains to the Draft Environmental Impact Report (EIR) for the Rockfield Quarry Modification Project (Project), near Fresno, California.

Comment 7-1

The Project location is approximately 0.5 miles east of the mainstem San Joaquin River, within an alluvial floodplain deposit. The proximity of the Project location to the San Joaquin River, in addition to the proposed mining depth (i.e., over 300 feet), should take into consideration how surface water and groundwater are hydraulically linked. There is no ESA-designated critical habitat in the San Joaquin River near the Project area, however the hydraulic linkage is critically important in creating and maintaining habitat for federally threatened California Central Valley (CCV) steelhead (*Oncorhynchus mykiss*), Central Valley (CV) spring-run Chinook salmon

Comment 7-2

[1] For detailed information on the MSA refer to: https://www.fisheries.noaa.gov/topic/laws-policies/magnuson-stevens-act

(*O. tshawytscha*), and the southern Distinct Population Segment (sDPS) of North American green sturgeon (*Acipenser medirostris*) listed under the ESA. The current analysis is inadequate to understand the full breadth of potential impacts the Project will have on the ESA- listed and MSA-managed species in the San Joaquin River. A more robust analysis considering future impacts under a fully implemented San Joaquin River Restoration Program (SJRRP) and expected future hydrologic conditions should be included in your Draft EIR.

Comment 7-2 Cont.

Comment 7-3

In addition, CV fall-run Chinook salmon are an important commercial and recreational sportfish under the MSA. Where groundwater aquifer supplements streamflow, the influx of cold, clean water is important for maintaining surface water temperature and flow volume. The mainstem San Joaquin River, up to Friant Dam, is designated Essential Fish Habitat (EFH) for federally managed Chinook salmon species within the Pacific Coast Salmon Fishery Management Plan[2], pursuant to the MSA. For the purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity", and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR 600.10).

Comment 7-4

The Project location is hydraulically linked to habitat in the San Joaquin River where ESA-listed CCV steelhead and sDPS green sturgeon, and MSA-managed CV fall-run Chinook salmon, have the potential to occur over the next 100 years during implementation of the Project. Additionally, CV spring-run Chinook salmon[3] currently spawn, rear, and migrate, in the San Joaquin River in the proximity of the Project location. This reintroduced population of CV spring-run Chinook salmon are part of the long-term reintroduction efforts by the San Joaquin River Restoration Program[4]. The SJRRP also includes volitional fish passage infrastructure projects that are expected to increase the presence and population of CCV steelhead, sDPS green sturgeon, and Chinook salmon (both fall-run and spring-run) in the hydraulically-linked Project area of the San Joaquin River.

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[2] For detailed information on the Pacific Coast Salmon Fishery Management Plan refer to: https://www.pcouncil.org/fishery-management-plan-and-amendments-3/

[3] NMFS has designated the CV spring-run Chinook salmon being reintroduced to the San Joaquin River as a non-essential experimental population (NEP) in accordance with Section 10(j) of the ESA (78 FR 79622, December 31, 2013). The boundaries of this NEP area include the San Joaquin River from Friant Dam downstream to its confluence with the Merced River.

[4] For more information refer to https://www.restoresjr.net/ and https://www.fisheries.noaa.gov/west-coast/habitat-conservation/san-joaquin-river-restoration

NMFS is available to coordinate with Fresno County on this Project to help minimize, avoid, or offset potential impacts to CCV steelhead, sDPS green sturgeon, and habitat for CV fall-run and spring-run Chinook salmon. If you have any questions regarding this letter, please contact Ms. Hilary Glenn at hilary.glenn@noaa.gov or (916) 200-8211.

Sincerely,

Jonathan Ambrose
San Joaquin River Basin Branch Supervisor
California Central Valley Office

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March 10, 2025

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Sent Electronically

RE: CEMEX Rockfield Quarry Rockfield Modification Project (EIR 7763) and Unclassified Conditional Use Permit Applications Nos. 3666 and 3667 – Draft Environmental Impact Report

Dear Mr. Randall,

I write in response to the Draft Environmental Impact Report regarding the CEMEX company's proposal to expand its operations on the San Joaquin River, which include plans to blast and drill a 600-foot pit to extract rock for the purpose of making gravel, northeast of the City of Fresno. Comment 8-1

The CEMEX proposal is unnecessary, unjustifiable, and unwanted by many concerned area residents, community members, and environmental protection advocates. At its core, the CEMEX plan would permanently disfigure and devastate a prized natural resource in Fresno County – the San Joaquin River and the long-standing goal to restore a 22-mile segment into a scenic parkway. Comment 8-2

There are a number of alarming aspects to CEMEX's plan: the company's request to extend its mining at this location for a stunning 100 years; the pit's size would be deeper than the height of the Washington Monument; the lack of clarity regarding mitigation measures for this project that involves dynamiting; and the probability of increased traffic congestion and its repercussions. And, the list goes on. Comment(s) 8-3, 8-4, 8-5, 8-6

However, I want to focus on two specific reasons that I find greatly disturbing and warranting the rejection of the CEMEX proposal.

First, the deep pit will be created by using dynamite to blast rock and crush it into gravel. This pit will be in close proximity to the river – so the potential for contamination and harm to the water, fish, and wildlife is extremely high. This risky situation poses a critical threat to efforts to restore the river and its habitat as well as to residential wells that could go dry because of a shrinking water table. Comment(s) 8-7 and 8-8

Second, the crux of this proposal comes down to the need for it. According to state records cited by a recent report in *Fresnoland*, the "Fresno metro area currently has nearly 200% more gravel than is needed for the next 50 years coming from local mines. The Kings River has roughly 2 billion tons of easily available surface gravel – enough for 500 years at Fresno's current 4 million-ton annual rate." Comment 8-9

In short, there simply is no need for this operation. The *Fresnoland* report described the river this way: "The San Joaquin River, one of California's most beleaguered waterways, has endured over a century of exploitation." Comment 8-10

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DR. JOAQUIN ARAMBULA
ASSEMBLYMEMBER, THIRTY-FIRST DISTRICT

DISTRICT OFFICE
HUGH BURNS STATE BUILDING
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(559) 445-5532
FAX (559) 445-6006

Comment 8-10 Cont.

The San Joaquin River deserves protection – not further destruction – to preserve and nurture a river that provides significant health, recreational, and environmental benefits to our community and the Central Valley region.

I appreciate your time and consideration. If you require additional information or clarification, please don't hesitate to contact my District Director Maria Lemus at my Fresno office at Maria.Lemus@asm.ca.gov or at (559) 445-5532.

Sincerely,

Dr. Joaquin Arambula
California Assemblymember, 31st District

Rick Borges
Tulare I.D.
Chairman of the Board

Kelley Hampton
Delano-Earlimart I.D.
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Bill De Groot
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854 N. Harvard Ave.
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friantwater.org

March 10, 2025

Sent Via Email Only

David Randall, Senior Planner
Fresno County Public Works and Planning Department, Development Services and Capitol Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721
DRandall@FresnoCountyCA.gov

Re: CEMEX Rockfield Quarry Modification Project Environmental Impact Report

Dear Mr. Randall:

The Friant Water Authority hereby submits the following comments on the subject Environmental Impact Report (EIR).

Background

The Friant Water Authority (FWA) is a public agency formed by its members under California law to operate and maintain the Friant-Kern Canal and to represent our members in federal or state policy, political, and operational decisions that could affect the water supply of the Central Valley Project's Friant Division. FWA also operates and maintains the Friant-Kern Canal on behalf of the U.S. Bureau of Reclamation. Comment 9-1

FWA is a party to the litigation entitled *NRDC et al. v. Kirk Rodgers et al*. In 1988, a coalition of environmental groups filed a lawsuit challenging the renewal of long-term water service contracts between the United States and California's Central Valley Project Friant Division contractors. After more than 18 years of litigation, the Settling Parties reached a Stipulation of Settlement Agreement (Settlement). Besides FWA, the Settling Parties include the U.S. Bureau of Reclamation (Reclamation), which operates and maintains Friant Dam, immediately upstream of the CEMEX Rockfield Quarry Modification Project. To implement the Settlement, Reclamation established the San Joaquin River Restoration Program (SJRRP) and invited the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the State of California's departments of Water Resources and Fish and Wildlife to join as implementing agencies. Comment 9-2

The Settlement provides for, among other things, the release of water from Friant Dam and Millerton Lake into the San Joaquin River to restore and maintain fish populations (including naturally reproducing and self-sustaining populations of

salmon and other fish) in good condition in the mainstem San Joaquin River downstream of Friant Dam to the confluence with the Merced River. The water released, called Restoration Flows, is protected from diversion pursuant to State Water Code Section 1707 and is over and above the water historically released to comply with the so-called Holding Contracts. The Holding Contracts are agreements between Reclamation and certain landowners downstream from Friant Dam under which water is released to maintain a 5 cubic feet per second (cfs) flow requirement past those landowners' property. The most downstream landowner is approximately 40 miles downstream of Friant Dam. Before the Settlement, sufficient water was released from Friant Dam to provide a flow of 5 cfs to that landowner. The San Joaquin River was dry beyond that point, except when flood control releases were required from Friant Dam.

Comment 9-2 Cont.

Comments

FWA has the following specific comments on the subject EIR:

Comment 9-3

Page 2.16: The text states: "*applicant has water rights to use river water for industrial purposes in connection with the processing of rock, sand, and gravel*." FWA is unaware of such a water right. The document should be revised to include documentation supporting the claim of water rights, including copies of reports of diversion that the Applicant has made to the State Water Resources Control Board. If the water for the applicant is diverted in accordance with Holding Contract No. 15, it is FWA's understanding that Reclamation does not consider Holding Contracts to confer a water right. Holding Contracts are merely a commitment by Reclamation to provide 5 cfs past the Applicant's property adjacent to the San Joaquin River.

Furthermore, Holding Contract No. 15 states the following:

- Article 12 ("*How the Owner May Divert Water*") states: "*The United Staes does not and will not…object to any reasonable beneficial use of the water of the River for irrigation and/or domestic purposes exclusively upon the said land…*"
- Article 28(a) states: "*…the United States agrees, notwithstanding any provision to the contrary in this contract contained, particularly Article 24 ["*Adverse Interests Conveyed or Reconveyed*"], that it will not object to the use by PACIFIC COAST AGGREGATES, INC., [sic] of the water of the San Joaquin River for industrial purposes in connection with the processing of rock, sand, and gravel, provided the water used is returned to the River free of pollution and/or contamination*."

Therefore, any water diverted under Holding Contract 15 must either be used for "for irrigation and/or domestic purposes" or returned to the San Joaquin River "free of pollution and/or contamination."

Page 2.16: The text states: "*Water is diverted from the river to the Plant Site via a ditch and the water then is used to wash the aggregate*." The document should state if the diversion is screened to prevent fish from entering the ditch.

Comment 9-4

Page 4.4-62 to -63: The text states: "*Fish species that occur in the San Joaquin River include largemouth bass, bluegill (Lepomis macrochirus), catfish, and common carp (Cyprinus carpio). Rainbow trout (Oncorhynchus mykiss) that are triploid (fish that is sterile) are planted for recreation. A Central Valley spring-run reintroduction effort for juvenile spring- and fall-run Chinook salmon (Oncorhynchus tshawytscha) is being undertaken on the San Joaquin River by the Bureau of Reclamation and others as part of the San Joaquin River Restoration Program. The river contains seasonal habitat for rearing and holding of juvenile spring- and fall-run Chinook salmon and are potential breeding habitat for spring- and fall-run Chinook salmon*." The San Joaquin River Restoration Program is undertaking a significant fishery restoration effort. While the description given is accurate, it is insufficient given the magnitude of the effort and the importance of the work. Suggest additional information be provided. The Applicant should review the information available on the San Joaquin River Restoration Program's website (https://www.restoresjr.net/), on the US Fish & Wildlife Service's website (https://www.fws.gov/project/san-joaquin-river-restoration-program), the National Marine Fisheries Service's website (https://www.fisheries.noaa.gov/west-coast/habitat-conservation/san-joaquin-river-restoration), and the California Department of Fish and Wildlife's website (https://wildlife.ca.gov/Regions/4/San-Joaquin-River). Comment 9-5

Page 4.10-7: The text states: "*During historic flow events, including the January 1997 flood event of approximately 60,300 cubic feet per second (cfs), the easterly bank along the Quarry Site did not experience significant erosion and the bank has never breached into the Quarry Site*." The Corps of Engineers estimated the January 1997 flood to have a 60-to-80-year recurrence interval in their "Sacramento and San Joaquin River Basins, California Post Flood Assessment" (https://babel.hathitrust.org/cgi/pt?id=uc1.31210025006170&seq=322 at Table 6-2, page 6-10). The Applicant should analyze the impact from up to a 200-year flood. Comment 9-6

Page 4.10-16: The text states: "*…during unforeseen events, may be required to release water into the San Joaquin River at rates that could exceed the river channel capacity (Fresno County 2018a)*." It should be noted that such releases from Friant Dam may be required during foreseen events as well as unforseen. Comment 9-7

Page 4.10-49: The text states: "*The water level data for well MW-2S, screened only in the alluvium, shows that the well does not contain water except during periods when the San Joaquin River stage is greater than 4 feet. A review of river stage data from January 2014 to February 2023 indicates that the San Joaquin River stage measurements exceeded 4 feet for approximately 13 percent of the January 2014 to February 2023 time period*." Once full implementation of the SJRRP is completed, there will be times when flows in the San Joaquin River will exceed 2,500 cfs for 2 weeks followed by 4,000 cfs for 2 weeks. The EIR should analyze San Joaquin River stages under these flows. The Restoration Flow hydrographs can be found in Exhibit B of the Settlement (https://www.restoresjr.net/?wpfb_dl=9). Comment 9-8

Page 4.10-56: The text states: "*…leakage from the canal flows, which flow year-round, are likely an important source of groundwater recharge to the areas in the vicinity of the Friant-Kern Canal, including the Quarry Site*." As noted above, FWA operates and maintains the Friant-Kern Canal. We Comment 9-9

are unaware of the occurrence of significant seepage from the Friant-Kern Canal in the vicinity of the Quarry Modification Project, and the Friant-Kern Canal is about 2 miles from the Quarry Site. The text references the North Kings GSA's 2022 Groundwater Sustainability Plan as a source of the information contained in this section. The specific page number should be provided, using the updated 2025 GSP (https://northkingsgsa.org/groundwater-sustainability-plan/). Comment 9-9 Cont.

Page 4.10-104: The text states: "*Additionally, diversion of up to 295 acre-feet per year from the San Joaquin River would cease, making that water available for groundwater recharge through the riverbed or for use in lieu of groundwater within the North Kings GSA management area*." If the diversion of San Joaquin River water is done under a Holding Contract, that water cannot be used outside of the Holding, so the water would NOT be available for use "in lieu of groundwater within the North Kings GSA management area" outside of the boundaries specified in the Holding Contract. Comment 9-10

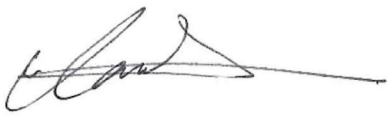
Page 4.11-36: Policy HS-C.12 discusses determination of the 200-year water surface elevations and states that "*new project development...shall not be allowed along the river until the risk of flooding at the site has been determined and appropriate flood risk reduction measures identified*." But the consistency analysis only addresses the 100-year flood. The consistency analysis should be redone. Comment 9-11

Page 4.11-37: Policy HS-C.14 states the County shall promote flood control measures that maintain natural conditions within the 200-year floodplain, but there is no mention of the 200-year floodplain in the consistency analysis. Again, the consistency analysis should be redone. Comment 9-12

Page 5-13: The text states: "*The proposed project would not affect water from Millerton Reservoir, Friant-Kern Canal, and Tule River; therefore, there would not be potential cumulative impacts of the proposed project and the Friant Ranch Specific Plan project on riparian communities, waters of the state, wetlands, or groundwater dependent ecosystems in the vicinity of the project sites*." The San Joaquin River is declared to be a "fully appropriated stream system" by the California State Water Resources Control Board. Any increase in water seepage from the San Joaquin River directly impacts the water supply of the water users of the Friant Division, which get water from the San Joaquin River, the Friant-Kern Canal, and from Millerton Reservoir. The text and impact analyses should be revised. Comment 9-13

On March 7, 2025, Reclamation also provided comments on the subject EIR, which FWA concurs with and are incorporated here by reference. Thank you for the opportunity to comment. Comment 9-14

Sincerely,



Ian Buck-Macleod
Friant Water Authority
Water Resources Manager

From:	Kassy Chauhan
To:	Mtunga, Tawanda
Cc:	Randall , David A.; Ramirez, Augustine
Subject:	CEMEX Rockfield Quarry Modification Project EIR - 7736 - Public Comment
Date:	Monday, March 10, 2025 9:26:35 AM
Attachments:	image001.wmz image003.png image004.png 2025-03-10 CEMEX DEIR Comment Letter - Final - NKGSA.pdf

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hi. Please find attached comments on the subject document from the NKGSA. Thanks for the opportunity to review and comment. Please do not hesitate to let me know if you have any questions on the comments provided.

Thanks,

NORTH KINGS GROUNDWATER
SUSTAINABILITY AGENCY

CONFIDENTIALITY NOTE

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Kassy

NORTH KINGS GROUNDWATER SUSTAINABILITY AGENCY

March 10, 2025

Mr. David Randall, Senior Planner
Fresno County Public Works and Planning Department
Division of Public Works and Planning
2220 Tulare St., 6th Floor
Fresno, CA 93721

Subject: CEMEX Rockfield Quarry Modification Project EIR – Project 7786 – Public Comment Letter

Dear Mr. Randall,

On behalf of the North Kings Groundwater Sustainability Agency (North Kings GSA), the following comments are provided in response to the draft environmental impact report (DEIR) for the CEMEX Rockfield Quarry Modification Project (Project). The Project, both the Plant Site and the Quarry Site, are located within the North Kings GSA as indicated in the DEIR. As such, the scope of the comments provided is limited to potential concerns for water quality, water quantity and ability to reach groundwater sustainability, recharge and potential impacts, and interconnected surface water from the San Joaquin River (SJR) and the groundwater. Specifically, the DEIR should be modified to address the following: Comment 10-1

1. The DEIR evaluates several alternatives including one alternative (Alternative 4) that reduces the mining depth and the setbacks from the SJR from current 200-foot setback by another 100-feet creating a 300-foot setback from the SJR. One of the current efforts being undertaken by the North Kings GSA along with Madera County GSA, United States Bureau of Reclamation (USBR), Friant Water Authority (FWA) and the McMullin Area GSA is an investigation related to interconnected surface water in Reaches 1 and 2 of the SJR. This evaluation and setting of management criteria is required by the Sustainable Groundwater Management Act of 2014 (SGMA) and is in its infancy. Data is being collected to evaluate the interconnectivity and it is unknown whether 300 feet is adequate to address interconnectivity between the SJR and the groundwater at the Quarry Site. The DEIR must consider an investigation that establishes the adequate setback distance needed to address interconnectivity between the SJR and the groundwater at the Quarry Site. Comment 10-2

   Additionally, there are several monitoring wells identified at both the Quarry Site and the Plant Site that provide valuable information. CEMEX should Comment 10-3

Member Agencies
Bakman Water Company
Biola Community Services District
City of Clovis
City of Fresno
City of Kerman
County of Fresno
Fresno Irrigation District
Fresno Metropolitan Flood Control District
Garfield Water District
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Kyle Moeller
Seat 7 – Members At Large
Karl Kienow
Garfield Water District

Executive Officer
Kassy D. Chauhan, P.E.

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North Kings GSA
c/o Fresno Irrigation District
2907 S. Maple Ave.
Fresno, CA 93725

Phone
559-233-7161

ensure the data is shared with Fresno County and the North Kings GSA to be able to monitor potential impacts from the operations and interconnectivity between the SJR and the groundwater in the Project area. Comment 10-3 Cont.

2. The DEIR discusses the overdraft conditions in the Kings Subbasin as presented in the original groundwater sustainability plan (GSP) submitted for the North Kings GSA. The California Department of Water Resources approved the GSP with corrective actions needing to be addressed prior to the resubmittal of the revised GSP and periodic evaluation in January 2025. As such, the North Kings GSA GSP has been revised to address the corrective actions. The base period used in the past, present and future water budgets has been updated to capture more recent years including the most recent drought periods of 2012 to 2016 and 2020 to 2022. The revised GSP and periodic evaluation are available on the North Kings GSA websites at www.northkingsgsa.org and the DEIR should be updated to reflect the most current information related to reaching sustainability in the North Kings GSA. Comment 10-4
3. The joint powers authority (JPA) agreement stipulates that each agency in the North Kings GSA is responsible for mitigating for their portion of the total overdraft within the North Kings GSA boundary. As such, Fresno County is responsible for mitigating for the overdraft conditions in the Fresno County white areas (those with no surface water access). The mitigation target for Fresno County across all the white areas is estimated to be between 1000 acre-feet and 3,000 acre-feet average annual. While the Project indicated it has minimal groundwater demand, an analysis of existing and future with project conditions should be completed. These two conditions should be presented side by side to allow for a straight-forward comparison. The analysis should include all sources of water including precipitation, surface water, groundwater, recharge for the current condition and compare that to the future conditions at various phases with the Project. While the total groundwater demand for the Project appears to be minimal according to the numbers cited in Section 4.10, the County and the North Kings GSA need assurances that the project will not result in additional overdraft in the North Kings GSA. Any use or loss of water above allowable amounts will need to be mitigated and a plan presented on how that will occur. Comment 10-5
4. The DEIR indicates that the Project relies on riparian water rights for industrial uses at the Plant Site and no surface water rights at the Quarry Site. The DEIR should better document the riparian rights at the Plant Site and address other sources of water for the Quarry Site to demonstrate there is no net demand on the groundwater aquifer to support the Project activities. Comment 10-6
5. The North Kings GSA has an obligation to address water quality concerns caused by increased pumping and groundwater level declines per SGMA. The DEIR, Section 4.10) addresses existing water quality conditions at the Plant Site and Quarry Sites. There are some constituents of concern as identified on Tables 4.10.5 and 4.10.6 which are in exceedance of existing primary and secondary drinking water standards. With the number of wells located near the Plant Site and Quarry Site, the DEIR must identify how future water Comment 10-7

contamination issues at these locations will be addressed due to the potential for the water stored in the on-site ponds migrating beyond the project site causing impacts to neighboring wells. Comment 10-7 Cont.

6. Upon Project Completion, the site will be used for habitat and other water recreation activities as there will be a massive hole (up to 600 feet deep) that will be allowed to fill with water. The water budget analysis requested above in Comment No. 4 must address the losses that will occur from evaporation and mitigation measures must be implemented. Comment 10-8

7. The North Kings GSA requests that monitor well data collected on the site be made available to the North Kings GSA, and a data sharing agreement be entered into to allow that to occur. North Kings GSA will request in the data sharing agreement that any monitor wells remain in place even after decommissioning of the Plant Site or Quarry SIte to allow for continued monitoring for water levels and water quality. Comment 10-9

Please do not hesitate to contact me should you have any questions regarding the comments at 559-233-7161, x. 7109 or by email at kchauhan@fresnoirrigation.com.

Sincerely,

Kassy D. Chauhan

Kassy D. Chauhan
Executive Director

Docusign Envelope ID: 2CB559FA-3141-42AB-A82F-E05A0C8D7AFD

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SAN JOAQUIN RIVER CONSERVANCY

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Kari Kyler Daniska
Executive Officer

PO BOX 28338
Fresno, California 93729
www.sjrc.ca.gov

March 10, 2025

Sent Via Email
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
David Randall Senior Planner
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Mr. Randall

SUBJECT: Cemex Rockfield Modification Project (Project)
Draft Environmental Impact Report (DEIR)

The San Joaquin River Conservancy (Conservancy) received a Notice of Availability of a Draft Environmental Impact Report (DEIR) from the County of Fresno Department of Public Works and Planning for the Cemex Rockfield Modification Project (Project) pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines[1].

We appreciate the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect the implementation of the Conservancy's mission and updated San Joaquin River Master Plan (Parkway Master Plan).

Comment 11-1

San Joaquin River Conservancy Background

The San Joaquin River Conservancy is an agency of the State of California created by the Legislature to create the San Joaquin River Parkway by: acquiring 5,900 acres from willing sellers for Parkway purposes; enhancing and restoring riparian, floodplain, and other habitats, and conserving natural and cultural resources on its lands; and developing and managing its lands for public recreational and educational uses compatible with resource protection. The Conservancy also assists other entities in conserving and improving their lands for the Parkway. The Conservancy works to facilitate the development of the Parkway, cultivate public support, and secure its future.

The Conservancy Governing Board adopted the Parkway Master Plan and certified its programmatic Environmental Impact Report in 1997 and updated the document in 2018. The updated Parkway Master Plan provides goals, objectives, and design standards for appropriate public recreational uses, trail corridors, habitat restoration, fishing and boating access, etc. on public Parkway lands. Goals, objectives, and policies consistent with the Parkway Master Plan have been adopted in the County of Fresno General Plan.

1 CEQA is codified in the California Public Resources Code in section 2100 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

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David Randall
County of Fresno Department of Public Works and Planning
March 10, 2025

Project Description Summary

As presented in the DEIR, the Project will continue and modify its current aggregate (rock, sand and gravel) mining and processing operations located on two properties (Plant Site and Quarry Site) between North Friant Road and the San Joaquin River, in Fresno County. The current mining and processing operations have been continuous at the two sites for 108 years.

Comment 11-2

The Project would be implemented in two stages:

Stage 1: continue current operations at both the Quarry Site and the Plant Site for up to 30 years. Upon completion of mining at the Plant Site, operations at the Plant Site would cease and the site would be reclaimed as 138.5 acres of open space, riparian, and open water wildlife habitat. At this time, operations at the Quarry Site would then be modified, upon approval of the Modification project permit, to include hard rock (granite) excavation (drilling and blasting).

Upon approval of the project, the combined annual sales of aggregate from both sites are estimated to increase from the 1.4 MT/year allowed under the current permits to 2.0 MT/year within approximately five years of project approval and up to 3.0 MT/year within approximately 10 years of project approval.

Stage 2: continue hard rock mining and processing operations only at the Quarry Site for approximately 70 more years. Upon completion of mining at the Quarry Site, operations at the Quarry Site would cease and the site would be reclaimed as 352.4 acres of open space, riparian, and open water wildlife habitat.

Stage 2 operations are estimated to have annual aggregate sales of 3.0 MT/year.

The total Project life of the combined Stages (1&2) is estimated to be up to 100 years.

Comments and Recommendations

As presented in the DEIR, the Project appears to be consistent with several of the goals and policies included within the Parkway Master Plan. For example, the Parkway Master Plan encourages recreational fishing at off-stream excavated ponds (from gravel mining) and specifically supports the development of a multi-use Parkway trail, secondary trails, and a trail system on Parkway properties for a connected recreational system and connect open spaces, provide loop routes and nature trails, provide river access, and secondary trails to link to adjacent bikeways. However, the Project proposes a new activity, hard rock (granite) excavation (drilling and blasting) within the Parkway that was never previously evaluated by the Parkway Master Plan. Therefore, as sand and gravel mining operations were the only mining activity evaluated, hard rock excavation may be an incompatible activity and conflict with existing or planned Parkway land uses near the Project.

Comment 11-3

In accordance with the goals and policies of the Parkway Master Plan, the Conservancy offers the comments and recommendations below to assist the County of Fresno in the appropriate application of Parkway policies and identification and/or mitigation of the Project's significant, or potentially significant, direct and indirect impacts within the San Joaquin River Parkway. Editorial comments or other suggestions may also be included to improve the accuracy and consistency of the DEIR.

Comment 11-4

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General Comments

The DEIR does not identify the State Lands Commission as a State Agency with jurisdiction over sovereign lands adjacent to the San Joaquin River or describe any current or potential lease for mining operations. Comment 11-5

Project Description

During the Conservancy's review of the submitted materials, it was noticed that the project description/operational statement and the project description within the DEIR contain conflicting information. Specifically, it was noted that the project description/operational statement identifies that Stage 1 will reclaim 122 acres of open space, riparian and open water wildlife habitat and Stage 2 would create approximately 349 acres of open space, riparian and open water wildlife habitat. However, in the project description of the DEIR, Stage 1 is identified as reclaiming 138.5 acres of open space, riparian, and open water wildlife habitat with Stage 2 creating 352.4 acres of open space, riparian, and open water wildlife habitat. Comment 11-6

In Section 2.4.2.2 Quarry Site Existing Conditions, under the Screening, Parking, Lighting and Fencing sub-section, it is mentioned that there is perimeter fencing surrounding the Quarry Site and does not mention fencing at the Conservancy owned property known as Beck Ranch. Presence or absence of fencing should be identified. Comment 11-7

In Section 2.5.2.2 Quarry Site Mine Plans, under the Screening, Parking, Lighting and Fencing sub-section, it is mentioned that the remainder of the north property line would be fenced with minimum four-foot high, ranch fencing consisting of metal T-posts and at least three strands of barbed wire. The Conservancy owns Beck Ranch, which is adjacent to the north property line and is managed as a conservation area. For fencing the boundary between the north property line and Beck Ranch, 5-strand barbed wire with a wildlife friendly, smooth top and bottom wire is preferred and recommended. Comment 11-8

In Section 2.5.8 Trail Easements, it is mentioned that the applicant is in discussions with the Conservancy's Executive Officer towards providing potential easements at the Plant Site and Quarry Site. This statement is misleading. It would be more appropriate to say that discussions are being reinitiated, as there has been no recent communication on proposed easements, until March 6, 2025, after the DEIR was released. Comment 11-9

4.1 Aesthetics and Visual Resources

The DEIR provides a substantial amount of information on impacts to aesthetics and visual resources; however, the DEIR does not adequately address the effects of the Project on adjacent, Conservancy owned properties. Therefore, it appears that the Project is inconsistent with the Parkway Master Plan goals and policies by omitting analysis for Conservancy owned properties and/or negatively impacting quality scenery, aesthetics, and viewsheds. Comment 11-10

In Section 4.1.1.4 Identification of Potentially Sensitive Viewpoints, under the Public Parks/Recreation Facilities sub-section, there is no mention of the Conservancy's owned property, known as Ball Ranch, which is adjacent to the Plant Site. Ball Ranch is open to the public 7-days a week for recreation and public access.

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Table 4.1-2, Summary of Potentially Sensitive Viewpoint Locations, does not include the Conservancy owned property, known as Beck Ranch, which is a viewpoint located adjacent to Lost Lake Regional Park, north/northwest of the Quarry Site. The table also provides inaccurate information on both Ball Ranch and Ledger Island, stating that they are not currently accessible to the public. Both Conservancy owned properties have been open to the public 7-days a week for recreation and public access. Comment 11-11

Table 4.1-3, U.S. Bureau of Land Management Visual Project Impact Ratings at Nearby Viewpoints, does not include the Conservancy owned property, known as Beck Ranch, which is a viewpoint located adjacent to Lost Lake Regional Park, north/northwest of the Quarry Site. Beck Ranch is also omitted in the following discussion and analysis. Comment 11-12

To minimize impacts to adjacent, Conservancy owned properties, the Conservancy recommends the following avoidance and minimization measures: Comment 11-13

- Revegetation, habitat enhancement, and amenity plantings should be implemented in such a way to screen views between the Project and surrounding land uses.

The Conservancy requests that the County of Fresno requires the applicant to implement the above recommendations, at a minimum, to minimize impacts to adjacent, Conservancy owned properties.

The Conservancy supports and encourages the conservation of habitat on private lands and recommends planting native vegetation on pond berms and controlling/removing non-native/invasive plant species from the Project as a feasible mitigation measure. Comment 11-14

The Conservancy supports and encourages minimizing lighting associated with Parkway development and encourages land use policies that minimize light impacts in the floodplain. Apart from safety, preclude lighting in the vicinity of the wildlife corridor or a natural reserve, to the greatest extent possible. Comment 11-15

4.3 Air Quality and 4.8 Greenhouse Gas Emissions
The DEIR provides a substantial amount of information on impacts to air quality; however, the DEIR does not adequately address the effects of the Project on adjacent Conservancy owned properties. Comment 11-16

As stated in the DEIR, the Project can provide a potential source of odor due to the hydrocarbons that are emitted from asphaltic concrete at elevated temperatures. The Conservancy owned properties known as Ball Ranch, Ledger Island and Beck Ranch were not considered as potential model receptor locations. Significant odor impact could occur at the adjacent, Conservancy owned properties and additional analysis should be undertaken to determine the extent of the impacts and appropriate mitigation measures. It appears that the Project is inconsistent with the Parkway Master Plan goals and policies by omitting analysis for Conservancy owned properties and/or negatively impacting regional air quality and greenhouse gas emissions.

The Conservancy supports and encourages the applicant to use alternative fueled construction equipment, minimize idling time, and required that equipment is properly maintained and tuned to prevent or minimize impacts to air quality and reduce greenhouse gas emissions. Comment 11-17

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4.4 Biological Resources

The Conservancy supports and encourages coordination with federal and State environmental regulatory and permitting agencies, including, but not limited to, the California Department of Fish and Wildlife, the California Department of Water Resources, and the Regional Water Quality Control Board to develop adequate avoidance and minimization measures to impacts on biological resources within the Projects area of impact.

Comment 11-18

To minimize impacts to adjacent, Conservancy owned properties, the Conservancy recommends implementation of the following buffers:

- Provide native vegetation for screening wildlife from human activity as necessary to accommodate less width for a buffer zone.
- Provide a 700-foot buffer between any Parkway improvement and sensitive habitat. (Sensitive habitat includes areas of special biological significance that provide habitat for locally unique biotic species/communities; that are adjacent to essential habitats of rare, endangered or threatened species; or any natural community vulnerable to environmental effects of projects).
- Avoid more intensive recreational or other uses within 1500 feet of rookeries where feasible.
- From the river wildlife corridor, encourage 100-foot buffers from agriculture/pasture; 150-foot buffers from rural residences (less than .05 unit per acre); 300-foot buffers from medium density rural residences (.05 units per acre to less than 1 unit per acre); 600-foot buffers from business/industry or urban density development (more than 1 unit per acre); and 700-foot buffers for any development from sensitive habitat.

To minimize impacts to adjacent, Conservancy owned properties, the Conservancy recommends the following avoidance and minimization measures:

- Avoid, minimize, and ensure pollution prevention and compliance in the use of herbicides.
- Incorporate construction best management practices for stormwater quality management, including erosion and sedimentation controls and spill prevention and control, into all applicable permits and as part of Project implementation.
- Properly maintain stormwater quality management post-construction controls.

Comment 11-19

The Conservancy requests that the County of Fresno requires the applicant to implement the above buffers and recommendations, at a minimum, to minimize impacts to adjacent, Conservancy owned properties.

4.5 Cultural and 4.18 Tribal Resources

The Conservancy supports and encourages the protection of cultural resources within the Project impact area and recommends additional tribal consultation or outreach prior to completion of the Final EIR based on the known and likely cultural and archaeological resources, including human remains.

Comment 11-20

The Conservancy recommends the following best management practices:

- If any cultural resources, such as structural features, unusual amounts of bone or shell, flaked or ground stone artifacts, historic-era artifacts, human remains, or architectural remains are encountered during any project construction activities, work shall be suspended immediately at

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the location of the find and within an appropriate radius of at least 50 feet. A qualified archaeologist shall conduct a field investigation of the specific site and recommend mitigation necessary for the protection or recovery of any cultural resource concluded by the archaeologist to represent a historical resource or unique archaeological resource.

Comment 11-20 Cont.

- If human remains are accidentally discovered during the proposed Project's construction activities, the requirements of California Health and Human Safety Code section 7050.5 must be followed. Potentially damaging excavation must halt in the area of the remains, with a minimum radius of 50 feet, and the local County Coroner must be notified. The Coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code section 7050.50(b).) If the Coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (Health and Safety Code section 7050 (c)). Pursuant to the provisions of the PRC section 5097.98, the NAHC shall identify a Most Likely Descendant (MLD). The MLD designated by the NAHC shall have at least 48 hours to inspect the site and propose treatment and disposition of the remains and any associated grave goods.

Comment 11-21

4.9 Hazards and Hazardous Materials and 4.20 Wildfire

To minimize the risk of loss of life, injury, and damage to property and natural resources resulting from fire hazards, the Conservancy recommends the following avoidance and minimization measures:

- Perform fire prevention measures including thinning or mowing, reducing ladder fuels, and weed abatement on property boundaries, access roads, and around parking areas and/or structures.
- Provide 600-foot buffers between business/industry or urban density development (more than 1 unit per acre) and Conservancy owned properties.

Comment 11-22

The Conservancy requests that the County of Fresno requires the applicant to implement the above recommendations, at a minimum, to minimize impacts to adjacent, Conservancy owned properties.

4.10 Hydrology and Water Quality

The Conservancy supports and encourages coordination with federal and State environmental regulatory and permitting agencies, including, but not limited to, the California Department of Fish and Wildlife, Department of Water Resources, and the Regional Water Quality Control Board to develop adequate avoidance and minimization measures to impacts on hydrology and water quality resources within the Projects area of impact.

Comment 11-23

To minimize impacts to adjacent, Conservancy owned properties, the Conservancy recommends the following avoidance and minimization measures:

- Provide erosion control and slope stabilization measures in any area where erosion could lead to sedimentation of a waterbody.
- Perform major vehicle maintenance, repair jobs, and equipment washing at appropriate off-site locations.
- Regularly maintain equipment to prevent fluid leaks. Any leaks shall be captured in containers until the equipment is moved or repaired.
- Prepare a spill prevention and response plan prior to construction.

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- Designate one area, well away from streams or storm drain inlets, for auto and equipment parking and routine vehicle and equipment maintenance;
- Clean-up spilled dry materials immediately and dispose appropriately.
- Use the minimum amount of water necessary for dust control.
- Clean-up liquid spills on paved or impermeable surfaces using “dry” cleanup methods (e.g. absorbent materials such as cat litter, and/or rags).
- Clean-up spills on dirt areas by removing and properly disposing of the contaminated soil.
- Store stockpiled materials, wastes, containers and dumpsters under a temporary roof or secured plastic sheeting where they cannot enter into or be washed by rainfall or runoff into waters of the U.S./State or aquatic habitat.
- Properly store containers of paints, chemicals, solvents, and other hazardous materials in garages or sheds with double containment during rainy periods.
- Avoid operating equipment in a live stream channel.
- Apply best management practices for treating, detaining, and percolating stormwater runoff, such as bioswales, bioretention areas and seasonal wetlands.

Comment 11-23 Cont.

The Conservancy requests that the County of Fresno requires the applicant to implement the above recommendations, at a minimum, to minimize impacts to adjacent, Conservancy owned properties.

4.11 Land Use and Planning

As previously stated, the Project proposes a new activity, hard rock (granite) excavation (drilling and blasting) within the Parkway that was never previously evaluated by the Parkway Master Plan. Therefore, as sand and gravel mining operations were the only mining activity evaluated, hard rock excavation may be an incompatible activity and conflict with existing or planned Parkway land uses near the Project.

Comment 11-24

To minimize land use impacts to adjacent, Conservancy owned properties, the Conservancy recommends implementation of the following buffers:

- To the extent feasible, acquire, enhance, restore and maintain a continuous riparian/wildlife corridor throughout public Parkway lands with a minimum width of 200 feet upland from the ordinary low-water mark and gaps of no greater than 200 feet or the minimum necessary to allow for infrastructure (e.g. roads, bridges, boat launches, etc.).
- Build trails or provide easements for bikeways and other recreation areas at least 300 feet from the boundary of active mining operations and processing plants, separate them by physical barriers, and avoid trail/bikeway crossings of active haul routes.
- Where feasible, provide a minimum width of 100 feet for the Parkway multi-use trail corridor.
- From the river wildlife corridor, encourage 100-foot buffers from agriculture/pasture; 150-foot buffers from rural residences (less than .05 unit per acre); 300-foot buffers from medium density rural residences (.05 units per acre to less than 1 unit per acre); 600-foot buffers from business/industry or urban density development (more than 1 unit per acre); and 700-foot buffers for any development from sensitive habitat.

The Conservancy requests that the County of Fresno requires the applicant to implement the above recommendations, at a minimum, to minimize impacts to adjacent, Conservancy owned properties.

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Additionally, please note that the property referenced in the DEIR that is south of the Quarry Site, known as Sumner Peck Ranch, is not owned by the Conservancy – it is owned by the San Joaquin River Parkway and Conservation Trust. Please see that attached Parkway Public and Non-Profit Property Ownership map for clarification on ownership within the Parkway.

Comment 11-25

4.12 Mineral Resources

The Parkway Master Plan directs the Conservancy to work with gravel mining companies to develop reclamation plans that enhance and compliment Parkway goals, while not conflicting with sand and gravel mining operations. The Project proposes a new activity, hard rock (granite) excavation (drilling and blasting) within the Parkway that was never previously evaluated by the Parkway Master Plan. Therefore, as sand and gravel mining operations were the only mining activity evaluated, hard rock excavation may be an incompatible activity and conflict with existing or planned Parkway land uses near the Project.

Comment 11-26

4.13 Noise

Project noise generated at the Quarry Site may exceed applicable noise standards. Based on distance to closest receptors, the analysis appears to have excluded the recreating public at adjacent, Conservancy owned properties (Ball Ranch, Ledger Island, Beck Ranch).

Comment 11-27

To minimize impacts to adjacent, Conservancy owned properties the Conservancy recommends the following avoidance and minimization measures:

- Minimize excessive noise generating activities to reduce disturbance to the nearest sensitive land uses, including the adjacent, Conservancy owned properties, which provide habitat for sensitive wildlife, recreation, and public access.
- Minimize excessive vibration generating activities to reduce disturbance to the nearest sensitive land uses, including the adjacent, Conservancy owned properties, which provide habitat for sensitive wildlife, recreation, and public access.

The Conservancy requests that the County of Fresno requires the applicant to implement the above recommendations, at a minimum, to minimize impacts to adjacent, Conservancy owned properties.

4.16 Recreation and 4.17 Transportation

The Project is consistent with the Parkway Master Plan goals and policies by encouraging low-intensity use and habitat conservation and connections to other regional recreational trails, open spaces, and land uses; trail systems that enhance non-motorized commuting and transportation. However, these sections should be revised to include current information and analysis on both Ball Ranch and Ledger Island, which are currently open 7-days a week for recreation and public access.

Comment 11-28

To minimize impacts to adjacent, Conservancy owned properties, the Conservancy recommends the following avoidance and minimization measures:

Comment 11-29

- Improve safety and reduce pedestrian and bicycle traffic between Old Friant Road to Lost Lake campground by assisting the Conservancy in creating the Lewis S. Eaton Trail expansion segment and/or rehabilitation of Ledger Island Bridge.

The Conservancy requests that the County of Fresno requires the applicant to implement the above

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recommendations, at a minimum, to minimize impacts to adjacent, Conservancy owned properties.

Comment 11-29 Cont.

The Conservancy supports and encourages continued discussions between the applicant and the Conservancy's Executive Officer, towards providing potential easements at the Plant Site and Quarry Site, which will link public Parkway lands and provide a continuous, multi-use trail. For consistency with the Parkway Master Plan, were feasible, a minimum 100ft multi-use Parkway trail corridor is preferred.

Comment 11-30

Alternatives

The Conservancy supports and encourages an evaluation of a range of reasonable Project Alternatives prior to selecting a preferred Project Alternative. The current mining and processing operations along the San Joaquin River have been limited to sand and gravel mining excavations, and have been continuous at the two sites for 108 years. The Project proposes a new activity, hard rock (granite) excavation (drilling and blasting) within the Parkway that was never previously evaluated by the Parkway Master Plan. Therefore, as sand and gravel mining operations were the only mining activity evaluated, hard rock excavation may be an incompatible activity and conflict with existing or planned Parkway recreation near the Project.

Comment 11-31

The DEIR considers several Project Alternatives, all of which include hard rock excavation except for the No Project Alternative. The Conservancy recommends that additional alternatives that provide for sand and gravel mining operations, consistent with the Parkway Master Plan, be evaluated and considered.

Section 6.3.1 lists ten project objectives. The Conservancy concurs with the project objectives within its purview, specifically:

Comment 11-32

8. Maintain consistency with the San Joaquin River Parkway Master Plan.
9. Reclaim both sites to wildlife habitat in a manner similar to the reclaimed mine sites that make up the majority of the San Joaquin River Parkway properties.
10. Provide potential Parkway trail easements.

In addition to the objectives listed in this Section, the Conservancy would also support adding "maintaining consistency with the County of Fresno General Plan" as part of the 8th objective or as a standalone project objective.

Comment 11-33

Conclusion

The Conservancy appreciates the opportunity to comment on the DEIR for the Project and recommends that the County of Fresno Department of Public Works and Planning address the Conservancy's comments and concerns in the Final EIR.

Comment 11-34

Due to the issues presented in this letter, the Conservancy concludes that the DEIR does not adequately identify or mitigate the Project's impacts on environmental resources and that the Project may not be consistent with the Parkway Master Plan. The Conservancy recommends that the Draft Environmental Document discuss additional potential safe, public access opportunities within the San Joaquin River Parkway to accommodate the reasonable and foreseeable impacts to adjacent open space areas, intended for recreation and public access. Increasing safe, public access to the Parkway will also meet policies and objectives that are set forth in the Parkway Master Plan and Open Space and Recreation Element of the City of Fresno General Plan.

Comment 11-35

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The Conservancy also requests to be consulted during the development any reclamation and revegetation plans to ensure that the plans enhance and compliment Parkway goals.

Comment 11-36

Pursuant to Public Resources Code sections 21092 and 21092.2, the Conservancy requests written notification of proposed actions and pending decisions regarding the Project. Written notifications shall be directed to:

San Joaquin River Conservancy
Kari Kyler Daniska, Executive Officer
PO Box 28338
Fresno, CA 93729

The Conservancy requests an opportunity to review and comment on any response that the County of Fresno has to our comments and to receive notification of any forthcoming hearing date(s) for the Project.

If you have any questions regarding the comments provided in this letter or wish to schedule a meeting, please contact me at (559) 287-2650 or by email at kari.daniska@sjrc.ca.gov.

Sincerely,

Kari Kyler Daniska
Executive Officer

ec: Governor's Office of Planning and Research, State Clearinghouse, Sacramento
state.clearinghouse@opr.ca.gov

Tucker Ellis | LLP

2211 Michelson Drive, Suite 1100 | Irvine, CA 92612 | TEL 949.622.2600

March 10, 2025 | douglas.hedenkamp@tuckerellis.com

VIA EMAIL

Mr. David Randall
Senior Planner
DRandall@FresnoCountyCA.gov
Fresno County Public Works and Planning Department
Development Services and Capitol Project Division
2220 Tulare St., 6th Floor
Fresno, California 93721

Re: Draft Environmental Impact Report SCH #2020060123, EIR No. 7763 (Draft EIR) For the Proposed Unclassified Conditional Use Permit Application Nos. 3666 and 3667, CEMEX Rockfield Quarry Project

Mr. Randall:

Comment 12-1

I represent the City of Fresno, and I write to submit the following comments on the Draft EIR for the CEMEX Rockfield Quarry Project (the "Draft EIR"). As set forth below, the City has identified several procedural and substantive deficiencies that preclude certification of the Draft EIR in its present form.

Chief among the substantive deficiencies is: (1) the Draft EIR's failure to consider the physical impacts of increased hauling by heavy trucks over North Friant Road by shifting truck traffic from the other aggregate mines listed on page 4.17-20 of the EIR to the CEMEX Rockfield Quarry Site and Plant Site (collectively, the "Project"), (2) failure to consider the cumulative impacts of the Project and these other aggregate mines in the cumulative impacts section, despite using these other mines to effectively erase the transportation impacts from the Project, and despite noting that, taken together, these projects will result in an increase of over 3,000,000 annual VMTs by Stage 2 of the Project (3) failure to discuss impacts to water quality, such as the potential alteration to groundwater flow as a result of continuous dewatering during mining operations below the existing groundwater level, mobilization of naturally occurring constiutents, such as arsenic, iron, lead, and manganese into the ground water (these hydrology and water quality impacts and improved mitigation measures to address them are discussed in more detail in the letter dated March 3, 2025 from the City of Fresno Department of Public Utilities to David Randall, Fresno County Public Works and Planning Department, a copy of which is attached as Exhibit 1 hereto).

Chief among the procedural deficiencies is the fact that the Project described in the Draft EIR includes portions of APNs 300-070-43ST, 48ST, and 50ST, which are not included in the applications for Conditional Use Permits 3666 and 3667, and were not listed in the Notice of Preparation ("NOP"), Notice of Completion ("NOC") or Notice of Availability ("NOA").

These and other deficiencies are discussed below in the order in which they appear.

1. Project Application

Comment 12-2

The land use application for Conditional Use Permit 3666, which applies to the Plant Site, is incomplete and does not meet the requirements of the Fresno County Zoning Code 838.5.060, because it contains no reference to the land owned by the California Department of Fish and Wildlife (the "CDFW") referred to on page 2-2 of the EIR's Project Description as portions of APNs 300-070-43ST, 48ST, and 50ST (the "CDFW Property"). If that land is to be included in the Project, it must be listed in the Conditional Use Permit application, and an Authorization of Agent to Act on Behalf of Property Owner must be filed with Fresno County (the "County"). Accordingly, the application is incomplete based on the Draft EIR's Project Description.

2. Notice of Preparation

Comment 12-3

The NOP for the EIR was dated June 3, 2020 and posted on June 5, 2020 as SCH No. 2020060123. That NOP is not valid for the EIR, because the project description included in the NOP lists the Plant Site as "Assessor Parcel Numbers (APNs) 300-070-56S, 57S, 58S, 59S, & 60S," and does not identify the CDFW Property as part of the Plant Site, unlike the Project Description in the EIR. (*Compare* NOP, Attachment A at p. 1, *with* EIR at p. 2-2.)

The Plant Site Aerial included in the NOP also omits the CDFW Property, and is inconsistent with the Aerial depicted in the EIR. (*Compare* NOP, Figure 2 *with* EIR, Figures 2-1 and 2-6.) Project Description/Operational Statement, Appendix B-2, states on page 14 that the CDFW Property is already currently being utilized as part of the Plant Site for mining operations, so this state-owned land should have been identified in the NOP.

This is a significant omission because the NOP was sent to the State Clearinghouse, pursuant to the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000-15387) for mandatory notice to the following reviewing agencies:

> California Air Resources Board (ARB), California Department of Conservation (DOC), California Department of Parks and Recreation, California Department of Resources Recycling and Recovery, California Department of Transportation, District 6 (DOT), California Department of Water Resources (DWR), California Governor's Office of Emergency Services (OES), California Natural Resources Agency, California Regional Water Quality Control Board, Central Valley Fresno Region 5 (RWQCB), California San Joaquin River Conservancy (SJRC), California State Lands Commission (SLC), Central Valley Flood Protection Board, Delta Stewardship Council, Office of Historic Preservation, State Water Resources Control Board, Division of Water Quality, California Native American Heritage Commission (NAHC), California Department of Fish and Wildlife, Central Region 4 (CDFW)

When the NOP was distributed to the reviewing agencies, those agencies, and CDFW in particular, should have been provided notice that CDFW property was being considered as part of the Project in the EIR.

Comment 12-4

The project description in the NOP also fails to adequately describe the true expansive nature of the Project, which it merely describes as allowing "the Rockfield Quarry a continuation and modification of its current aggregate (rock, sand, and gravel) mining and processing operations." (NOP, Attachment A at p. 1.) The project description does not adequately identify as significant new land uses activities such as significantly increasing the mining depth to 600 feet below grade that requires hard rock blasting adjacent to the San Joaquin River, public parks, camping sites, adding a material recycling of concrete and asphalt concrete, adding on-site sales of materials to the public, resuming aggregate mining at the Plant Site and adding a large hot-mix asphalt plant. The Project results in reduced setbacks and buffers and other project features that were previously required by the Previous CUPs.

3. Notice of Completion

Comment 12-5

The Notice of Completion dated July 6, 2020, (NOC) is not valid for the proposed Draft EIR. As with the NOP, filed one month earlier, the NOC was sent to the same agencies with the same incorrect project location, incorrect project description and including Figure 1 and 2 that do not show the CDFW Property that is included in the Draft EIR.

Only two letters were received by the State Clearinghouse on the NOP, California Department of Fish and Wildlife (CDFW) and Native American Heritage Commission (NAHC). CDFW submitted a letter dated July 6, 2020, that states the CDFW is submitting comments as a Responsible Agency, a permitting agency. However, since the Draft EIR also includes the CDFW Property, it should have been given notice that it is actually an owner of part of the Project, in which case its comments could have addressed more than its interest merely as a permitting agency.

4. Notice of Availability

Comment 12-6

The "Reissued Notice of Availability of a Draft Environmental Impact Report (EIR) for the proposed modification to the existing CEMEX Rockfield Quarry (EIR No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667)" (the "NOA") for the Draft EIR is posted on the County of Fresno website.

NOA's are typically posted at the Project Site, mailed to adjacent landowners, interested parties and posted at the County of Fresno administrative offices. Public involvement is one of the fundamental objectives of CEQA. Thus, adequate notification to the public of the availability of a Draft EIR is important in achieving this objective (CEQA Guideline §15201, Public Resources Code §21083 and 21087).

As with the NOP and NOC, the NOA merely describes the proposed Project as a "continuation and modification of its current aggregate (rock, sand and gravel) mining and processing operations," and fails to describe the vastly expanded operations that would be allowed under the Project. Like the NOP, the NOA omits the APN numbers for the CDFW Property.

The County of Fresno has failed to comply with the requirements of CEQA and State Law with incorrect and misleading public notices. The proposed Project needs to be correctly noticed and recirculated in order for State and Federal agencies, interested parties and the general public to determine their interest in the proposed Project.

Comment 12-6 Cont.

5. Draft Environmental Impact Report No. 7763 SCH# 2020060123

Comment 12-7

Chapter 1, Introduction and **Chapter 2**, Executive Summary need to be revised to reflect the significant revisions to Draft EIR.

a. Chapter 2: Project Description

The Draft EIR project description is insufficient and inaccurate in describing the proposed Project and does not comply with CEQA Guidelines and CEQA regulations. The Draft EIR project description is inconsistent with the Project Description/Operational Statement (Appendix B-2) that is part of the Surface Mining Reclamation Plan (Appendix B-1). The Draft EIR needs to be revised and recirculated.

i. <u>Project Location</u>

Comment 12-8

CEQA §15124, Project Description, lists the required information needed to evaluate and review the environmental impacts of the proposed Project. CEQA §15124(a) states:

> The precise location and boundaries of the proposed project shall be shown on a detailed map, preferably topographic. The location of the project shall also appear on a regional map.

The Draft EIR fails to comply with CEQA §15124(a) because the Project Location is both internally inconsistent within the Draft EIR, and inconsistent with the applicable Project CUP applications, which do not include the CDFW Property.

Within the Draft EIR, Figure 1-1 (Regional Location) and Figure 1-2 (Site Location) do not include the whole of the action which has the potential for resulting in either direct physical change in the environment or the reasonably foreseeable indirect physical change in the environment (CEQA Guidelines §15379(a); Public Resources Code §21065). Figures 1-1 and 1-2 do not appear to include the CDFW Property (APNs 300-070-43ST, 48ST and 50ST).

Draft EIR section 2.2.1, Project Location, states that the "12.9 acres owned by the [sic] California Department of Fish and Wildlife" is included in the 138.5-acre Plant Site and is currently used by the Applicant for current mining operations. The Draft EIR states:

> This Draft EIR assumes that CDFW will permit CDFW to continue to be used for mining and processing operations under the proposed project. Therefore, this 12.9-acre area is included in the 138.5-acre Plant Site.

However, the Draft EIR depicts the location of the Project, particularly the land owned by the State of California, inconsistently or not at all in the Draft EIR and therefore, does not disclose and analyze the significant environmental impacts of the whole project.

Comment 12-8 Cont.

Moreover, Conditional Use Permit 3577-A, to extend operational time limit from July 28, 2023 to July 28, 2027 does not include the land identified as "portions of APNs 300-070-43ST, 48ST and 50ST." Exhibit 2 of CUP 3755, Location Map, depicts the Plant Site as located on APNs 300-070-56S, 57S, 58S, 59S and 60S and consists of approximately 122 acres. APNs 300-070-56S, 57S, 58S, 59S and 60S total to 121.94 acres.

ii. Plant Site Aggregate Mining

Comment 12-9

The Project Description/Operational Statement (Appendix B-2) state on page 2 that "At the Plant Site, mining of the alluvial deposit will resume…." Therefore, aggregate mining that occurred in the past cannot be considered a part of the baseline conditions and needs to be treated as a new and unapproved land use pursuant to Fresno County Zoning Code Section 868.6.020, Expiration. Section 868.6.020A.1.c. states:

> If there is a cessation in the occupancy or use of land or structure(s) authorized by the permit or approval for a period in excess of two years, the permit or approval shall expire and be deemed void.

Aggregate mining is a use of land, such as the concrete plant or asphalt plant. If there is cessation of a particular approved land use in a conditional use permit for more than two years, the land use permit expires. The Draft EIR needs to be revised and recirculated to eliminate previous aggregate mining environmental impacts on the Plant Site from the baseline as existing conditions.

iii. Section 2.4.8 Current Operating Entitlements and Vested Rights.

Comment 12-10

The Project Description fails to adequately describe the current operating entitlements and vested rights, because it fails to describe the approved Site Plans and Rehabilitation Plans that were imposed as conditions on the existing CUPs. This leads to omitted and misleading information regarding the restrictions on the current site operations.

For example, in Table 2-1, Rockfield Modification Project Characteristics, the Draft EIR incorrectly states there is no maximum mining depth under the existing CUPs for the Plant and Quarry Sites. To the contrary, Condition No. 21 to CUP 2032 for the Quarry Site required the submission and approval of a Site Plan Review, which would have established the maximum depth of excavation, most likely at 45'. The parameters of the approved Site Plan Review, which are a condition of approval, should be disclosed. The Staff Report for CUP 2032 states that "The applicant estimates groundwater depth to be 20 feet and is proposing to excavate to a depth of 45 feet." (Staff Report, § C; *see also* City of Fresno Department of Public Utilities, Exhibit 1 hereto, for further commentary on hydrology and the impacts of deeper mining.) The Mining Plan attached to the Staff Report shows the "Maximum Excavation Depth" to be 45'.

Similar Site Plan Review requirements are set forth in CUP 367, though there is no indication of maximum depth in the CUP itself. (CUP 367, Area A Condition No. 24, Area B Condition No. 10.) Nevertheless, since mining stopped at 32 feet bgs (Draft EIR 2-29), it seems likely that a similar limit is present in the current Site Plan. Since these Site Plans are part of the express conditions on the existing CUPs, they should be disclosed in the Draft EIR.

Comment 12-10 Cont.

Similarly, both CUPs required the submission and approval of rehabilitation plans. (CUP 2032, Condition 13; CUP 367, Area A Condition 18, Area B Condition 11.) These plans may include requirements that are inconsistent with the depths proposed for the Project in the Draft EIR. Other requirements in the current rehabilitation plans may be inconsistent with the Project, thereby leading to other potential impacts from the Project. Accordingly, the terms of the existing rehabilitation plans should be disclosed in section 2.4.8.

Comment 12-11

In addition, section 2.4.8 states that the Operations at the Rockfield Quarry are currently governed by and vested under CUPs 367, 2032, 2209, 3063, and 3093. However, this is only partially true. As disclosed on page 2-8, there are currently no mining operations on the Plant Site. Accordingly, there is no longer any vested right to "continue" mining on the Plant Site.

Comment 12-12

Moreover, vested rights under SMARA are limited to mining of areas that were "'clearly intended'" to be excavated—as measured by objective manifestations, not subjective intent" when the vested rights were first triggered. (*Calvert v. County of Yuba* (2006) 145 Cal.App.4th 613, 625.) Accordingly, the vested rights do not cover any expansion of the area allowed to be mined. The area intended to be mined at the time of the CUPs is delineated on the Site Plans that were required to be approved before mining commenced. Accordingly, once again, the bounds of mining disclosed in the Site Plans must be disclosed in the Project Description.

iv. Stockpiling

Comment 12-13

Table 2-1, Rockfield Modification Project Characteristics, indicates that the Project will mine and process 3.3 MT of aggregate per year, but sell 3.0 MT per year. It appears the excess 0.3 MT per year of waste/fines will be stockpiled until the sites are reclaimed at the end of mining. The Draft EIR needs to identify the amount of sand/fines and mine waste that is existing on site and stockpiled in berms to understand the impact of adding additional sand/fines and mine waste.

In Appendix B-1, page 57, Paragraph 4.4.23 states the Plant Site will use the fines, tailings and other mining waste to reclaim the bottom 20 feet of the excavation. The Quarry Site will deposit the fines, tailing and mining waste in the bottom of the excavation. The Plant Site will not be reclaimed for 30 years, and the Quarry Site will not be reclaimed for 100. This will amount to 30 MT stockpiled until reclamation or 551 acres of sand and mine waste at 25 feet in height. The Draft EIR needs to detail how the waste/fines will be stockpiled, the amount, maximum height and duration of stockpiling on each site before final reclamation, identify the significant environmental impacts associated with large numerous stockpiles and provide meaningful mitigation. Stockpiling mitigation should include:

- Limiting stockpiles height to 25 feet to prevent visibility from the surrounding properties and public roads

- Covering the sand and mine waste with impermeable material to prevent blowing sand and dust

- Limiting the amount of stockpiled material to 1MT at any one time (1MT at 25 feet in height results in 18.36 acres of stockpiled material) The Project is required to export from the Project Site any material over 1 MT.

Comment 12-13 Cont.

v. Project Life

Comment 12-14

Table 2-1 indicates the proposed project life of 30 years for the Plant Site and 100 years for the Quarry Site. As stated above, surface mining by its very nature is a finite and temporary land use. State and local regulations require a reclamation plan as part of the permit. The Draft EIR uses models to predict future conditions under which the Project will operate to identify the significant environmental conditions and mitigation of the Project's environmental impacts. No analysis provided in the Draft EIR can model conditions or determine the Project's environmental impact on the area and region 30 years out, let alone 100 years in the future. The Draft EIR will become obsolete in identifying significant environmental impacts and mitigation for those impacts many years before the end of the Project Life. The Project Life should be reduced to the lowest modeling limitations presented in the Draft EIR.

vi. Figures 2-1 And 2-2 Aerials

Comment 12-15

Figure 2-1 incorrectly shows the "CUP Boundary" as including the CDFW Property. As noted above, the CUP applications do not include the CDFW Property. Figure 2-1 should be corrected to show the actual CUP boundary. Figure 2-2 is not legible to determine the "Existing CUP Boundary." Figure 2-2 needs to be corrected to clearly show the existing and proposed project boundary.

vii. Existing Setbacks

Comment 12-16

The existing setbacks stated on Page 2-15 are not consistent with the existing CUPs and approved project features and need to be corrected to provide accurate information to determine the significant environmental impacts of the Project as detailed below. The existing CUPs are described as and have the following conditions of approval concerning what conditions of approval and project design features apply:

> Fresno County Resolution No. 11848 (CUP 3093 and 3094) Condition 1 states: "All conditions of Conditional Use Permits Nos. 367,2032, 2235, 2241 3063 and 3064 shall remain in full force and effect except as modified by the condition below."

Comment 12-16 Cont.

> Fresno County Resolution 11776 (CUP 3063 and 3064) Condition 1 states: "All conditions of Conditional Use Permits Nos. 367,2032, 2235, 2241 shall remain in full force and effect except as modified by the condition below."

On Page 2-16 the Draft EIR states: "1) No stockpiled soil or materials placed closer than 25 feet from any property boundary except visual/sound berms." This is an incomplete description of the intent of the previous approved CUPs. Condition 3 of CUP 367 for the Plant Site states:

> Except for the main sand pile, the height of the material stockpiles shall not exceed 25 feet unless the Permittee is able to satisfy County that it will plant landscaping which will, within five (5) years of planting, effectively screen such stockpiles from view from Friant Road.

Comment 12-17

On page 2-18 of the Draft EIR states: the setback for the Quarry Site is a 200-foot mining setback from the river edge. However, Condition No.15 of CUP 2032 expands that and states:

> All excavation operations, including stockpiling, shall be set back a minimum of 200 feet from the existing San Joaquin River Channel. Riparian vegetation shall not be disturbed.

The setback from San Joaquin River is a project feature of CUP 2032 and is more precisely identified in the Mining Plan cross section attached to the CUP (a copy of which is attached hereto as Exhibit 3), which identifies the approved plan's setback from the San Joaquin River as:

> 200' Setback from existing stream channel or 20' setback from the reclamation board's existing designated floodway, whichever is further from the river bank.

Comment 12-18

Figure 4.10-1 depicts the current and regulatory floodways and floodplains for the Project Sites. However, the Plant Site does not include the Project's area owned by the State of California. The Draft EIR should include a map showing the setback line as required by the Previous CUPs in order to analyze the impact of the proposed Project to the existing setback requirements.

Comment 12-19

On page 2-18 the Draft EIR states: "7) no stockpile soil or material will be placed closer than 25 feet from any property boundary except visual/sound berms." This statement is not accurate and needs to be corrected. Condition No. 3 of CUP 2032 for the Quarry Site states:

> Stockpiling of materials shall not be allowed within 200 feet of the south property line, nor shall an excavation be allowed within a 260-foot radius of the front entry of the residences on the adjoining property to the south.

Also, Condition No. 12 of CUP 367 for the Quarry Site states:

> Stockpiling of material shall not be allowed within 200 feet of Friant Road or that portion of the north property line adjoining Lost Lake Park unless Permittee

screens any such closer stockpiling with approved landscaping so that it is not visible from Friant Road and the north property line of Lost Lake Park.

Comment 12-19 Cont.

viii. General Plan Land Use Designations

Comment 12-20

On page 2-28 the Draft EIR implies there has been continuous recovery of mineral resources at the "combined" project sites for more than 100 years. This is not a correct description of the recovery of mineral resources at the Plant Site. The Plant Site is subject to a separate conditional use permit (CUP 3666). The Project Description/Operational Statement (Appendix B-2) states that aggregate mining has stopped on the Plant Site and therefore has not been continuous. Pursuant to Fresno County Zoning Code Section 868.6.020, Expiration, the mining of aggregate (land use) that is subject to a conditional use permit at the Plant Site has expired. Therefore, it is considered a new land use at the Plant Site and is not included in the Draft EIR baseline to determine Project's significant environmental impacts.

The Draft EIR States the uses allowed in the agriculture designation include special agricultural uses and agriculture-related activities, including value-added processing facilities listed in Table LU-1. General Plan Table LU-1, Agriculture/Resource states:

Comment 12-21

> This designation provides for the production of crops and livestock, and for location of necessary agriculture commercial centers, agricultural processing facilities, and certain nonagricultural activities.

Although surface mining is allowed in Agricultural designated land, it is not an agricultural use. The Draft EIR implies that any process located on the Project Site is a "Value-Added Agricultural Use (Processing Facility). However, the Fresno County General Plan, Appendix A, Glossary, defines "Value-Added Agricultural Uses as:

> Uses of facilities that increase the value of agricultural produce over the cost of raw produce, such as canning, drying, freezing or packaging agricultural produce for the ultimate sale to consumers.

The use of value added agricultural to justify the inclusion adding concrete and asphalt recycling is not consistent with the Fresno County General Plan.

The proposed Project is inconsistent with the Fresno County General Plan Goal PF-F and Policy PF-F.3, Solid Waste Facility Siting. Policy PF-F.3, e. states:

Comment 12-22

> Solid waste facilities shall not be located adjacent to rivers, reservoirs, canals, lakes or other waterways.

The proposed Project is located adjacent to the San Joaquin River.

As noted above, Appendix B-1, page 57, Paragraph 4.4.23 states the Plant Site will use the fines, tailings and other mining waste to reclaim the bottom 20 feet of the excavation. The Quarry Site will deposit the fines, tailing and mining waste in the bottom of the excavation. The Plant Site will not be reclaimed for 30 years, and the Quarry Site will not be reclaimed for 100.

This will amount to 30 MT stockpiled until reclamation or 551 acres of sand and mine waste at 25 feet in height. In other words, the Project will include a significant disposal of solid waste onto the Project site. (Fresno County Municipal Code, Section 8.20.010.M ("defining solid waste"); Pub Res. Code 40191 (same), 40192 (defining "disposal" as final deposition of solid waste onto land).)

Comment 12-22 Cont.

In addition, the proposed Project includes the acceptance and recycling of used concrete and asphalt concrete. The Project Description indicates the annual tonnage of 200,000 MT. Solid waste processing facilities are considered solid waste facilities under the Public Resources Code and the Fresno County Municipal Code. (Public Resources Code §§ 40172, 40194; Fresno County Municipal Code § 8.20.010(G).)

The proposed uses of the Project as a solid waste facility are not consistent with the Fresno County General Plan. The EIR must be revised to address this land use impact.

ix. Proposed Project Elements

Comment 12-23

On page 2-40 the Draft EIR states that the Quarry Site is designed to continue avoidance of the riparian corridor along the San Joaquin River and mining setbacks required under the existing CUPs would remain the same. Figure 2-8, Proposed Quarry Site Mining Plan, needs to be revised to depict the setbacks required under the previous CUPs.

Comment 12-24

Also, on page 2-40 the Draft EIR states that the existing screening berms along North Friant Road frontage and the south property line would remain in place. The Draft EIR needs to provide the height and location of the existing berms and provide information on the north property line screening or setback. The Draft EIR should include a line-of-site analysis that depicts the maximum height of stockpiles on the Project Sites.

Comment 12-25

Table 2-6, Existing and Proposed Daily Truck Trip Generation does not include trips from the Material Recovery Facility that is planned to accept used concrete and asphalt concrete which is projected to total 200,000 tons per year. The table and its use within the Draft EIR need to be corrected to accurately depict generated truck trips and identify the significant environmental impact of the Project.

x. Trail Easements

Comment 12-26

On page 2-51, the Draft EIR states that the applicant is in discussions with the San Joaquin Conservancy's (SJRC) Executive Officer towards providing trail easements at the Plant and Quarry Site. The Draft EIR concludes that no further CEQA review is warranted because SJRC has not "currently" proposed development and construction. The trails are part of the San Joaquin River Parkway Master Plan. The Draft EIR further states that should the trails be proposed for development in the future, project-level CEQA review would be required prior to construction. This is not an accurate summary of the Project's impact on the San Joaquin River Parkway Master Plan.

The Draft EIR, states in Section 2.3, Project Purpose and Objectives, 10): Provide potential Parkway trail easement. The Project needs to make provisions for an easement to allow the San Joaquin River Parkway Master Plan to go forward and provide linkage to trails within a certain time limit, instead of 100 years from now. Project Description/Operational Statement, Appendix B-2 states that the Project will "acquire, through purchase, easements, or other mutually satisfactory transactions, land for recreation areas and the expansion of existing parks and recreation areas." Specific mitigation measures should be included in the Draft EIR requiring the Project to provide the necessary trail easements consistent with the San Joaquin River Parkway Master Plan and Lost Lakes Park Master Plan, acquire, through purchase, easements, or other mutually satisfactory transactions, land for recreation areas and the expansion of existing parks and recreation areas within five years of Project approval.

Comment 12-26 Cont.

xi. Other Agencies Whose Approval May Be Required

Comment 12-27

The proposed Project includes the acceptance and recycling of used concrete and asphalt concrete, and the final disposal of fines, overburden, and other mining waste onto the land. The Project Description indicates the annual tonnage of 200,000 MT in concrete and asphalt waste for recycling. This is considered a large Material Recovery Facility. This land use is subject to regulations as a proposed Material Recovery Facility, and possibly as a solid waste disposal facility. Recycling of concrete and asphalt concrete is subject to a Solid Waste Facility Permit (SWFP). The Draft EIR needs to provide details in the Project Description how the operation of the Material Recovery Facility and the disposal of fines, overburden, and other mining waste will take place and be consistent with all applicable regulations of CalRecycle.

b. Chapter 4: Environmental Analysis

Comment 12-28

i. Section 4.1 Aesthetics

The Draft EIR is inadequate in describing the significant impact on a designated scenic roadway. On page 4.1-61 of the Draft EIR states there are no state scenic highways. However, there are local designated scenic highways.

The Draft EIR is not consistent with the Fresno County Rural Bikeways Plan that depicts North Friant Road on Figure OS-1 of the Fresno County General Plan as a designated scenic highway. The Draft EIR is not consistent with the City of Fresno General Plan that depicts North Friant Road as a scenic highway. The Project has the potential to significantly impacting the off-site views from the roadway if not mitigated. The Draft EIR is inadequate because it did not analyze the off-site views from the designated scenic highway and did not include Project features to prevent the Project operations from being visible from the scenic roadway. Mitigation Measure 4.1-1 is inadequate to lessen the visual impact of the Project from the designated scenic roadways. The Project should include the following mitigation:

> No stockpiles or mining facilities including the cement plant, asphalt plant, material recovery or buildings shall be visible from North Friant Road or surrounding properties.

Comment 12-29

The Draft EIR is insufficient in mitigating the Project's impact on Light and Glare. The Project will introduce a new source of night time lighting in the surrounding community. The Draft EIR concludes that design features will result in a less than significant impact. However, there is no requirement that the Project implement any of the features discussed. Therefore, the following mitigation measure should be added to the Draft EIR:

- Night lighting on the property shall be arranged and controlled so as not to luminate public rights-of-way or adjacent properties.
- The Project shall only use high-pressure sodium and cut-off fixtures to minimize light pollution.
- The Applicant shall submit a lighting plan to the County Planning Department for approval prior to construction of the processing facilities that will identify the location of lights, how they will be aimed, and types of shielding that will be utilized such that light bulbs and reflectors are not visible from public viewing areas and illumination of the vicinity and the nighttime sky is minimized.
- Nighttime lighting on the Project Site shall be limited to areas required for the safety of project personnel and the public.
- The Project's fencing shall either be constructed of non-reflective material, treated, or painted to reduce visual impacts.
- Non-reflective surfaces or non-reflective paint shall be used for the processing plant equipment and structures to minimize glare from these facilities.

ii. Section 4.3 Air Quality

The air quality assumptions are inadequate to determine Project's environmental impacts and the conclusions in Section 4.3, Air Quality. The Draft EIR needs to be revised and recirculated.

(1) AQ Modelling

Comment 12-30

The air quality assessment was peer reviewed by Taylor Environmental in 2020, and was apparently completed in March of 2022. It is now March of 2025, and this analysis would appear to be woefully out of date. Were the latest versions of the air quality modelling tools used? Did they apply the latest regulations, such as the 2022 Advanced Clean Fleets Regulation and amendments to the 2004 Transport Refrigeration Unit (TRU) Airborne Toxic Control Measures?

(2) Baseline Selection

Comment 12-31

The AQ modelling is fundamentally flawed, because it arbitrarily selects as the baseline year 1998. (Appendix D-1 at p. 88 ("The Baseline was determined based on historical production records for the year 1998").) This flawed baseline was then subtracted from the

project impacts, and evaluated against the significance criteria. This is material, because emissions technology has advanced since 1998, and operations at the site have changed. An up-to-date baseline of the current conditions should be used to analyze the Project's impacts.

Comment 12-31 Cont.

(3) Aggregate Processing and Stockpiling

Appendix D-1, Air Quality, Health Risk, and Climate Change Impact Assessment, list the Project features that are used in assessing air emissions. The air emissions were incorrectly modeled on aggregate production of 3 MT per year. Table 2-1 lists 3.3 MT per year of aggregate processing. The remaining .3 tons per year are fines and mine waste that will remain on the Project Sites and stockpiled until they are deposited in the bottom of the mine at the time of reclamation, 30 to 100 years in the future. The Draft EIR air quality assessment needs to be revised to include this significant increase of 30 MT of aggregate processing and stockpiling to identify the significant environmental effect and provide mitigation.

Comment 12-32

(4) Concrete Recycling

The Draft EIR does not discuss the exposure to asbestos from recycling older concrete or provide protocols to prevent exposure to workers and the public. Mesothelioma Hope website provides information on "The Risk of Asbestos in Concrete." The Draft EIR needs to be revised to include analysis of the risk of airborne asbestos exposure from recycling used concrete.

Comment 12-33

(5) Project Components for Air Quality Analysis

Table 4.3-8, Rockfield Modification Project Components of Air Quality and Greenhouse Gas Modeling, does not include operation mobile equipment, onsite and offsite delivery trucks, or onsite and offsite workers vehicles. The air quality and greenhouse gas modeling are insufficient to analyze the significant environmental effect of the proposed Project. Table 4.3-8 needs to be revised to include all Project components.

Comment 12-34

(6) Baseline Emissions

Baseline emissions information depicted in Table 4.3-9, Historical Production Data, needs to be revised. Production of aggregate, concrete and asphalt is seasonal with an increase in production during Summer months. The baseline emission data needs to describe how the Maximum Hour and Maximum Day is determined for modeling.

Comment 12-35

(7) Emissions

Tables 4.3-10, 4.3-11 and 4.3-12 needs to be revised to include operation mobile equipment, onsite and offsite delivery trucks, or onsite and offsite workers vehicles.

Comment 12-36

Tables 4.3-16 and 4.3-17 needs to clearly depict the thresholds of significance for each source pollutant.

(8) VMT Impacts on GHGs and Air Quality

Comment 12-37

Table 34 of Appendix D-1 states the Project vehicles are heavy-heavy duty and are not subject to heavy duty GHG Phase 1 regulations. However, there are heavy duty trucks that have a direct and indirect impact that are generated by delivery of Project's products and acceptance of materials for recycling. Although the Vehicle Miles Travel (VMT) is used to determine transportation impacts and has been limited to passenger vehicles and light trucks, VMT for the operational aspects of the Project still applies to determine environmental impacts from air quality and hazards. The Project's air quality modeling needs to include the 6.2 million annual VMT generated by the Project (Appendix I-2, Estimates of Vehicle Miles Traveled). To the extent the VMT analysis indicates that the Project will result in a reduction of regional VMTs from similar aggregate mining operations, the EIR must still analyze the air quality impacts caused by the redistribution of VMTs. For instance, will heavier traffic on Friant Rd. result in higher levels of diesel particulate exposure in closer proximity to sensitive receptors?

(9) Compliance with Air Quality Plans

Comment 12-38

On page 4.3-57, the Draft EIR, concerning Impact 4.3.1, is insufficient and needs to be revised. The emission data for Project operations exceeds daily and annual San Joaquin Valley Air Pollution Control District (SJVAPCD) thresholds which results in conflict with air quality plans.

In addition, the analysis concludes the Applicant will be able to comply with future rule making by the SJVAPCD concerning implementation of applicable air quality plans. Thus, concluding that the level of significance before mitigation is less than significant. There is no requirement in the Draft EIR for the Project to comply with future air quality attainment plans during the 100-year Project duration. This assumption was used to support a determination of less than significant is not support by proposed Project components. The air quality assessment assumed minor changes in rulemaking in the future will "likely" lessen future Project impacts on air quality. A mitigation measure should be included to the Draft EIR requiring the Project to comply and implement all new technology, air quality plans, goals and regulations in the future.

(10) Natural Gas

Comment 12-39

California Energy Commission has a goal of eliminating natural gas use by 2045. The use of natural gas has a significant impact on greenhouse gases in California. The Project proposes the use of natural gas for the asphalt plant and therefore would not be in compliance with this goal. The Project, to comply should build the new asphalt plant using electricity instead of natural gas or other fossil fuels. This will result in a reduction in air pollutants. The Project should be revised to use electricity instead of natural gas or other fossil fuels for the asphalt plant and other Project components.

The Project should be required to use all-electric mining trucks. Caterpillar has successfully demonstrated the first battery electric 793 large mining truck. The Project should be required to use all-electric mining vehicles to lessen air quality impacts.

Caterpillar Electric 793 Mining Truck

Comment 12-40

(11) Greenhouse Gases Modeling

The Project used the South Coast Air Quality Management District's guidance on impact analysis for GHG, stating that SJVAPCD modeling was outdated. The advantage to the Project was the exclusion of emissions from sectors that are required to participate in the Cap-and-Trade Program, i.e. gasoline and diesel. This is an impermissible deferral of the obligation to disclose the environmental impacts of this Project. The Project should use the SJVAPCD modeling or another suitable methodology that actually analyzes the impacts from this Project.

(12) CO2 Emissions

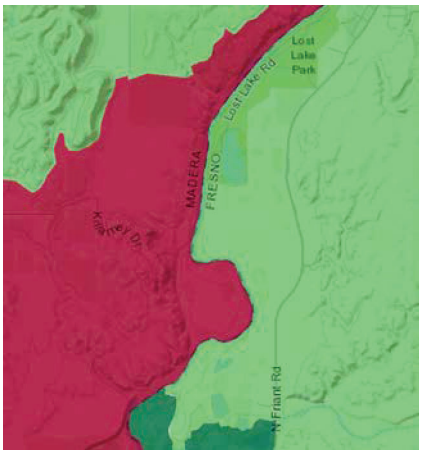
Comment 12-41

SJVAPCD uses the CalEEMOD model to determine project's air quality impacts. The air quality analysis in Appendix D-2 also states the Project uses CalEEMOD. On page 4.3-62, Table 4.3-23, Mitigated and Unmitigated CO Concentration was modeled without including the 6.2 million annual VMT generated as required in the CalEEMOD. Therefore, the conclusion the Project does not exceed CO concentration is not accurate and needs to be revised to analyze the entire Project's environmental impact on CO concentrations and other air pollutants. The Draft EIR needs to be revised to include all sources of air pollutants from the Project for air quality modeling.

(13) Fugitive Dust Control

Comment 12-42

The Draft EIR needs to include an analysis of the Project's dust particulate (PM2.5) impact on the Census Tract 6039001000 located westerly from the Project in unincorporated Madera County and surrounding area in order to determine the cumulative net increase of an criteria pollutant. CalEnviroScreen 4.0 indicates this area has a high pollution burden of 90 percentile for PM2.5 as shown in red. High PM2.5 (94 Percentile) is also the existing condition for adjacent Census Tracts easterly in Fresno County but has a lower overall pollution burden as shown in green due to other socio/environmental factors, such as the ability to deal with pollution load. The increase in aggregate production from 1.3 MT to 3.3 MT annually at both the Plant and Quarry Site will exasperate the existing conditions on this area.



Source: CalEnviroscreen 4.0

Comment 12-43

Mitigation Measure 4.3-2, Fugitive Dust Control Plan, on page 4.3-62 is not adequate and needs to be revised to include that all trucks hauling materials need to be completely covered both on-site and delivery trucks to reduce fugitive dust generated by the Project.

Table 4.3-20 identifies that CO, PM10 and PM2.5 exceeds significance criteria. Mitigation Measure 4.3-2 is not adequate to mitigate the significant environmental impacts to less than significant. The Draft EIR needs to identify additional measures that the Project can implement in order to make the finding of less than significance. Therefore, without additional analysis and mitigation the Draft EIR results in Significant and Unavoidable.

Mitigation Measure 4.3-2 Fugitive Dust Control should include the following additional mitigation:

> All truck loading/unloading facilities to be equipped with one 110/208-voltpower outlet for every two-truck loading/unloading facility. A minimum 2-foot-by-3foot sign shall be clearly visible at each loading lock and in a readable letter size that states: “Diesel engine idling limited to a maximum of 2 minutes.” The sign shall include instructions for diesel trucks idling for more than 2 minutes to connect to the 110/208-vole poser to run any auxiliary equipment.

Comment 12-44

(14) <u>Air Quality Impact on Sensitive Receptors</u>

On page 4.3-63, Table 4.3-24 indicates the Project exceeds the threshold for environmental significance for Excess Cancer per Million People Exposed and for the Maximum Acute Hazard Index. The Draft EIR reached this conclusion even without including the 6.2 million annual VMT generated by the Project or the added aggregate processing and stockpiling. There is no explanation why “Fence-line Receptors” are not included in the table. However, users and workers at the adjacent recreation parks would have exposure. The Draft EIR needs to include additional mitigation to reduce air quality impact and health risks from the Project.

Thes mitigation measures should include the following:

- All truck loading/unloading facilities to be equipped with one 110/208-voltpower outlet for every two-truck loading/unloading facility. A minimum 2-foot-by-3-foot sign shall be clearly visible at each loading dock that indicates, "Diesel engine idling limited to a maximum of 2 minutes." The sign shall include instructions for diesel trucks idling for more than 2 minutes to connect to the 110/208-volt power to run any auxiliary equipment. Comment 12-44 Cont.

- The use of electric-powered "yard trucks" or forklifts to move truck trailers around a truck yard or truck loading/unloading facility.

- The use of buildings or walls to shield commercial activity from nearby residences or other sensitive land uses.

- The use of EPA-rated Tier 4 Final engines in diesel-fueled construction equipment when construction activities are adjacent to existing sensitive receptors.

- The planting and maintenance of vegetative buffers between truck loading/unloading facilities and nearby residences, schools, daycare facilities, and any other sensitive receptors. As part of detailed site design, a landscape architect licensed by the California Landscape Architects Technical Committee shall identify all locations where trees should be located, accounting for areas where shade is desired such as along pedestrian and bicycle routes, the locations of solar photovoltaic panels, and other infrastructure.

- The use of all electrical-powered Transportation Refrigeration Units (TRUs).

- The use of all electric heavy-duty trucks.

- Designate truck routes that avoid sensitive land uses, including low-income and minority neighborhoods.

(15) Odors

The proposed Project includes a hot-mix asphalt plant that will generate 200,000 tons of asphalt per year. Hot-mix asphalt plants generate noxious odors that can impact people even 1.5 miles away. The discussion of Impact 4.3-4, starting on page 4.3-65, states that the hot-mix asphalt is a continuation of the of past activities. However, the asphalt plant stopped operations in 2009 and therefore is not considered a part of the baseline conditions and needs to be treated as a new and unapproved land use pursuant to Fresno County Zoning Code Section 868.6.020, Expiration. Comment 12-45

The Draft EIR states that no odor complaints were received when the previous asphalt plant operated, however there is no information on what type of asphalt plant was in operation. There are no records to search for odor complaints and it is based on a person's memory. Therefore, not a reliable assumption to make a finding of no previous odor complaints. This just as likely indicates there is poor record keeping and lack of concern about the asphalt plant's impact on the community. Comment 12-46

Comment 12-47

The odor impact analysis assumes facts that are not part of the Draft EIR or its Project description as justification of reduced Project air quality impacts. Section 4.3-4 states that the proposed asphalt plant would generate fewer odor producing emissions than the past due to its fuel source being natural gas instead of diesel and due to the use of new technology to capture 95% of blue smoke emissions and therefore concludes "it is not anticipated that Stage 1 operations on the Plant Site could generate odors that would adversely affect a substantial number of people." This assumption is not supported by facts.

The use of natural gas instead of diesel will not occur until a natural gas line is installed to the asphalt plant for Phase 1 at the Plant Site. There is no discussion of the fuel source for the asphalt plant when it is relocated in Phase 2 at the Quarry Site. The Draft EIR does not identify when natural gas will be used in Phase 2 at the Quarry Site. There is not discussion what happens to the fuel source as the asphalt plant is moved to accommodate surface mining in either Phase 1 or Phase 2. There is no discussion that identifies and details the "new technology" will capture 95% of blue smoke or if the asphalt plant will include this technology. The Draft EIR needs to be revised to provide specific equipment that will capture 95% of blue smoke.

Comment 12-48

The Draft EIR bases Project Impacts on air quality odors based on a "modern" asphalt plant. The Draft EIR does not provide any details on what a modern asphalt plant consists of or a list of equipment that reduces odor impacts, just that the asphalt plant will receive a permit from the SJVAPCD prior to operation. However, this is not a guarantee that the proposed asphalt plant will not generate offensive odors to the surrounding community during the life of the Project.

The County of Orange, which has a similar air inversion condition as the San Joaquin Valley, approved a hot-mix asphalt plant on a portion of a former gravel quarry in 1993 located in unincorporated Orange County north of the City of Irvine. There are a series of rolling hills and valleys that separate the asphalt plant from the nearest residences, 0.5 miles away. An EIR with a Health-Based Risk Assessment was prepare in 2005 for a residential development that concluded it was unlikely that releases from the asphalt plant would have the potential of adversely affecting the residential development since the asphalt plant received the necessary permits.

However, this was not the result and even with the expert assistance of the South Coast Air Quality Management District (SCAQMD) it was very difficult to stop adversely affecting the surrounding community, even at 1.5 miles away. The asphalt plant emitted odors that resulted in eventually the City of Irvine buying the asphalt plant to eliminate the nuisance from its residents at a cost to tax payers of between $50 and $100 Million Dollars.

In 2020, the City of Irvine filed a "Complaint for Public Nuisance Abatement Injunction, Equitable Relief and Civil Penalties (30-2020-01153015-CU-MC-CJC) (Irvine Lawsuit) against the hot-mix asphalt plant. The Lawsuit stated that since 2019, 468 complaints relating to the asphalt plant were fielded by SCAQMD with the vast majority related to issues with asphalt, oil, tar-like odors and smoke. SCAQMD stated in 2022 that they had received more than 1,400 odor complaints from the asphalt plant source.

Comment 12-48 Cont.

SCAQMD issued in 2022 eight odor nuisance NOVs to the asphalt plant. The asphalt plant was expanded in 2016 with active permits for existing equipment. Irvine's asphalt plant is considered "modern" and SCAQMD stated it is working with the operator on a "carbon adsorption unit" under a research permit. The plant in 2022 was to evaluate if there was a decrease in odor or emissions. SCAQMD also required the asphalt plant to instruct drivers to cover any loads of asphalt prior to leaving the facility and instruct drivers on approved truck routes. None of this worked to mitigate odors and the City of Irvine purchased the asphalt plant in 2023.

Draft EIR, Impact 4.3-4 states that there are residences within 0.25 miles from the proposed asphalt plant and concludes that it is "unlikely" that substantial odors from the asphalt plant would be generated at these distances based on Figure 4.3-4, Wind Rose. However, Figure 4.3-4 depicts a wide area of impact surrounding the Project under typical low wind conditions. Section 4.3.1.1, Environmental Factors Affecting Air Quality, that states: "Low wind speed conditions limit horizontal air dispersion and can result in a buildup of air pollutants." The conclusion that residences 0.25 miles away will not experience substantial odors is not supported by fact and is likely. This would result in a significant environmental impact that needs to be mitigated.

Comment 12-49

Figure 4.3-4, Wind Rose, is insufficient to adequately depict the influence of wind on the Project. Winds are seasonal and vary between winter (December – February) spring (March – May) summer (June – August) and fall (September – November). The Draft EIR should be revised to provide the seasonal analysis of wind direction and speed that is overlaid on aerial maps of the surrounding 3-mile area that includes all sensitive receptor locations.

Comment 12-50

Mitigation Measure 4.3-4: Asphalt Plant Emissions Controls, is not sufficient to mitigate the significant odors and air pollutants from the asphalt plant. Mitigation Measure 4.3-4 should be revised as follows:

> Prior to the issuance of any permit a sign shall be posted at each entrance to the Project, with letters large enough to be read from the public road, with the San Joaquin Valley Air Pollution Control District most current toll-free phone number (800-870-1037), website address and email address to make odor, vehicle smoke and dust complaints. The sign shall include the name of the facility and address. The sign shall be updated as soon as any of the information changes.
>
> The operator of the facility will annually mail to each property owner within 3 miles of the Project Site, the County of Fresno and any interested parties requesting the notice, a letter with information on how to file an air pollution complaint to the San Joaquin Valley Air Pollution Control District with the following explanation:
>
> > The District receives complaints that may constitute a public nuisance. The state's public nuisance law (CH&SC 41700) prohibits emissions which cause odors or other disturbances in the community that impact a

significant number of people, create a threat to public health or cause damage to property.

Comment 12-50 Cont.

Asphalt loads are required to be covered prior to leaving the facility and operator shall instruct drivers on approved truck routes.

Mitigation Measure 4.3-4, 1) states that asphalt cements with lower VOC/SVOC emissions, as approved by the SJVAPCD, shall be used to the "extent feasible" will not result in a measurable reduction in VOC/SVOC. The proposed mitigation does not quantify a limit on the use of processes that generate higher VOC/SVOC. The use of lower VOC/SVOC depends on how the asphalt is being uses, such as the specification requirement of the roadway being paved. The Draft EIR needs to identify the different types of asphalt processes, their use and the amount of VOC/SVOC they emit, and the anticipated percentage of Project's production of the different types of asphalt, especially the production of lower VOC/SVOC asphalt. The mitigation measure needs to quantify and limit on the amount of high VOC/SVOC asphalt that can be produced in order to mitigate the Project's environmental air quality impacts.

Comment 12-51

Mitigation Measure 4.3-4, 2) states: "To reduce VOC emissions, periodic burner tune-ups shall be implemented" is not adequate to mitigate the significant environmental impacts on air quality. The mitigation measure needs to identify the equipment being added that is used to reduce air pollution impacts. The Draft EIR in determining "less than significant impact" relies on the uses of "new technology" that will capture 95% of blue smoke. The mitigation measure should include that the Project will conform to all new laws to prevent generation of air pollutants and update its equipment and procedures to conform with any new rule making, within six months of enactment.

Comment 12-52

The use of the term "periodic" has no quantifiable meaning and will not result in adequate mitigation. The mitigation needs to include a meaningful time limit, such as daily, weekly or monthly that the burner tune-up shall take place.

Mitigation Measure 4.3-4 3) needs to be revised to apply to the features and environmental impacts of the Project instead of a project located in Imperial County.

Comment 12-53

The mitigation measure should include that the County of Fresno will monthly inspect the operations of the Project to determine that the Plant Site and Quarry Site are implementing all design features, conditions of approval and mitigation measures. The County of Fresno will keep records of all inspections, public complaints and notice of corrections during the life of the Project (100 years). This information shall be available to the public.

(16) Odor - Pond Pits

Comment 12-54

The Reclamation Plan will result in pond pits on each Project Site. The Draft EIR acknowledges stagnant water can lead to odors. The impact analysis assumes that there will be enough groundwater flow through the Plant Site pond and the Quarry Site to eliminate pond stagnation. Appendix G-4, Groundwater Conditions Quarry Site, indicates after reclamation there will be low inflow of groundwater with higher evaporation to prevent a pond deeper than

Comment 12-54 Cont.

110 feet. The Draft EIR impact analysis states that the Quarry Site pond will upwell twice a year that will result in no pond odors.

The Quarry Site pond is over 400 feet from the surrounding surface. It is unlikely the pond will experience wind upwelling given the depth of the quarry walls, narrow surface water area and the typical low wind conditions in the area. Ocean upwelling only occurs in 4 places on earth and account for only 1% of the ocean surface.

Upwelling can occur with change in surface water temperature. However, deep quarry ponds typically remain very cold all year so it is unlikely that upwelling will occur due to warm surface water and certainly not twice a year. The Draft EIR does not support the assumption that the pond pits will not become stagnant and create an odor nuisance to the surrounding sensitive receptors. The Draft EIR should include a mitigation measure to prevent stagnant water as is included in Previous CUPs. Conditional Use Permit 2032, included Condition No. 14:

> All water bodies shall be designed to avoid stagnant water or shall be improved with appropriate circulation systems. Corrective measures shall be taken to eliminate the stagnant condition of the pond adjacent to the plant site.

The Draft EIR conclusion of Less than Significant after mitigation for air quality impacts is not supported by the analysis or the proposed mitigation to lessen the identified environmental impacts. The Draft EIR should fine the Project's environmental impact on air quality is Significant and Unavoidable.

iii. Section 4.4 Biological Resources

Comment 12-55

The Draft EIR is insufficient in describing the environmental impact of the Project's Biological Resources and providing mitigation for Project's significant environmental impacts. Mitigation Measures 4.4-1a, 4.4-1b and 4.4-1c only require the biological resources clearance surveys "at the start of construction" or "initiation of a mining phase." The Project only has two phases, Phase 1 of 30 years and Phase 2 of 70 years. The mitigation measures are inadequate to prevent the significant Project impacts on Burrowing Owls, Western Pond Turtle and Western Spadefoot, and nesting birds. The mitigation measure needs to be revised to require annual surveys and when mining operations occur or are relocated within the Project Site to prevent mining operation's impacts on biological resources.

iv. Section 4.8 Greenhouse Gas Emissions

Comment 12-56

The Project used the South Coast Air Quality Management District's guidance on impact analysis for GHG, stating that SJVAPCD modeling was outdated. The advantage to the Project was the exclusion of emissions from sectors that are required to participate in the Cap-and-Trade Program, i.e. gasoline and diesel. This is an impermissible deferral of the obligation to disclose the environmental impacts of this Project. The Project should use the SJVAPCD modeling or another suitable methodology that actually analyzes the impacts from this Project.

Comment 12-57

v. Section 4.9 Hazard and Hazardous Materials

The Draft EIR is insufficient in describing the environmental impact of the Project and needs to be revised. Section 4.9 needs to include the exposure to asbestos from processing 200,000 tons annually of used concrete to make aggregate. The Draft EIR needs to include mitigation to lessen the exposure to workers and the community from asbestos in the aggregate process and stockpiling of broken and crushed concrete that may contain asbestos by requiring testing of used concrete prior to accepting material.

Comment 12-58

Impact 4.9-3 states that "upon completion of the final reclamation activities, the Plant Site and Quarry Site would be converted to open space land use." The Fresno County General Plan defines Open Space Land as:

> Any parcel or area of land or water that is essentially unimproved and devoted to an open space use for the purpose of: 1) the preservation of natural resources; 2) the managed production of resources; 3) outdoor recreation; or 4) public health and safety.

The Project is not consistent with the Fresno County General Plan definition of Open Space Land. Table 2-2, Allowable Uses and Permit Requirements for Agricultural Zones (attached as Exhibit 2 hereto) lists all the land uses allowed, however none of the land uses listed could be accommodated if the Project's Reclamation Plan is implemented.

Comment 12-59

The Fresno County Zoning Code Section 834.4.220, Material Extraction Sites, defines "Reclamation" as:

> Reclamation. The combined process of land treatment that minimizes water degradation, air pollution, damage to aquatic or wildlife habitat, flooding, erosion, and other adverse effects from surface mining operations, including adverse surface effects incidental to underground mines, so that mined lands are reclaimed to a usable condition which is readily adaptable for alternate land uses and create no danger to public health or safety. The process may extend to affected lands surrounding mined lands, and may require backfilling, grading, resoiling, revegetation, soil compaction, stabilization, or other measures.

The Draft EIR describes that reclamation of the 85-foot-deep pit at the Plant Site is to result in a 65-foot-deep quarry hole with eventually 20 feet of water that is not accessible by the public and has no recreational value or use. The Previous CUP's approved by the County require the Reclamation Plan to show the number of lakes with islands (CUP 2032, Condition of Approval No. 13). All other terms of the previously approved rehabilitation plans required in the CUPs should be disclosed for a fair comparison of the final impacts of this project following reclamation.

The Quarry Site's 600-foot-deep pit is to result in a 400-foot sheer walled quarry with eventually 200 feet of water at the bottom. There is no public accessibility or recreational value to the reclamation plan as presented in the Draft EIR. Surface mining quarries are notoriously

hazardous with drowning fatalities. Quarries have steep drop-offs, deep water, sharp rocks, flooded equipment, submerged wire and industrial waste according to an article by Hobart M. King, PhD, RPG, "Abandon Mine and Quarry Accidents Claim Several Lives per Year," (attached as Exhibit 4 hereto). Comment 12-59 Cont.

The Draft EIR needs to be revised to provide analysis of the dangers of closed surface mines on the public. The Project and Reclamation Plan needs to be revised to leave the Project Sites in a useable condition which is readily adaptable for alternative land uses and create no danger to the public health or safety.

The Draft EIR should analyze the potential for a significant human health impact from mosquito borne pathogens and other vectors that may find habitat in the multiple ponds that will be created within the proposed Project. The Vector-Borne Disease Section of the California Department of Public Health has published Best Management Practices for Mosquito Control in California (the "Vector BMPs"), available at westnile.ca.gov/pdfs/BMPMosquitoControl.pdf. The document indicates that "Standing water mosquito breeding sites may include artificial containers, treeholes, catch basins, open ditches, retention/detention ponds, natural or constructed ponds and wetlands, stormwater management devices, and the edges of streams." The multiple ponds present in the project therefore present possible breeding grounds for mosquitos, which have been found to be infected with West Nile Virus in Fresno County. (https://westnile.ca.gov/case_counts.php?year=2023&option=print.) This potential impact should be evaluated and the Universally Applicable Mosquito Control BMPs and other appropriate BMPs identified in the Vector BMPs should be included in the Draft EIR. Further analysis and development of appropriate mitigation measures should be performed in consultation with the Fresno Mosquito and Vector Control District. Comment 12-60

vi. Section 4.11 Land Use Comment 12-61

(1) Zone Change

Table 2-1, Rockfield Modification Project Characteristics, includes "Concrete and Asphalt Recycling" with the "annual sales" of 200,000 MT in both Phase 1 and 2. As noted above, the Project also includes a solid waste disposal component for the fines, overburden, and other mining wastes. Pursuant to Fresno County Zoning Code Section 808.2.- Agricultural Zones, Table 2-2, Allowable Uses and Permit Requirements for Agricultural Zones, a Recycling Facility or Solid Waste Disposal Facility is not an allowed land use in the Agricultural Zone. Therefore, the proposed Project is required to apply for a zone change in order to include concrete and asphalt recycling and processes and large scale solid waste disposal.

(2) Lost Lake Park Master Plan Comment 12-62

The Draft EIR is not consistent with the Lost Lake Park Master Plan and needs to be revised to include analysis of consistency with the approved plan. Lost Lake Park Master Plan, dated 2011, plans trail connections to and through the Project Sites. The Central Valley Vision Plan to improve livability and the regions need for recreational opportunities.

(3) Surface Mining and Reclamation Act

Comment 12-63

The Draft EIR is not consistent with the California Surface Mining and Reclamation Act (SMRA). The intent of the legislature pursuant to Cal. Pub. Res. Code § 2712:

> It is the intent of the Legislature to create and maintain an effective and comprehensive surface mining and reclamation policy with regulation of surface mining operations so as to assure that:
>
> a. Adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition which is readily adoptable for alternative land uses.
>
> b. The production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment.
>
> c. Residual hazards to the public health and safety are eliminated.

The proposed Project results in significant and unavoidable environmental direct, indirect and cumulative impacts for aesthetics, air quality and transportation that cannot be mitigated. Therefore, the adverse environmental effects of the Project are not prevented or minimized. The Project is not consistent with Section 2712(a).

Comment 12-64

The Project's reclaimed condition of the Plant Site and Quarry Site has no other adoptable land use than a pit pond surrounded by steep walls. There is no visual benefit to the community because the water is located so far down from the surface. Painting the quarry walls brown is insufficient to mitigate the visual impact of the steep quarry walls that cannot be planted with vegetation and are too steep to maintain vegetation.

The Draft EIR concludes the reclamation plan will be used for open space, riparian and open water wildlife habitat. There is no evidence presented that water wildlife will have a beneficial use of the pit pond. Section 4.4 Biological Resources, states:

> Adverse effects to special-status species could occur if wildlife that encounter the quarry pit pond or quarry lake are exposed to water with elevated concentration of metals or minerals.

The Project does not include measures to prevent the accumulation of metals or minerals. In fact, the Project proposes to abandon mining equipment and other metals in the mine pit that will be broken down over time by water resulting in accumulation of metals. The Project's Reclamation Plan does not provide a recreational value to the community. There is no mitigation measure that requires land dedication for trail easements or purchase of alternative land for recreational use. Although the Project Description/Operational Statement in Appendix B-2 makes many statements of mitigation the operator will do, many are not part of the Project and have not been included as mitigation measures in the Draft EIR. The Project is not consistent with Section 2712(b).

As discussed above, abandoned quarries are fundamentally dangerous to the community, especially in a high-use recreational area as the San Joaquin River. The abandoned quarry is an attractive nuisance that people will be tempted to go into. The Project will leave behind very dangerous quarry pits. The only protection for the public is a 4-foot-high barb wire fence. The Project is not consistent with Section 2712(c). Comment 12-65

Special consideration needs to be applied to the Project in determining consistency with the SMRA and CEQA. The proposed Project is located near to urban development and the area will continue to grow in population with associated housing and commercial development that will result on an increase in people exposed to the dust, odor, noise, air pollutants and safety concerns generated from the Project. A 491 multifamily project has been constructed the northeast corner of Friant Road and Copper Avenue, less than 3 miles from the Project. The Project is located within a highly desirable recreation area of the region. The need for recreational use will continue to grow as the population in the area increases during the life of the Project. The area is already in need of additional recreational opportunities. The Project will result in exposing an increasing number of people using the San Joaquin River recreational facilities to odors, dust, noise, air pollutants and safety concerns during the life of the Project.

vii. Section 4.17 Transportation

Comment 12-66

(1) Truck Routes

The Draft EIR is insufficient in describing the Project's environmental impacts on transportation and needs to be revised. Section 4.17 needs to include a map of approved truck routes accessing the Project Sites from major transportation facilities in Fresno County and surrounding cites.

The VMT analysis in Appendix I-2 discloses that the Project will result in an increase from the existing 3,153,449 VMTs of the current operation to 6,668,850 VMTs in Phase 2. While the analysis also provides that a no-project alternative will result in 8,060,099 VMTs as a result of demand being "redistributed" to other mines in different locations, Figure 4.17-2 of the Draft EIR shows that these other sites are located away from Friant Road, which will be the most heavily travelled street by trucks from the proposed Project. In light of the sheer volume of VMTs that could be "redistributed" depending on the existence of the Project makes a clear map of truck routes even more crucial to understanding the impacts of this Project.

(2) Pedestrians

Comment 12-67

The Draft EIR is insufficient in describing the existing pedestrian facilities in the Project vicinity. Section 4.17.1.4 must be updated to include the Eaton Trail on the west side of North Friant Road that serves both pedestrians and cyclists. Intersection trail crossings exist along North Friant Road at the intersections of Copper, Lakewood, Champlain, Fort Washington, Shepherd, Audubon and Fresno. Each of these pedestrian intersections connect residents of the City of Fresno to Woodward Park, trail facilities, residential, office and retail uses.

Comment 12-68

(3) Transportation Policies

The Draft EIR is insufficient in identifying applicable land use and planning policies and ordinance. The proposed Project needs to be consistent with City of Fresno Active Transportation Plan https://www.fresno.gov/publicworks/active-transportation-plan/ seven (7) goals:

1. Safety Enhancement
2. Connectivity, Accessibility and Comfort
3. Equity and Inclusivity
4. Economic Vitality & Quality of Life
5. Education, Encouragement & Enforcement
6. Data Collection and Performance Monitoring
7. Ongoing Maintenance

The Draft EIR is not consistent with the City of Fresno Active Transportation Plan's safety goals. It is common sense that more than doubling the annual mining activity, adding aggregate mining at the Plant Site (which is a new use, since the prior use was ceased), adding an asphalt plant, increasing concrete production, adding material recovery operations and sales of materials from the plant will increase heavy trucks on the roadways accessing the Project Sites from major transportation corridors. The added truck traffic on roadways, such as North Friant Road will exasperate existing safety issues to motorist, cyclist and pedestrians. There have been multiple pedestrian and bicyclist fatalities along Friant Road. Pursuant to Jill Gromley, Assistant Director, Traffic Engineering Division, City of Fresno:

> There have been 189 collisions reported along Friant Road corridor from Blackstone to Copper River Drive from January 1, 2019 to December 31, 2024. Sixty-two (62) of these collisions resulted in injuries and 8 were fatal. Three of the fatal collisions involved pedestrians and one involved a bicyclist. Park patrons and trail users frequently park east of Friant Road and walk through the Woodward Park entrance on Fort Washington or utilize the parking lot on the southeast corner of the Friant/Copper intersection. The residential uses east of Friant Road generate high volumes of park patrons and trail users crossing Friant Road. Frequent complaints from visitors at the park and trail users is the high speed of traffic along Friant Road and large volumes of truck traffic.

The population of Fresno County will increase over the life of the Project (100 years) which will result in increased likelihood of conflicts between trucks from the Project and pedestrians and cyclist. Although the City of Fresno monitors roadway speed, intersection operations, and adjusts speed limits accidents and deaths still occur. The Project should

implement the measures of the Fresno Area Transportation Plan and include Project features to mitigate truck traffic safety impacts on the surrounding area.

Comment 12-68 Cont.

(4) Transportation Impacts other Than VMT

Comment 12-69

The Draft EIR is insufficient in assessing transportation impacts and needs to be revised. Pursuant to OPR's Technical Advisory on Evaluation Transportation Impact in CEQA, dated December 2018, Paragraph G Analyzing Other Impacts Related to Transportation, page 25 a change in the methodology of assessing transportation impacts does not relieve a public agency of the requirement to analyze a project's potential significant transportation impacts to air quality including mobile sources, noise, safety, or any other impact associated with transportation. Under Public Resources Code section 21099(b)(3), the deprecation of level of service analysis does not "preclude the application of local general plan policies, zoning codes, conditions of approval, thresholds, or any other planning requirements." Accordingly, the County's traffic index thresholds of significance (along with consideration of other non-delay related impacts) are still applicable.

Using the County's TI thresholds, Chapter 4.17 concludes that the Project results in significant unavoidable impacts after mitigation to pavement conditions on Friant Road between North Fork Road and Copper River Drive, and Willow Avenue between Friant Road and Copper Avenue. (Draft EIR at 4.17-29 through 30.) These impacts are virtually undeniable, given the 6 million VMTs from Project-related vehicles, mostly heavy trucks delivering aggregate and asphalt from the Project and the acceptance of used concrete and asphalt concrete for recycling. While the LOS impacts may be moot in light of SB 743, these pavement impacts are not.

Furthermore, in the discussion of impact 4.17-3, regarding increases to hazards, the Draft EIR concludes that no such impact would occur, in part because "the operator of the Rockfield Quarry would be required to pay an equitable share of pavement improvements to the County of Fresno to improve the pavement section and accommodate the traffic index values, thereby keeping road conditions safe." This is inconsistent with the conclusion in Impact 4.17-1 that the mitigation measure would be insufficient to avoid a significant adverse impact.

Comment 12-70

The City of Fresno is concerned about the Project's significant unmitigated environmental impact to its roadway surfaces from truck traffic carrying heavy loads. The Project truck traffic Average Daily Trips is expected to increase 57% over existing conditions in State 1 and an additional 38% in Stage 2. Figure 4.17-1, Traffic Study Intersection and Project Trip Distribution Percentages, indicates that 55% of the Project traffic will utilize North Friant Road to southwest of the Project Site. That traffic will be dispersed throughout the City of Fresno. Public Works Director, Scott Mozier, PE, TE estimates that the cost to repave Friant Road from SR-41 to the northern city limit is $12.8 million dollars. This would occur at 20-year frequencies, there would be a total of five rehabilitation projects for a 100-year repaving cost of $64 million dollars. This is a significant cost to the City of Fresno of Project related to non-LOS transportation impacts.

The Draft EIR needs to provide an up to date analysis of the transportation impact of truck traffic on surrounding roads (not just Friant Road and Willow Avenue) and provide a

Project Trip Distribution analysis that indicated the percentage of truck traffic using study area roadways and intersections. The Draft EIR needs to provide an analysis of the existing condition of roadways and the potential of the Project's truck traffic to degenerate the life of the roadway pavement and provide mitigation for the Project's transportation impacts. Comment 12-70 Cont.

In addition, the Draft EIR should consider additional mitigation measures to address this significant impact. The Project should pay for the repair of all Project-related impacts to wear and tear of roadways. The following mitigation measure should be added to the Project: Comment 12-71

> The Applicant/Owner shall enter into an agreement with the City of Fresno to pay for all cost of roadway damage caused by the Project's truck traffic. The Applicant/Owner will pay the cost to prepare a study and monitor roadway conditions every 5 years thorough the life of the Project and until the Reclamation Plan has been fully implemented.

viii. Section 4.16 Recreation Comment 12-72

The Draft EIR is insufficient in describing the recreational facilities near the Project Sites. A map should be provided to depict the location of the recreation facilities identified in Table 4.16-1.

Table 4.16-1 is not accurate in describing the uses of the recreation facilities. San Joaquin River Ecological Reserve – Willow Unit and Lost Lake Park had access from a bridge and once the bridge is rebuilt, will have public access. Currently, public access can be made via the river by boat. The Draft EIR needs to use descriptions provided by the facility such as day use, hiking trails and camping. The Draft EIR presents information in a manner to lessen the public's value of the recreation facilities around the Project.

ix. Section 4.19 Hydrology And Water Quality Comment 12-73

The Hydrology and Water Quality analysis fails to consider significant potential impacts and several mitigation measures that should be revised to address those impacts.

For example, the proposed Project stands to greatly increase the depth of mining, which would require continuous dewatering in areas beneath the existing groundwater levels. This may result in the movement of water from deeper confined areas of the aquifer, reducing the availability of water for other wells in the area. Additional analysis of that potential impact is required.

The Draft EIR notes the presence of mobilized natural constituents in recycled silt pond water, but dismisses that impact as the result of "variability in sampling procedures," and discounts the presence of manganese and iron without sufficient analysis. The variability in measurements may be the result of operational factors. The Draft EIR must consider whether mobilized constituents have entered the groundwater at high concentrations, and must fully address the potential health implication of elevated iron and manganese concentrations. Comment 12-74

In addition, the mitigation measures listed in this section require further refinement. The Blasting Protocols (Mitigation Measure 4.10-1) need more detail regarding the frequency of monitoring, and specific actions that would be triggered by any protocol violations, as well as information about verification of compliance and the use of specific monitoring actions using measurable water quality metrics. Comment 12-75

The Plant Site Pond Adaptive Management Program (Mitigation Measure 4.10-5) needs to provide additional information regarding: (1) who will oversee and enforce the plan, (2) the threshold water quality parameters for trigging corrective action, (3) timelines for implementing corrective measures, (4) the risks to human health and safety from herbicide use for vegetation management, (5) guidelines for the selection of such herbicides, and (6) measures to handle high testing variability due to seasonal cycles. Comment 12-76

The Plant Site Pond Adaptive Management Program Funding Mechanism (Mitigation Measure 4.10-5) should provide details regarding the amount of funding, and the method of determining whether stabilization has occurred for the purposes of cancelling the funding mechanism.

The Quarry Site Groundwater Adaptive Management Program (Mitigation Measure 4.10-10a) involves monitoring multiple wells across the site, and beyond, which could create logistical challenges. The measure should require the Project Applicant to demonstrate long-term access to offsite wells and further specify contingencies for situations where available data is insufficient. Also, additional data should be provided regarding how quickly a 15% reduction in the water column could realistically occur given the large-scale nature of the Project. Comment 12-77

The Quarry Site Groundwater Adaptive Management Program Funding Mechanism should have a provision for extending the duration beyond three years if the groundwater systems impacted by dewatering take longer than that to stabilize. In addition, this measure should clarify that monitoring and corrective actions will continue indefinitely if groundwater levels do not recover to the baseline levels.

These impacts and mitigation measures, as well as some additional general observations and recommendations are discussed in more detail in the letter dated March 3, 2025 from the Fresno Department of Public Utilities to David Randall, Fresno County Public Works and Planning Department, a copy of which is attached as Exhibit 1 hereto.

c. Chapter 5: Cumulative analysis

The cumulative impact analysis is deficient as it does not include all of the aggregate mining operations that were used to eliminate the VMT impact from off-site hauling trips for the Project. Specifically, it includes only Austin Quarry, and omits Sanger Sand & Gravel, Kings River Sand & Gravel, Madera Quarry, Carmelita Resources, and Riverbend Sand & Gravel. Comment 12-78

In section 4.17, the Draft EIR claims that the Project will contribute 6,683,850 VMTs by Phase 2. (Draft EIR at 4.17-20.) In the individual analysis of the Project, those VMTs are ignored based on the argument that in the absence of the Project, these other mines would

contribute between 8 and 8.6 million VMTs. (Draft EIR at 4.17-23 through 24.) If this is the case, then these projects, taken together, clearly have a significant cumulative impact, and the proposed Project "contributes measurably" to the effect. This is the very definition of a cumulative impact. Comment 12-78 Cont.

Moreover, the CEQA Guidelines state that when a list is used to evaluate cumulative impacts, consideration should be given to the type of project "when the impact is specialized, such as a particular air pollutant or mode of traffic." (CEQA Guidelines § 15130(b)(2).) Here, the VMT analysis already identified similar projects using a particular mode of traffic and creating related and interdependent impacts. Those projects should all be included in the cumulative impact analysis, particularly with regards to transportation, GHG, aesthetics, and air quality analysis.

On page 5-11, the Draft EIR states that SJVAPCD considers a project's individual emissions of criteria air pollutants to be both individually significant and cumulatively considerable it they exceed the applicable significance thresholds. The proposed Project exceeds significance thresholds because the Draft EIR did not include a significant quantity of aggregate mining (30 MT) of fines and mine waste, the stockpiling of the excess mine waste on the Project Site for 100 years, or modeling of VMT impact on threshold criteria. These impacts must be reexamined in the cumulative impact section as well, following the addition of the similar aggregate mining projects. Comment 12-79

The Draft EIR is insufficient in analyzing the cumulative impacts of the Project on air quality. The proposed Project will result in a cumulative impact on PM2.5 because the proposed mitigation for fugitive dust is not adequate to lessen the Project impact to less than significant. The Project's impact is Significant and Unavoidable. The Project has a significant impact on exposing sensitive receptors to dust and odor because not all feasible mitigation has been included in the Project. The Asphalt Plant Emission Controls are not adequate to lessen the exposure to sensitive receptors from dust and odors and results in significant and unavoidable impact. The Project has not included all feasible mitigation to less the adverse impact of the asphalt plant on a substantial number of people. Comment 12-80

d. Appendix B-2: Project Description/Operational Statement

i. Project Need and Economic Impact Comment 12-81

The information provided on Page 6, of Appendix B-2, Project Description/Operational Statement is inaccurate and misleading as to the amount of permitted aggregate mining and processing facilities within the Fresno P-C Region in stating that there is an existing 50-Year permitted capacity of 6.0 MT, but a 50-Year need for 6.1 MT. California Geological Survey, Aggregate Sustainability in California, 2018, Table 1 (attached as Exhibit 5 hereto). Comparison of 50-Year Demand to Permitted Aggregate Reserves for Aggregate Study Area as of January 1, 2017, indicates the Fresno P-C Region has a 305 MT 50-Year Demand, has 556 MT Permitted Aggregate Reserve that results in having 182% of the 50-Year demand. This results in a 6.1 MT 50-Year demand, but the permitted 50-Year aggregate reserve is 11.12 MT. These figures do not

include the Fresno County Carmelita Project's permitted aggregate production of 1.25 MT per year. Comment 12-81 Cont.

e. Chapter 6: Alternative Analysis

The Alternative Analysis prematurely rejected the Reduced Operational Life Alternative. The County found that it would reduce utilization of a known MRZ-2 resource in conflict with Fresno County's General Plan and does not fully meet some of the project objectives." This ignores the possibility (or given the site's history, the virtual certainty) that the Project Owner would seek a further extension of the CUPs upon their expiration. At that time, an environmental review could take place to more accurately analyze impacts taking place far in the future from the present day. Armed with that more accurate analysis, the County could then re-evaluate the continuing need for the mine, and weigh that need against the environmental concerns then prevailing. This would have the additional benefit of allowing the County to consider mitigation measures using technological advancements that have not yet taken place. Comment 12-82

The same deficiency appears in the discussion of alternatives 2-6. Those alternatives should recognize that a limited CUP approval now does not preclude a further expansion or extension of mining following expiration or exhaustion of current limitations. Accordingly, these alternatives could meet the project objectives, but with the benefit of further environmental review and possibly more effective mitigation to be implemented at a later date.

In addition, the analysis of the project alternatives incorrectly states that neither the proposed project nor Alternatives 1, 2, 3, 4, or 5 would result in any significant transportation impacts." (Draft EIR at 6-19, 6-30, 6-38, 6-49, 6-57.) To the contrary, Chapter 4.17 identified significant unavoidable impacts after mitigation, both in terms of signalization and pavement damage. These impacts must be recognized in the discussion of the alternatives. Comment 12-83

6. Conclusion.

For the foregoing reasons, the NOP, NOC, NOA, and Draft EIR all require significant revision, and should be revised and recirculated for public comment.

Sincerely,

TUCKER ELLIS LLP

Douglas A. Hedenkamp
Partner

Enclosures:

Exhibit 1 – Letter dated March 3, 2025 from the Fresno Department of Public Utilities to David Randall, Fresno County Public Works and Planning Department, a copy of which is attached as Exhibit 1 hereto

Exhibit 2 – Fresno County General Plan, Table 2-2, Allowable Uses and Permit Requirements for Agricultural Zones

Exhibit 3 – CUP 2032 Mining Plan cross section.

Exhibit 4 – Hobart M. King, PhD, RPG, "Abandon Mine and Quarry Accidents Claim Several Lives per Year,"

Exhibit 5 - California Geological Survey, Aggregate Sustainability in California, 2018, Table 1, Comparison of 50-Year Demand to Permitted Aggregate Reserves for Aggregate Study Areas as of January 1, 2017.

Exhibit 1

City of FRESNO

Department of Public Utilities

Administration
1626 E Street
Fresno, California 93706
559-621-8600
www.fresno.gov

March 3, 2025

Sent Via Email Only

David Randall
Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capitol Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

SUBJECT: RESPONSE TO THE NOTICE OF AVAILABILITY OF A DRAFT ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE PROPOSED MODIFICATION TO THE EXISTING CEMEX ROCKFIELD QUARRY (EIR NO. 7763 AND UNCLASSIFIED CONDITIONAL USE PERMIT APPLICATIONS NO. 3666 AND NO. 3667)

Dear Mr. Randall:

The City of Fresno, Department of Public Utilities, (DPU) is in receipt of the reissued Notice of Availability, received on January 24, 2025, for the Draft Environmental Impact Report (EIR) for the Proposed Modification to the Existing Cemex Rockfield Quarry (EIR No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667) (Project). The purpose of this response letter is to convey DPU's concerns following review of the EIR Sections 4.10 – Hydrology and Water Quality and 4.19 – Utilities and Service Systems, particularly as they relate to water supply and water quality impacts.

Comment 12-84

BACKGROUND

CEMEX Construction Materials Pacific LLC has submitted applications to Fresno County (County) for two unclassified Conditional Use Permits (CUPs). These applications seek approval to continue and modify existing aggregate mining and processing activities, including the extraction of rock, sand, and gravel, at the Rockfield Quarry. The proposed project encompasses two distinct locations, situated approximately two miles apart:

Comment 12-85

1. Plant Site (approximately 139 acres): Located on the west side of North Friant Road, between North Willow Avenue and Little Dry Creek, approximately 1.2 miles north of the City of Fresno limits. Comment 12-85 Cont.
2. Quarry Site (approximately 352 acres): Located on the west side of North Friant Road, between Bluff Avenue and Lost Lake Road, approximately 2.7 miles north of the City of Fresno limits.

Since 1924, the Plant Site has supported aggregate mining and processing, including an aggregate processing plant, a ready-mix concrete facility, and ancillary operations that also process raw aggregate brought in from the Quarry Site. Mining and processing activities disturb nearly the entire plant site, aside from mandated setbacks along Friant Road. Comment 12-86

At the Quarry Site, permitted for aggregate mining since 1960 (with initial operations dating back to 1913 to 1920 and a later resumption in the late 1980s), mining is focused on the alluvial deposit. There are no processing facilities onsite; instead, raw aggregate is transported approximately two miles south via Friant Road to the Plant Site for processing. Most of the Quarry Site has been extensively mined and disturbed, except for required setbacks along the San Joaquin River and Friant Road. Groundwater or surface water encountered during excavation is pumped either to a reclaimed pond in the northeast corner (the "Northeast Pond") or to recharge trenches along the site's western boundary. Historically, when the Northeast Pond was mined about 20 years ago, water from excavations was pumped to a nearby recharge trench, but following the completion of that excavation, water is now directed to the Northeast Pond for recharge.

The Modification Project is planned in two stages:

- In Stage 1, lasting up to 30 years, operations will continue concurrently at both sites. At the Plant Site, the existing processing plant, ready-mix concrete plant, and related facilities will remain active, with a new modern asphalt plant replacing the outdated unit. Mining will proceed to a depth of about 85 feet below ground surface, with water pumped from excavations to recharge trenches along the site's boundaries. Upon completion, the Plant Site will be reclaimed as 138.5 acres of open space, riparian, and open water wildlife habitat. At the Quarry Site, mining will be modified to extract the underlying hard rock (granite) beneath the alluvial deposit via drilling and blasting to roughly 600 feet bgs while maintaining the Northeast Pond as a groundwater recharge source. A new aggregate processing plant, located in a previously excavated pit about 30 feet bgs, will be added, and wash water will be recycled onsite. Comment 12-87
- In Stage 2, hard rock mining and processing will continue exclusively at the Quarry Site. The ready-mix concrete and hot-mix asphalt plants will be relocated from the Plant Site to the Quarry Site, and once excavation is complete, mining Comment 12-88

and processing equipment will be removed (except for water management infrastructure). The Quarry Site will then be reclaimed as 352.4 acres of open space, riparian, and open water wildlife habitat.

Comment 12-88 Cont.

The City and Project are within the same Kings Subbasin, thus making the Project subject to the objectives of the North Kings Groundwater Sustainability Agency (NKGSA) as imposed by the Sustainable Groundwater Management Act (SGMA).

WATER SUPPLY AND GROUNDWATER USAGE

Plant Site

1. The Applicant holds riparian rights to withdraw water from the San Joaquin River for use in aggregate processing at the Plant Site. River water arrives via a dedicated delivery ditch on the west side of the property. After use in washing rock, sand, and gravel, the process of water now carrying fine sediments, flows to silt ponds, where these fines settle out. The clarified water is then circulated back to the processing plant or used for dust control, with any surplus recharging the underlying aquifer. The water level in the silt ponds fluctuates seasonally based on rainfall and groundwater levels, and new ponds may be formed as mining operations shift across the site. Current usage of river water for processing totals approximately 295 acre-feet per year.

Comment 12-89

2. Current Groundwater Usage
    - The Plant Site supports aggregate mining and processing, including a ready-mix concrete facility and ancillary operations.
    - Water usage primarily involves low-volume pumping for operational needs such as equipment wash-down, dust control, and limited dewatering if shallow groundwater is encountered during excavation (although much of the site is already heavily disturbed).
    - Existing practices indicate that most onsite water demand is met with minimal groundwater pumping, supplemented by any necessary surface water management.
3. Proposed Groundwater Usage (Stage 1 and Transition to Stage 2)
    - During Stage 1, the existing processing plant and ready-mix facility remain at the Plant Site, with groundwater usage continuing at levels similar to current operations (e.g., equipment washing, dust control).
    - A new asphalt plant will replace the outdated one, but no substantial increase in groundwater extraction is anticipated, as pumping volumes are projected to remain low and used efficiently.

- By Stage 2, once mining ceases at the Plant Site, the ready-mix and asphalt plants relocate to the Quarry Site, substantially reducing or eliminating most groundwater usage at the Plant Site.
- Ultimately, the Plant Site will be reclaimed, thereby further decreasing any groundwater withdrawals. By Stage 2, once mining ceases at the Plant Site, the ready-mix and asphalt plants relocate to the Quarry Site, substantially reducing or eliminating most groundwater usage at the Plant Site.
- Ultimately, the Plant Site will be reclaimed, thereby further decreasing any groundwater withdrawals.

Comment 12-89 Cont.

Quarry Site

1. No surface water from the San Joaquin River is used at the Quarry Site. Instead, the site relies on the Northeast Pond, a permanent water body located in the northeastern portion of the property that functions as a dedicated groundwater recharge feature. By allowing water to percolate into the underlying aquifer, this pond plays an important role in maintaining local groundwater levels. Beyond the Northeast Pond, several additional ponds have formed over time due to historical and ongoing mining activities. These are typically seasonal or temporary features, receiving water primarily from rainfall runoff and shallow groundwater inflows. Their size and shape may vary seasonally and in response to quarrying operations. If standing water in these ponds impedes active mining, it can be pumped out to facilitate continued excavation. As the quarry expands into new areas, freshly excavated depressions may accumulate water, creating new temporary ponds.

Comment 12-90

2. Current Groundwater Usage
    - Historically, mining at the Quarry Site has been focused on alluvial deposits. Dewatering activities are limited to pumping water from active excavation areas to a recharge pond (the "Northeast Pond") or to recharge trenches along the site boundary.
    - These small-scale pumping efforts are designed to manage water levels within the excavation while reintroducing excess water to the local aquifer system via recharge features.
    - There are no active large-volume production wells at the Quarry Site for processing or potable use.

Comment 12-90 Cont.

3. Proposed Groundwater Usage (Stage 1 and Stage 2)

- In Stage 1, mining will expand to underlying hard rock (granite), requiring continued dewatering of excavation areas. However, this water will again be recycled or returned to recharge ponds or trenches, minimizing net groundwater consumption.
- A new aggregate processing plant will be constructed in a previously mined pit (approximately 30 feet below ground surface), using wash water that is largely recycled onsite. Any groundwater usage is expected to remain limited to operational needs such as drilling, dust control, and equipment cleaning.
- In Stage 2, full-scale hard rock mining continues, and the ready-mix and asphalt plants relocate from the Plant Site to the Quarry Site. Groundwater demand may shift onsite but overall remains modest, given the emphasis on water recycling and on pumping water primarily for dewatering and dust control.
- Ultimately, upon mine closure, the Quarry Site is to be reclaimed as open space and habitat, at which point groundwater pumping would cease, apart from possible minimal flows needed to maintain water features for reclamation purposes.

The existing and proposed water use was summarized in Table 4.19-1, which is reproduced below:

	Project Phase				Change from Existing Conditions		
Source	Existing	Stage 1	Stage 2	Reclamation	Stage 1	Stage 2	Reclamation
Plant Site							
San Joaquin River	295	125	0	0	-170	-295	-295
Groundwater Supply Wells	35	60	0	0	25	-35	-35
Reclamation Period Evaporation and Evapotranspiration	0	0	440	440	0	440	440
Plant Site Total:	**330**	**185**	**440**	**440**	**-145**	**110**	**110**
Quarry Site							
Groundwater Supply Wells	0	1	55	0	1	56	0
Water Use from Ponded Pits	440	465	495	0	24	55	-440
Reclamation Period Evaporation and Evapotranspiration	0	0	0	585	0	0	585
Quarry Site Total:	**440**	**465**	**550**	**585**	**25**	**111**	**145**
Project Total:	**770**	**650**	**990**	**1,025**	**-120**	**220**	**255**

Available of water vs. the proposed water use was summarized in Table 4.19-2, which is reproduced below:

Comment 12-90 Cont.

Site	Water Source	Existing	Stage 1	Stage 2	Reclamation
Plant Site	Rainfall, groundwater inflow, silt pond, deep seepage	420	865	600	440
Quarry Site	Rainfall, groundwater inflow from alluvial & weathered rock, seepage from recharge ditch & NE Pond	635	675	715	600
	Total Availability for Both Sites:	1,055	1,540	1,315	1,040
	Total Water Use:	770	650	990	1,025
	Total Availability vs. Total Use:	+285	+890	+325	+15

HYDROLOGY AND WATER QUALITY

Plant Site Hydrogeologic Setting

Comment 12-91

Groundwater monitoring at the plant site is currently conducted in four shallow alluvial wells. These wells were installed in 2018 and extend from approximately 96 to 116 feet below ground surface (bgs). The alluvial deposits at this location typically consist of unconsolidated materials such as sand, silt, clay, and gravel, which can provide a relatively shallow groundwater pathway. Based on the data collected to date, groundwater flow in the shallow alluvial aquifer at the plant site generally trends toward the south-southwest.

Quarry Site Hydrogeologic Setting

Groundwater at this site is found in three distinct geologic units: alluvium, weathered rock, and hard rock. Each unit has different physical and hydrogeologic characteristics, which influence both the depth of the wells and the direction of groundwater flow.

1. Alluvium (Shallow Wells)
    - The alluvial deposits consist of unconsolidated materials such as sand, silt, clay, and gravel.
    - Four wells are currently completed in the alluvium, each less than 30 feet deep.
    - These shallow wells are identified by an "S" at the end of their well number (e.g., Well 1S).
2. Weathered Rock (Intermediate Wells)
    - Beneath the alluvium lies a layer of partially decomposed or weathered bedrock.
    - Four wells are screened within the weathered rock at depths generally

between 40 and 70 feet.

Comment 12-91 Cont.

- These are labeled with an "M" after the well number (e.g., Well 2M).

3. Hard Rock (Deep Wells)
    - The deepest geologic unit comprises unweathered (competent) bedrock.
    - Seven wells—designated with a "D" (e.g., Well 3D)—are drilled into this hard rock formation, reaching depths of approximately 600 feet.

Based on current hydrogeologic data, groundwater flow in the shallow (alluvial) wells is predominantly toward the south and southeast. In the weathered rock wells, flow is also generally toward the southeast.

Groundwater sampling at the Quarry Site's groundwater monitoring wells occurred in 2018, 2019 and then a more comprehensive groundwater sampling event occurred in September and October 2021.

POTENTIAL IMPACTS NOT DISCUSSED IN EIR

Comment 12-92

1. Potential alteration to natural groundwater flow characteristics

Currently, "the depth of groundwater across the Quarry Site has been measured as varying from about 10 to 45 feet bgs" (page 4.10-37) while, for the Plant Site, "the depth to groundwater varies from about 10 to 40 feet bgs" (page 4.10-34). The Project involves extensive mining below the existing groundwater levels, hundreds of feet in the case of the Quarry Site, which requires continuous dewatering of the mines. The applicant has emphasized that groundwater usage in Phase 1 and Phase 2 will be relatively similar to existing conditions. However, the continuous dewatering of the mines and subsequent recharge of that water into onsite ponding basins may result in the movement of the water from deeper, potentially confined aquifers to the shallower, unconfined aquifer. Many of the City wells in the northern portion of the City draw water from the deeper, confined aquifers, and continuous dewatering of mines in the vicinity of those confined aquifers may reduce water availability for those wells. As such, there needs to be a greater understanding of the volume of water expected to be dewatered from the mines over both Phase 1 and Phase 2, whether the volume changes seasonally or annually, and if the water recharged onsite is able to reach those deeper aquifers.

2. Mobilization of naturally occurring constituents

Comment 12-93

The EIR seemed to de-emphasize the potential impact of mobilizing naturally occurring constituents, including arsenic, iron, lead, and manganese. Based on the water quality data shown in Table 4.10-3, continuous aggregate processing with recycled silt pond water appears to release and concentrate the naturally occurring constituents in the silt ponds. There was no discussion of whether the silt pond was lined nor of any water

treatment associated with the silt ponds, so it was assumed that all the silt pond water freely percolates into the groundwater aquifer. The newly mobilized constituents appear to have impacted multiple monitoring wells throughout the Plant site in the vicinity of the silt pond, as shown in Table 4.10-5. Elevated iron and/or manganese was detected from the monitoring wells on the following dates:

Comment 12-93 Cont.

Constituent	Units	MW-2	MW-3		MW-4	sMCL
		8/9/18	10/17/18	8/28/19	10/24/18	
Iron	µg/L	530	<30	2,600	<30	300
Manganese	µg/L	790	2,600	1,030	300	50

There did not appear to be any elevated concentrations of arsenic or lead.

The explanation provided in the EIR was unsatisfactory. It stated, "However, the iron and manganese concentrations vary substantially between sampling events. Thus, the occasional elevated levels of iron and manganese identified in some of the samples from Plant Site wells MW-2, MW-3, and MW-4 most likely represent naturally occurring concentrations in suspended solids within the samples and may be the result of variability in sampling procedures" (page 4.10-42).

Comment 12-94

The EIR did not consider the possibility that concentrated and mobilized iron and manganese from the silt ponds infiltrated into the groundwater, thus triggering the extremely high concentrations that well exceed background levels. Furthermore, the variability in the concentrations detected are likely a result of operational factors such as when the silt pond is filled or not, whether water is being actively used for aggregate processing and being discharged back to the silt pond, and the groundwater level at the time of the sampling, with higher groundwater levels likely leading to a reduced time of travel from the silt ponds to the monitoring wells.

Comment 12-95

Furthermore, the EIR appears to be dismissive of the potential health implications of elevated manganese concentrations. During the discussion of Impact 4.10-4, it stated, "Iron and manganese concentrations showed high variability and exceed their respective Basin Plan standards and secondary MCL standards in some of the samples collected. Note that Basin Plan standards for iron and manganese are the same as the secondary MCL standards (300 µg/L for iron and 50 µg/L for manganese)...The secondary MCL standards are established as a threshold above which constituents may impart undesirable tastes and odors, or can cause staining and scaling, but do not pose a health threat. Therefore, the exceedance of the secondary MCL standards for iron and manganese concentrations in some of the samples collected does not pose a risk to human health" (page 4.10-94).

Comment 12-96

It appears the analysis did not take into consideration the recent California legislation introduced to require a maximum contaminant level (MCL) for manganese. Comment 12-97

On March 29, 2022, Senate Bill 1124 (SB 1124) was revised to the "Public health goal: primary drinking water standard: manganese" bill with the following requirements:

- On or before July 1, 2023, the Office of Environmental Hazard Assessment (OEHHA) is to prepare a public health goal for manganese.
- The State Water Resources Control Board (SWRCB), after OEHHA publishes a public health goal for manganese, is to adopt a primary drinking water standard for manganese and to establish monitoring requirements for manganese.
- On or before January 31, 2024, the SWRCB is to consider establishing a notification or response level for manganese that would remain in place until the state board adopts a primary drinking water standard for manganese.

In a letter from the Director of the CalEPA Office of Environmental Health Hazard Assessment to the Deputy Director of the SWRCB Division of Drinking Water[1], it states, "In response to your request dated April 7, 2022, the Office of Environmental Health Hazard Assessment (OEHHA) has reviewed the recommendation for a revised notification level (NL) for manganese developed by the Division of Drinking Water (DDW) scientific staff. Based on the potential risk for manganese induced neurotoxicological effects in bottle fed infants, DDW staff recommended a health protective concentration (HPC) of 20 µg/L, equivalent to 20 parts per billion (ppb), to serve as the basis for future recommended revisions to the current manganese notification and response levels of 500 µg/L and 5,000 µg/L, respectively. Based on a review of the information presented, OEHHA agrees with an HPC of 20 µg/L as the basis for the NL. OEHHA also suggests some additional steps, as outlined below, for future work on developing an HPC for manganese".

As such, the EIR should now consider the consequences of how the concentration and mobilization of manganese in the water infiltrating from the silt ponds will impact downstream communities, including the City of Fresno, in light of a notification level and potential MCL for manganese being set at the HPC of 20 µg/L.

Furthermore, as the bedrock is fractured over the course of mining operation, it is possible that the infiltration from the manganese laden silt basins will find a preferential path into deeper aquifers. Therefore, the EIR must also consider the potential wider spread mobilization of the manganese with future mining activities. Comment 12-98

[1] Available at: https://oehha.ca.gov/sites/default/files/media/mn_nl_recommendation_050322.pdf

RECOMMENDATIONS FOR EIR MITIGATION MEASURES

Comment 12-99

With the impacts already detailed in the EIR, along with the additional impacts raised in this letter, the City of Fresno strongly recommends that the mitigation measures consider the following:

Impact 4.10-1: Violate Surface Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface Water Quality at the Plant Site or Quarry Site During Mining and Reclamation

Mitigation Measure 4.10-1: Blasting Protocols

- **Implementation Details:** While it is great that the protocol will be appended to the Mitigation Monitoring and Reporting Program, more detail on specific measures (e.g., frequency of monitoring or specific actions triggered by protocol violations) could help ensure clarity in enforcement.
- **Enforcement Mechanisms:** How will compliance with the protocols be verified? Including specific monitoring or reporting actions that link back to measurable water quality metrics (e.g., turbidity during blasting) might improve transparency.

Impact 4.10-5: Violate Groundwater Quality Standards or Otherwise Substantially Degrade Groundwater Quality at the Plant Site due to the Ponding of Water in the Excavation

Comment 12-100

Mitigation Measure 4.10-5a: Plant Site Pond Adaptive Management Program

- **Monitoring:** Identify who is overseeing and enforcing the adaptive management plan.
- **Threshold Clarity:** While the thresholds for various water quality parameters (e.g., pH, DO) are provided, it would be helpful to have more specific guidance on the thresholds for corrective action (beyond simply exceeding action levels) and timelines for implementing corrective measures.
- **Possible Risks from Vegetation Removal:** As described in the text of the EIR, "Elevated iron and manganese levels are common in and around reclaimed mining excavations that have filled with water because decaying vegetation on the bottom of ponds can create oxygen-deficient, or reducing, conditions. The reducing conditions mobilize naturally occurring iron and manganese from within the silts and other sediments present at the bottom of the reclaimed mining excavations" (Page 4.10-95). As such, vegetation removal is needed to reduce the mobilization of iron and manganese. However, the use of herbicides to manage vegetation could be problematic should chemicals used in the treatment of the vegetation

Comment 12-100 Cont.

pose risk to human health. As such, the mitigation measure should provide proper guidelines for the selection of chemicals used in the vegetation removal, should it be needed.

- **Seasonal Variability:** There is a commitment to testing iron and manganese levels after seasonal cycles, but further clarity on how to handle high variability due to weather or seasonal changes (e.g., during wet or dry seasons) would ensure more accurate interpretation of data.

Mitigation Measure 4.10-5b: Plant Site Pond Adaptive Management Program Funding Mechanism

Comment 12-101

- **Clarity on Funding Amounts:** The measure states that the funding must be "sufficient," but no details are provided on what constitutes a sufficient amount. Providing more specific estimates based on monitoring costs would help ensure that the funding is adequate for long-term mitigation needs.
- **Mechanism Termination Criteria:** The conditions under which the funding mechanism is canceled (after five years of stabilization) are clear. However, it might be helpful to specify how "stabilization" will be definitively determined, especially in the case of ongoing water quality issues that could be challenging to resolve quickly.

Impact 4.10-10: Substantially Decrease Groundwater Supplies During Mining Operations and After the Completion of Reclamation at the Quarry Site such that the Project Could Interfere with Existing Groundwater Supply Wells

Comment 12-102

Mitigation Measure 4.10-10a: Quarry Site Groundwater Adaptive Management Program

- **Complicated Monitoring Locations:** The program involves monitoring multiple wells across the site and beyond (including private wells), which could create logistical challenges. Ensuring access to private wells or finding reliable substitutes for unmonitored areas might be difficult. It may be helpful to demonstrate long-term access to offsite wells and to further specify contingencies for situations when monitoring data is insufficient.
- **Threshold for "Significant Impact":** While the 15% reduction in water column is conservative, additional data might be needed on how quickly such impacts could realistically occur under various environmental conditions, especially given the large-scale nature of the Project.

Mitigation Measure 4.10-10b: Quarry Site Groundwater Adaptive Management Program Funding Mechanism

Comment 12-103

- **Post-Mining Monitoring Duration:** While three years is a reasonable duration, the groundwater systems impacted by dewatering could take longer than three years to fully stabilize. Extending the duration of monitoring or specifying the criteria for extending monitoring if needed would strengthen this mitigation. Comment 12-103 Cont.
- **Monitoring after Mining:** It would be helpful to clarify if monitoring and corrective actions would continue indefinitely if groundwater levels do not recover to baseline levels. The mechanism should account for this possibility without having to revise it at every stage of the process.

General Recommendations:

- **Observance of North Kings Groundwater Sustainability Plan**: As a Project within the NKGSA, the applicant is required to observe all North Kings Groundwater Sustainability Plan guidelines. Should there be a negative impact on neighboring domestics wells, the financial costs for the mitigation shall be entirely borne by the applicant. Comment 12-104
- **Need for Current Groundwater Quality Data:** The most recent groundwater quality data was collected in 2021, which may not accurately reflect current conditions, particularly following recent wet and drought periods that can alter aquifer chemistry and water levels. Collecting and analyzing new data before the planned expansion begins will provide a more reliable baseline for understanding current conditions and monitoring any future changes linked to mining activities. Additionally, it may be beneficial to collect water quality samples during active operation as well as when there is a prolonged pause in operation to better establish a no operation baseline and current impacts from active operation. Comment 12-105
- **Groundwater Well Sampling Program:** While discussed, it is recommended to develop and implement a structured, recurring groundwater sampling program focused on monitoring water quality at strategically selected wells located both upgradient and downgradient of the Quarry and Plant Sites. This program should include: Comment 12-106
    1. **Key Parameters:** Electrical conductivity, dissolved oxygen, oxidation-reduction potential, and manganese levels
    2. **Flexibility for Additional Parameters:** The program should be designed to incorporate other water quality indicators as necessary. These additional parameters might be recommended by regulatory agencies, the City or County, or other stakeholders to address emerging concerns or site-specific conditions.
- **Consistent Sampling Schedule:** To detect trends or anomalies in a timely manner, sampling events should be conducted at regular intervals, such as Comment 12-107

monthly. Adhering to a predictable schedule will enhance the reliability of trend analyses, enable early identification of potential issues, and support proactive decision-making regarding any necessary mitigation or operational adjustments. Comment 12-107 Cont.

- **Adaptive Management:** If data indicates any significant changes in groundwater quality, implement appropriate mitigation measures (e.g., adjustments to surface water management practices, enhanced water treatment) in consultation with regulatory agencies and other stakeholders. Additionally, as the site conditions evolve, continue to refine the groundwater well sampling program to ensure ongoing protection of downgradient groundwater users. Comment 12-108
- **Enhanced Reporting Transparency:** Across the mitigation measures, ensuring clear and accessible reporting (e.g., publicly available monitoring reports) would help build trust with stakeholders. Comment 12-109
- **Third-Party Reviews:** While third-party oversight for funding is mentioned, adding independent review of the environmental data and mitigation effectiveness would further strengthen the integrity of these programs. Comment 12-110
- **Contingency Planning:** Developing more explicit contingency plans for situations where the monitoring and mitigation measures fail to resolve issues within the prescribed timeframes would help prevent prolonged environmental impacts. Comment 12-111

Should you have any questions, feel free to contact Peter Maraccini by email at Peter.Maraccini@Fresno.gov or by telephone at (559) 621-1603.

Sincerely,

Brock D. Buche, PE, PLS
Director of Public Utilities

cc: Anthony White, MBA, Assistant Director
Paul Amico, PE, Assistant Director
Peter A. Maraccini, PE, PhD, PMP, Licensed Engineer Manager
Dejan Pavic, PE, Projects Administrator
Debbie Khounsavath, Planner

Exhibit 2

TABLE 2-2
ALLOWABLE USES AND PERMIT REQUIREMENTS FOR AGRICULTURAL ZONES

Land Use[1]	Permit Requirement by Zone[2]				
	AE	AL	A-1[3]	A-2[3]	See Section
Agricultural Uses					
Agricultural Accessory Storage, Structures, and Uses	P	P	P	P	
Agricultural Commercial Center	C		C		834.4.040
Agricultural Processing, Area Products, including Cooperatives	C		C		
Agricultural harvesting, curing, processing, packaging, packing, sales, shipping for products produced on-site (i.e., not subject to Section 834.4.390).	P	P			
Agricultural processing, packaging, sales, shipping, etc. (products may be from on- or off-site holdings when owned by the same entity as the facility.	P	P			834.4.390
Animal Raising, Specialty Commercial	D		D	D	834.4.050
Animal Uses (includes fish and fur bearing in the A-2)	P	P	P	P	834.4.050
Aquaculture (includes Fish Farms, Commercial)	D	D	D	D	
Cattle Dairies and Feedlot Facilities (Does **NOT** exceed a capacity of 500 cattle)	D		D		834.4.110
Cattle Dairies and Feedlot Facilities (Does exceed a capacity of 500 cattle)	C		C		834.4.110
Crop Production	P	P	P	P	
Grain Elevators, Commercial	C		C		

Key to Permit Requirements

Symbol	Applicable Process	See Chapter
P	Permitted use	
C	Conditional Use Permit required	842.5
D	Director's Review and Approval required	846.5
TUP	Temporary Use Permit required	858.5
Blank	Use not allowed	

Notes:

1 See Article 7 for definitions of the land uses listed.

2 For any land use listed as permitted (P), a Director approved Site Plan Review Permit may be required for construction activities (e.g., additions, alterations, construction, reconstruction, or remodeling) in compliance with Chapter 854.5 (Site Plan Review).

3 See Section 806.2.030.C for Obsolete and Deleted Zones.

TABLE 2-2
ALLOWABLE USES AND PERMIT REQUIREMENTS
FOR AGRICULTURAL ZONES (Continued)

Land Use[1]	Permit Requirement by Zone[2]				
	AE	AL	A-1[3]	A-2[3]	See Section
Agricultural Uses (Continued)					
Hog/Swine Personal Use (4 max.)	P				834.4.050
Hog/Swine, Sheep, or Goat Feed Lots	C		C		
Hog/Swine Ranches	C		C		834.4.050
Horticulture/Greenhouses	P	D	P	D	
Meat Processing, Commercial	C		C		834.4.230
Mushroom Growing	C	C	C		
Mushroom Growing, Incidental	C	C	C		
Poultry Raising, Large	D		D	D	834.4.290
Poultry Raising, Small	P		P	P	834.4.290
Poultry/Rabbit Processing	C		C		
Stock Yards/Feed Lots	C		C	C	
Value-added agricultural uses in addition to agricultural harvesting, curing, processing, packaging, packing, sales, and shipping for products produced on-site.	P				834.4.390
Commercial establishments for the processing of agricultural products and value-added uses not authorized under the by-right value-added uses above.	C				834.4.390
Wineries/Distilleries, Large	C		C	C	
Wineries/Distilleries, Small	D		D	D	834.4.410
Wholesale Limited Winery Distillery and Brewery	P	P			834.4.415
Micro Winery, Distillery and Brewery	P	P			834.4.415
Minor Winery, Distillery and Brewery	P	P			834.4.415
Agricultural Sales and Service Uses					
Agricultural Chemicals, Sales and Service	C		C		
Agricultural Auction /Sales Yards	C		C	C	
Building Materials Sales	C		C		
Commercial Dehydration Operations	C		C		
Contactors Storage Yard, Agricultural Services	D		D		
Dog Grooming (in conjunction with single-family residence)	D	D	D	D	

Farm Equipment and Machinery Sales, Rental, Storage and Maintenance	C		C		
Farm Labor Contractor Services	D		D		

Key to Permit Requirements

Symbol	Applicable Process	See Chapter
P	Permitted use	
C	Conditional Use Permit required	842.5
D	Director's Review and Approval required	846.5
TUP	Temporary Use Permit required	858.5
Blank	Use not allowed	

Notes:

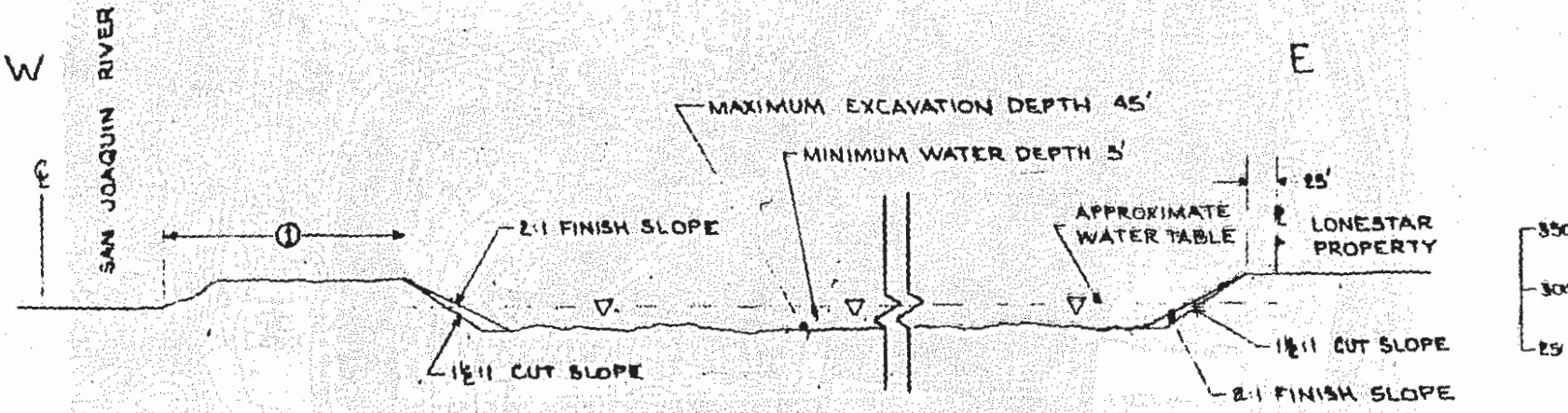
1 See Article 7 for definitions of the land uses listed.

2 For any land use listed as permitted (P), a Director approved Site Plan Review Permit may be required for all construction activities (e.g., additions, alterations, construction, reconstruction, or remodeling) in compliance with Chapter 854.5 (Site Plan Review).

3 See Section 806.2.030.C for Obsolete and Deleted Zones.

Exhibit 3

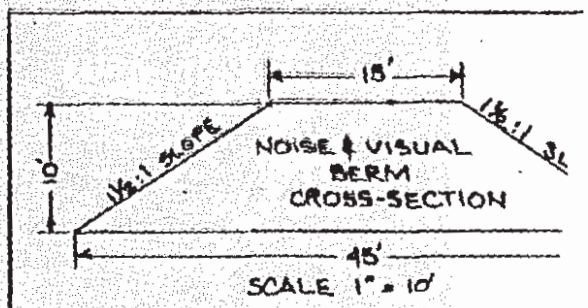
MINING PLAN



TYPICAL E-W CROSS SECTION

SCALE 1" = 100'

① 200' SETBACK FROM EXISTING STREAM CHANNEL OR 20' SETBACK FROM THE RECLAMATION BOARD'S EXISTING DESIGNATED FLOODWAY, WHICHEVER IS FURTHER FROM THE RIVER BANK.



LONESTAR IND. INC.	DATE 4/25/84	DRAWN BY PI

DRAWING NO. 3551

Exhibit 4

Abandoned Mine and Quarry Accidents Claim Several Lives per Year

Most of the victims are young and went to the quarry to swim or ride an ATV.

Article by: Hobart M. King, PhD, RPG

Dangerous Places!

Abandoned mines and quarries are dangerous places! In a typical year, several people die in accidents that occur in abandoned mines across the United States. Some of these deaths can be prevented if citizens know the danger of these properties; if landowners make better efforts to warn and limit access; and, if governments have improved programs for reclaiming or regulating them.

Don't swim in quarries!
Drowning is the leading cause of death in abandoned mines and quarries.

If you are a mineral collector, hiker, recreational vehicle rider, swimmer, or curious person, you have no business entering an abandoned or inactive mine or quarry. In almost every instance, you will be trespassing because abandoned mines and quarries are almost always on private property.

Abandoned mine structure: Structures at abandoned mine sites are often dangerous and unstable. They can also house dangerous chemicals or explosives. Stay out of these structures. Bureau of Land Management image.

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Where Do Fatalities Occur?

Deaths in abandoned and inactive mines occur across the United States. Many of them occur in the eastern coal fields, the sand and gravel quarries of the upper Mississippi Valley, limestone quarries in the southeast, or the metal

Abandoned or Inactive Mine Fatalities

Categories
Diamonds
Earthquakes
Fossils
Gemstones
General Geology
Geologic Hazards
Geology Dictionary
Geology News
Geology.com Store
Gold
Landslides
Metals
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mines in the southwest. Deadly accidents can happen in any type of abandoned mine or quarry. Stay out!

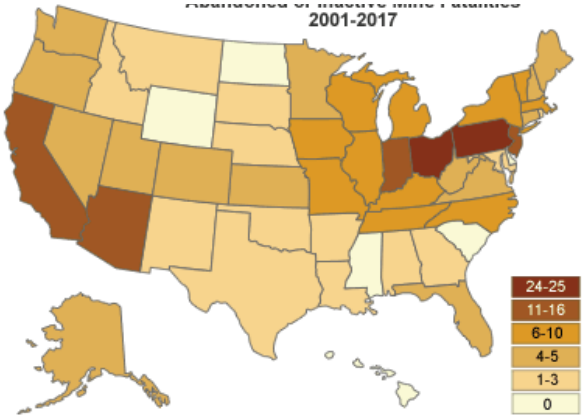
Drowning is the Leading Cause of Death

Drowning is the number one cause of death in abandoned mines. Most people involved in this type of accident went to a quarry for swimming. Quarries are extremely dangerous places to swim. Steep drop-offs, deep water, sharp rocks, flooded equipment, submerged wire, and industrial waste make swimming risky.

Another risk factor is the very cold water. Many quarry operations excavate to depths below the water table and use pumps to keep the mine dry while it is in operation. When mining stops, the pumps are turned off and the quarry floods by the inflow of cold groundwater. This groundwater inflow can keep the quarry water very cold even in late summer.

Jumping or falling into cold water can be fatal - even for a young healthy person. Here is a quote from the **National Institute of Health** on how a body responds to sudden immersion in cold water...

> *A fall in skin temperature elicits a powerful cardiorespiratory response, termed "cold shock," comprising an initial gasp, hypertension, and hyperventilation despite a profound hypocapnia. [...] The respiratory responses to skin cooling override both conscious and other autonomic respiratory controls and may act as a precursor to drowning.*



Abandoned mine fatalities map: Deaths in abandoned and inactive mines occur across the United States. Many of them occur in the eastern coal fields, the sand and gravel quarries of the upper Mississippi Valley, and metal mines in the southwest. Image by Geology.com using data from newspaper articles and the **Mine Safety and Health Administration**. Examples of newspaper articles are provided at the bottom of this article.

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Don't Go Swimming in a Quarry

Most deaths that occur in abandoned mines and quarries are drownings. Most of the people who drown didn't fall in by accident. They went there to swim. Don't swim in a quarry. The water can be dangerously cold, there are no lifeguards, no rescue equipment, and it is simply not safe.

Deaths Per State (2001-2017)	
Ohio	25
Pennsylvania	24
California	16
Indiana	12
New Jersey	12
Arizona	11
Illinois	10
Tennessee	10
Iowa	9

Abandoned Mine Fatalities per Year	
2017	7
2016	5
2015	10
2014	5
2013	4
2012	15
2011	5
2010	20
2009	13

ATV Accidents

ATV accidents are the second leading cause of death. Quarries and surface mines are dangerous places to ride an ATV. Riders unfamiliar with the quarry can speed over a quarry's high wall or embankment. Death can result when an ATV is driven too close to a high wall and the rock, previously fractured from blasting, collapses from vibrations or weight. ATV riders have been killed by driving into wire fences at high speeds and losing control on gravel or sand-covered surfaces.

ATV accidents are the second leading cause of death in abandoned mines and quarries.

Falls and Asphyxiation

Falls are also deadly. Rock climbing in a mine or quarry is especially dangerous. The rock of a high wall or a mine has been fractured by blasting and can be highly unstable. The rocks that the climber depends upon for support can break free, or the climber's weight can destabilize an entire face of rock. Falls also occur in underground mines when the victim walks across rotted timbers covering a vertical shaft or steps over a ledge while negotiating a dark area.

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Massachusetts	9
Missouri	9
Wisconsin	9
Kentucky	8
North Carolina	8
New York	7
Michigan	6
Vermont	6
Alaska	5
Colorado	5
Florida	5
Kansas	5
Minnesota	5
New Hampshire	5
Oregon	5
Utah	5
Virginia	5
Connecticut	4
Maine	4
Nevada	4
Washington	4
West Virginia	4
Nebraska	3
Oklahoma	3
Alabama	2
Arkansas	2
Georgia	2
Louisiana	2
Maryland	2
Idaho	1
Montana	1
New Mexico	1
Rhode Island	1
South Dakota	1
Texas	1
Delaware	0
Hawaii	0
Mississippi	0
North Dakota	0
South Carolina	0
Wyoming	0

2008	21
2007	21
2006	24
2005	28
2004	29
2003	23
2002	27
2001	21
Total	278

Causes of Fatalities (2001-2017)

Drowning	201
ATVs	23
Fall	24
Other	21
Asphyxiation / Suffocation	9
Total	278

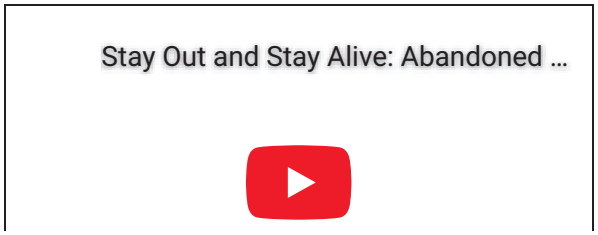
Fatalities by Age (2001-2017)

Age	Number
0 - 10	7
11 - 20	100
21 - 30	74
31 - 40	32
41 - 50	33
51 - 60	14
61 - 70	7
71 - 80	3
81 - 90	1
Unknown	7
Total	278

Fatalities by Gender (2001-2017)

Male	255
Female	23

Where Did This Data Come From? The data used to create the tables and map on this page was obtained from newspaper articles that we encountered in our daily readings and website reports complied by the Mine Safety and Health Administration. The actual number of fatalities is, without any doubt, higher than the numbers shown in the tables and on the map.



Asphyxiation typically happens in underground mines. These mines can contain dangerous gases or have low levels of oxygen. Some victims have not realized that they were inhaling dangerous air until it was too late. Other causes of death include electrocution, passage collapse, and rockfalls.

Stay Out and Stay Alive: Abandoned Mine Safety. Video produced by the Office of Surface Mining Reclamation and Enforcement.

Why No Reclamation?

Today all mining operations must be reclaimed when work is completed. Miners are expected to return the land to a condition similar to before the mining was done - or in an alternative condition specified in their approved mining permit.

To assure that reclamation is done, the mining company must post a performance bond. The bond money is used to reclaim the land if the mining company goes bankrupt or fails to reclaim the land as required. Sometimes there is not enough bond money to complete the reclamation work, and that work goes undone.

Many abandoned mines were closed long before permitting and bonds were required. The responsibility to reclaim these mines can fall to the current property owner or to the government. Reclamation is expensive, so many of these jobs have not been completed.

Equipment, Structures, and Mine Openings

The buildings, structures, and equipment left at abandoned mines are also dangerous. The buildings and structures can be old and unstable. Floors can collapse when they are walked on. Supports can be rusted away. Chemicals, explosives, or electrical equipment and other dangers are sometimes left inside. Don't explore equipment and structures at abandoned mines.

Abandoned iron processing facility in England: The abandoned mines problem is not confined to the United States. Open pits, underground mine entries, mineral processing facilities, and other abandoned works can be found in all parts of the world. The photo above is of an abandoned iron processing facility in North Yorkshire, England. Photograph copyright iStockphoto / PaulaConnelly.

Underground mines are especially dangerous. They are dark inside, have loose rocks on the walls and roof, and there can be deep shafts and tunnels concealed by rotten wood covers. Underground mines are often used as homes by bats, bears, snakes, and other dangerous animals.

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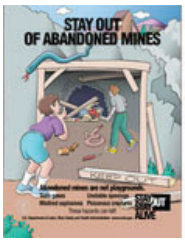
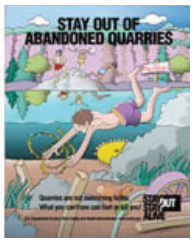
People of All Ages Are Killed

Abandoned mine accidents claim the lives of people of all ages. Children sometimes enter mines without supervision, and adults sometimes take children with them when entering an abandoned mine site. A table on this page shows the age distribution of abandoned and inactive mine deaths. Most victims are young and die by drowning. Older victims die from a variety of causes.





MSHA educational books: The "Fatalities by Age" chart on this page shows that young people account for most of the fatal accidents. The **Mine Safety and Health Administration** has produced educational materials appropriate for school-age children.

If You Know of An Abandoned Mine...

Dangerous mining sites should be reported - especially if you know that there are dangerous activities going on there. You can start by reporting to your local police. Another good place to report is the **Office of Surface Mining's contact list**.

Spread the Word!

Help educate people in your area about the dangers of abandoned mines. One life saved is worth a lot of effort.

Where Did This Data Come From?

The data used to create the tables and map on this page was obtained from newspaper articles that we encountered in our daily readings and website reports complied by the Mine Safety

The victims range in age from preschool children to an 85-year-old mining veteran.

News articles about fatal non-employee mine accidents

Columbus Teen Drowns in Marion's Quarry Park: NBC4 Staff; WCMH-TV Columbus; 05/20/2017

Teen Dies After Diving From Florida Lime-Rock Mining Quarry: U.S. News & World Report; 07/12/2017

Update: MCSO Names Tampa Teen Recovered From Quarry: Austin L. Miller; GateHouse Media; 05/28/2017

Teen Who Drowned After Swimming in Berkeley County Quarry is Identified: Katiann Marshall; Herald-Mail Media; 06/11/2017

Body Pulled From Quarry in Mays Landing: Vincent Jackson; The Press of Atlantic City; 06/12/2017

Police identify Kingsport Man Who Drowned at Fort Dickerson Park Quarry: USA Today Network - Tennessee; 09/18/2017

Quarry Drowning Victim Identified: WBIR Staff; WBIR-TV; 06/19/2017

Cocke County Sheriff's Office Investigating Accidental Drowning: WVLT TV; 05/28/2016

Howell Man Who Died During Pa. Quarry Swim Identified: Karen Wall; Patch Media; 07/18/2016

Surry Man Pulled From Sullivan Quarry Last Week Has Died: Ryan McLaughlin; Bangor Daily News; 07/25/2016

Mine Search Ends Without Finding Missing Man: Chris Lawrence; Metro News; 09/02/2016

Police Positively ID Body Recovered From VT Quarry as Missing Woman Hadil Marzoug: Lindsay Nielsen and Samantha DiMascio; News10 ABC; 12/19/2016

Wife Finds Husband's Body in Mine Shaft, Utah Officials Investigating Cause of Death: Zach Whitney; Fox13 Salt Lake City; 01/09/2015

Westerly Man Dies After Falling 80+ Feet Into Quarry: Neil Remiesiewicz; WPRI 12; 05/25/2015

2 Chickasha Teens Drown in Caddo County Rock Quarry: Jonathan Greco; KOCO News 5; 06/13/2015

Body Found at Flooded Quarry in Robeson Township: Steven Henshaw; Reading Eagle; 08/02/2015

Lehigh Valley Quarries Getting a Flood of Trespassers: Pamela Lehman; The Morning Call; 09/12/2015

Lower Mount Bethel Quarry Victim Identified by Northampton County Coroner: Tony Rhodin; Lehigh Valley Live; 06/16/2015

After Manchester Girl's Death, Police Increase Patrols: Amanda Oglesby; app. Part of the USA Today Network; 07/07/2015

Police Recover Body of N.J. Teen Who Drowned in Quarry: Andy Polhamus; New Jersey On-Line; 07/02/2015

Body of Drowning Victim in Knoxville Found by Rescue

and Health Administration. The actual number of fatalities is, without any doubt, higher than the numbers shown in the tables and on the map.

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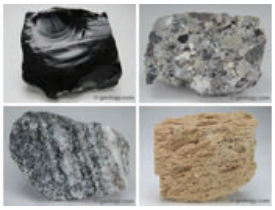

Rocks: Galleries of igneous, sedimentary and metamorphic rock photos with descriptions.

Minerals: Information about ore minerals, gem materials and rock-forming minerals.

Volcanoes: Articles about volcanoes, volcanic hazards and eruptions past and present.

Gemstones: Colorful images and articles about diamonds and colored stones.

General Geology: Articles about geysers, maars, deltas, rifts, salt domes, water, and much more!

Geology Store: Hammers, field bags, hand lenses, maps, books, hardness picks, gold pans.

Earth Science Records: Highest mountain, deepest lake, biggest tsunami and more.

Diamonds: Learn about the properties of diamond, its many uses, and diamond discoveries.

Squad: Greg Brobeck; WATE; 04/23/2015

Crews Recover Body at South Knoxville Quarry: WVLT TV; 05/30/2014

Cold Water Blamed in Man's Drowning: Nancy Lowry; New Castle News; 06/11/2014

Virginia Tech Wrestler Dies in Apparent Swimming Accident: Amy Friedenberger; source; 07/03/2014

UPDATED: Forest Park Graduate Drowns in Fredericksburg Quarry: Author; Inside NoVa; 07/08/2014

More Minerals

Minerals

Kyanite

Cinnabar

Rhodonite

Quartz

Tourmaline

Topaz

Rhodochrosite

Exhibit 5

Table 1. Comparison of 50-Year Demand to Permitted Aggregate Reserves for Aggregate Study Areas as of January 1, 2017.

AGGREGATE STUDY AREA[1]	50-Year Demand (million tons)	Permitted Aggregate Reserves (million tons)	Permitted Aggregate Reserves Compared to 50-Year Demand (percent)	Projected Years Remaining
Bakersfield P-C Region	338	1,708	505	More than 50
Barstow-Victorville P-C Region	163	117	72	31 to 40
Claremont-Upland P-C Region	202	90	45	21 to 30
El Dorado County	82	15	18	11 to 20
Fresno P-C Region	305	556	182	More than 50
Glenn County	41	22	54	21 to 30
Merced County	154	61	40	21 to 30
Monterey Bay P-C Region	333	297	89	41 to 50
Nevada County	41	52	127	More than 50
North San Francisco Bay P-C Region	492	263	53	21 to 30
Palmdale P-C Region	569	163	29	11 to 20
Palm Springs P-C Region	238	163	68	31 to 40
Placer County	188	387	206	More than 50
Sacramento County	724	327	45	21 to 30
Sacramento-Fairfield P-C Region	295	109	37	21 to 30
San Bernardino P-C Region	939	156	17	11 to 20
San Fernando Valley/ Saugus-Newhall[2]	**387**	**17**	**4**	**10 or fewer**
San Gabriel Valley P-C Region	751	297	40	21 to 30
San Luis Obispo-Santa Barbara P-C Region	226	58	26	11 to 20
Shasta County	82	49	60	31 to 40
South San Francisco Bay P-C Region	1,320	506	38	21 to 30
Stanislaus County	160	39	24	11 to 20
Stockton-Lodi P-C Region	409	203	50	21 to 30
Tehama County	49	30	61	31 to 40
Temescal Valley-Orange County[2]	1,079	862	80	41 to 50
Tulare County	130	53	41	21 to 30
Ventura County[2]	241	84	35	11 to 20
Western San Diego County P-C Region	763	265	35	11 to 20
Yuba City-Marysville P-C Region	344	679	197	More than 50
Total	11,045	7,628	69	

[1] Aggregate study areas follow either a Production-Consumption (P-C) region boundary or a county boundary. A P-C region includes one or more aggregate production districts and the market area that those districts serve. Aggregate resources are evaluated within the boundaries of the P-C Region. County studies evaluate all aggregate resources within the county boundary.

[2] Two P-C regions have been combined into one study area.

Bold = study area with ten or fewer years of permitted reserves.

From: Michael Corder
To: Randall , David A.
Subject: CEMEX Rockfield Quarry Modification Project EIR
Date: Monday, March 10, 2025 4:54:06 PM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png
image007.png
image008.png
SJVAPCD Comments - DEIR Cemex Rockfield Project.pdf

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good afternoon David,

The San Joaquin Valley Air Pollution Control District (District) has the following comments on the Draft Environmental Impact Report for the CEMEX Rockfield Quarry Modification Project.

Please let me know if you have any questions.

Thank you,

Michael Corder
Senior Air Quality Specialist
San Joaquin Valley Air Pollution Control District
1990 E. Gettysburg Avenue | Fresno, CA 93726
P. 559.230.5818 | F. 559.230.6111

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March 10, 2025

David Randall
County of Fresno
Department of Public Works and Planning
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Project: Draft Environmental Impact Report for the CEMEX Rockfield Quarry Modification Project

District CEQA Reference No: 20250088

Dear Mr. Randall:

Comment 13-1

The San Joaquin Valley Air Pollution Control District (District) has reviewed the Draft Environmental Impact Report (DEIR) from the County of Fresno (County) for the CEMEX Rockfield Quarry Modification Project. Per the DEIR, the project is for the continuation and modification of its current aggregate (rock, sand, and gravel) mining and processing operation to allow for an increase in their aggregate sales from 1.4 MT/yr to 2.0 MT/yr within 5 years and up to 3.0 MT/yr within 10 years. The Project is located at two sites: 13475 N. Friant Road (Plant Site) and 14765 N. Friant Road (Quarry Site) in Fresno, CA.

The District offers the following comments at this time regarding the Project:

1) Project Operational Emissions

Comment 13-2

Per the DEIR, the Project will result in increased On-Road Diesel-Fueled Vehicle trips, for example, heavy-heavy duty (HHD) trucks. More specifically, Table 4.3-21 (Mitigated Operational Phase Criteria Air Pollution Annual Emissions), presents the Project mobile source criteria pollutant emissions which are demonstrated to be below the District significance thresholds. Additionally, the DEIR states the emission reductions from mobile sources are attributed to technological advancements and stricter emissions requirements, such as compliance with the "In-Use Off-Road Diesel-Fueled Fleets" and "In-Use On-Road Diesel-Fueled Vehicles" regulations. To ensure air quality emission impacts from Project operations are lessened, the District recommends including an enforceable mitigation measure, that requires the use of cleaner HHD trucks.

Samir Sheikh
Executive Director/Air Pollution Control Officer

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Modesto, CA 95356-8718
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Tel: (661) 392-5500 FAX: (661) 392-5585

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The San Joaquin Valley will not be able to attain stringent health-based federal air quality standards without significant reductions in emissions from HHD trucks, the single largest source of NOx emissions in the San Joaquin Valley. Accordingly, to meet federal air quality attainment standards, the District's ozone and particulate matter attainment plans rely on a significant and rapid transition of HHD fleets to zero or near-zero emissions technologies.

Comment 13-2 Cont.

The Project is an aggregate (rock, sand, and gravel) mining and processing operation and will result in HHD truck trips. Therefore, District also recommends that the following measures be considered by the County to reduce Project-related operational emissions:

- *Recommended Measure*: Fleets associated with operational activities utilize the cleanest available HHD trucks, including zero and near-zero technologies.

- *Recommended Measure*: All on-site service equipment (cargo handling, yard hostlers, forklifts, pallet jacks, etc.) utilize zero-emissions technologies.

2) Truck Routing

Truck routing involves the assessment of which roads HHD trucks take to and from their destination, and the emissions impact that the HHD trucks may have on residential communities and sensitive receptors. The Project is an aggregate (rock, sand, and gravel) mining and processing operation and will result in HHD truck trips.

Comment 13-3

The District recommends the County evaluate HHD truck routing patterns for the Project, with the aim of limiting exposure of residential communities and sensitive receptors to emissions. This evaluation would consider the current truck routes, the quantity and type of each truck (e.g., Medium Heavy-Duty, HHD, etc.), the destination and origin of each trip, traffic volume correlation with the time of day or the day of the week, overall Vehicle Miles Traveled (VMT), and associated exhaust emissions. The truck routing evaluation would also identify alternative truck routes and their impacts on VMT and air quality.

3) Reduce Idling of Heavy-Duty Trucks

Comment 13-4

The goal of this strategy is to limit the potential for localized PM2.5 and toxic air contaminant impacts associated with the idling of Heavy-Duty trucks. The diesel exhaust from idling has the potential to impose significant adverse health and environmental impacts.

Since the Project will result in HHD truck trips, the District recommends the EIR include measures to ensure compliance of the state anti-idling regulation (13 CCR § 2485 and 13 CCR § 2480) and discuss the importance of limiting the amount of idling, especially near sensitive receptors.

Comment 13-4 Cont.

4) Electric On-Site Off-Road and On-Road Equipment

Comment 13-5

Since the development Project is an aggregate (rock, sand, and gravel) mining and processing operation, the Project will result in the increased use of off-road equipment (e.g., tractors, excavators, forklifts, etc.) and on-road equipment (e.g., off-highway trucks to move materials). The District recommends that the County include requirements for project proponents to utilize electric or zero emission off-road and on-road equipment.

5) Health Risk Screening/Assessment and Ambient Air Quality Analysis

Comment 13-6

The District reviewed the Health Risk Assessment (HRA) and Ambient Air Quality Analysis (AAQA) for the Project and offers the following comments:

- For evaluating the potential health risks to impacted receptors (residences, other businesses, etc.), emissions reductions from one location cannot be used to directly reduce emissions, and therefore potential health impacts (cancer, chronic, and acute), at another location. The potential health risk to surrounding receptors shall be analyzed for all new emissions locations. Any potential decreases/increases in health impacts must be evaluated by modeling the emissions at their actual release locations and comparing the health impacts on an individual receptor by receptor basis for all receptors. Therefore, in order to ensure that the public's exposure is properly evaluated from this Project, any new potential air toxics emissions resulting from the Project should be evaluated for their potential health risk to the surrounding public.
- Per District Policy APR-2030, the District recommends an AAQA be performed for all criteria pollutant emissions for which an ambient air quality standard exists when a stationary source project would result in an increase of 100 pounds per day for any criteria pollutant. The Project indicates that CO emissions exceed the 100 lb/day threshold, however, it appears that the AAQA only evaluated CO emissions. The District recommends that the AAQA also include NOx, SOx, PM10, and PM2.5 emissions.

Comment 13-7

- Receptor gridding was used for the AAQA and HRA; however, the District recommends using a combination of fence line, cartesian grid, and discrete receptors to ensure that the maximally impacted receptors are reasonably captured. Where maximally impacted receptors are found in areas with coarse gridding, the District recommends placing additional receptors around them such that the spacing does not exceed 25 meters between receptors. For more information, please consult the District's Modeling Guidance.

Comment 13-8

- The District recommends adding receptors along the farmland fence line to the West of the Quarry Site in order properly assess acute health impacts to potential farm workers. Comment 13-9
- The emissions from the second phase of the Project are evaluated from thirty-one to sixty years. District policy is to evaluate long term residential risk over a seventy year period. Comment 13-10
- The HARP2 output files for the mitigated cancer risk to workers indicate that the risk was evaluated using a 25-year exposure. The District recommends using a 40-year exposure period for evaluating health impacts to worker receptors. Comment 13-11
- The Project uses variable emission rates in its dispersion modeling which were then imported into HARP2 for the risk assessment. In such cases, at least two modeling runs must be performed. One modeling run for long-term analyses (cancer/chronic) and one run for short term analyses (acute), with each using the appropriate scalars. In addition, the HRA must also apply an appropriate Worker Adjustment Factor (WAF) when evaluating the long-term carcinogenic impacts for workers. Comment 13-12
- The Fraction of Time at Home was enabled in HARP2 for the residential risk assessments. Due to the prevalence of home schooling and telework the District recommends that this option be disabled unless justification is provided. Comment 13-13
- The District could not determine from the documentation provided how the health impacts and ambient air quality impacts from blasting emissions were evaluated. Comment 13-14

Based on the above, the District recommends the HRA and AAQA be revised to ensure the analysis is representative and adequately reflects the Project's potential air quality health impacts. Comment 13-15

6) District Rules and Regulations

Comment 13-16

The District issues permits for many types of air pollution sources, and regulates some activities that do not require permits. A project subject to District rules and regulations would reduce its impacts on air quality through compliance with the District's regulatory framework. In general, a regulation is a collection of individual rules, each of which deals with a specific topic. As an example, Regulation II (Permits) includes District Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), Rule 2520 (Federally Mandated Operating Permits), and several other rules pertaining to District permitting requirements and processes.

The list of rules below is neither exhaustive nor exclusive. Current District rules can be found online at: https://ww2.valleyair.org/rules-and-planning/current-district-rules-and-regulations. To identify other District rules or regulations that apply to future projects, or to obtain information about District permit requirements, the project

proponents are strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (559) 230-5888.

Comment 13-16 Cont.

6a) District Rules 2010 and 2201 - Air Quality Permitting for Stationary Sources

Stationary Source emissions include any building, structure, facility, or installation which emits or may emit any affected pollutant directly or as a fugitive emission. District Rule 2010 (Permits Required) requires operators of emission sources to obtain an Authority to Construct (ATC) and Permit to Operate (PTO) from the District. District Rule 2201 (New and Modified Stationary Source Review) requires that new and modified stationary sources of emissions mitigate their emissions using Best Available Control Technology (BACT).

This Project will be subject to District Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review) and will require District permits. Prior to construction, the Project proponent should submit to the District an application for an ATC. For further information or assistance, the project proponent may contact the District's SBA Office at (559) 230-5888.

6b) District Regulation VIII (Fugitive PM10 Prohibitions)

Comment 13-16 Cont.

The project proponent may be required to submit a Construction Notification Form or submit and receive approval of a Dust Control Plan prior to commencing any earthmoving activities as described in Regulation VIII, specifically Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities.*

Should the project result in at least 1-acre in size, the project proponent shall provide written notification to the District at least 48 hours prior to the project proponents intent to commence any earthmoving activities pursuant to District Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities). Also, should the project result in the disturbance of 5-acres or more, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials, the project proponent shall submit to the District a Dust Control Plan pursuant to District Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities). For additional information regarding the written notification or Dust Control Plan requirements, please contact District Compliance staff at (559) 230-5950.

The application for both the Construction Notification and Dust Control Plan can be found online at: https://ww2.valleyair.org/media/fm3jrbsq/dcp-form.docx

Information about District Regulation VIII can be found online at: https://ww2.valleyair.org/dustcontrol

6c) Other District Rules and Regulations

Comment 13-16 Cont.

The Project may also be subject to the following District rules: Rule 4102 (Nuisance) and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations).

7) District Comment Letter

Comment 13-17

The District recommends that a copy of the District's comments be provided to the Project proponent.

If you have any questions or require further information, please contact Michael Corder by e-mail at Michael Corder@valleyair.org or by phone at (559) 230-5818.

Sincerely,

Tom Jordan
Director of Policy and Government Affairs

Mark Montelongo
Program Manager

Councilwoman Elsa Mejia
210 W. 4th St.
Madera, CA 93637
emejia@madera.gov
(559) 385-6857
March 10, 2025

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report

Dear Mr. Randall,

I am writing to formally express my opposition to the proposed 100-year permit for the CEMEX mining operation and to challenge the adequacy of the Draft Environmental Impact Report (EIR) prepared for this project. The EIR, as currently drafted, does not sufficiently or accurately assess the environmental, ecological, and community impacts that this long-term operation will have on the San Joaquin River and surrounding areas.

Comment 14-1

As someone with lifelong familiarity with the location, I find that the EIR fails to adequately address the following concerns:

Comment 14-2

1. Impacts on wildlife habitat
2. Water quality
3. Air pollution
4. Noise pollution
5. Groundwater depletion
6. Cumulative environmental impacts, and
7. Community health concerns
8. Cultural Resources

Comment(s) 14-3 14-4 14-5 14-6 14-7 14-8 14-9

A project of this scale and duration requires a far more comprehensive environmental review that includes thorough scientific analysis, long-term cumulative impact assessments, and meaningful mitigation strategies. The EIR, as it stands, does not meet these standards, and I urge Fresno County to require revisions that fully account for the long-term consequences of extending CEMEX's mining operations.

Comment 14-10

I request that the Planning Department reconsider this permit in light of the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.

Thank you for your time and consideration.

Sincerely,
Elsa Mejia

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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

March 11, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, California 93721
559-600-4052
drandall@fresnocountyca.gov

Subject: CEMEX Rockfield Quarry Modification Project (Project)
Draft Environmental Impact Report (DEIR)
SCH No.: 2020060123

Dear David Randall:

The California Department of Fish and Wildlife (CDFW) received a DEIR from Fresno County for the Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

Comment 15-1

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statue for all the people of the State (Fish & Game Code, Section 711.7, subd. (a) & 1802; Pub. Resources Code, Section 21070; CEQA Guidelines Section 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Id., Section 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

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CDFW is also submitting comments as a **Responsible Agency** under CEQA (Pub. Resources Code, Section 21069; CEQA Guidelines, Section 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority (Fish & Game Code, Section 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & Game Code, Section 2050 et seq.), related authorization as provided by the Fish and Game Code may be required.

Comment 15-1 Cont.

Fully Protected Species: CDFW has jurisdiction over fully protected species of birds, mammals, amphibians and reptiles, and fish, pursuant to Fish and Game Code sections 3511, 4700, 5050, and 5515. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except as follows:

Comment 15-2

- Take is for necessary scientific research,
- Efforts to recover a fully protected, endangered, or threatened species, live capture, and relocation of a bird species for the protection of livestock, or
- They are a covered species whose conservation and management is provided for in a Natural Community Conservation Plan (Fish & G. Code, §§ 3511, 4700, 5050, & 5515).

Additionally, specified types of infrastructure projects may be eligible for an Incidental Take Permit (ITP) for unavoidable impacts to fully protected species if certain conditions are met (see Fish & G. Code §2081.15). Project proponents should consult with CDFW early in the Project planning process if an ITP may be pursued for the Project.

CDFW Ecological Reserve: Fish and Game Code section 1583 states "Except in accordance with the regulations of the commission it is unlawful to enter upon any ecological reserves established under the provisions of the article, or to take therein any bird or the nest or eggs thereof, or any mammal, fish, mollusks, crustaceans, amphibia, reptiles or any other form of plant or animal life." In addition, California Code of Regulations, Title 14, Section 630 states "All ecological reserves are maintained for the primary purpose of developing a statewide program for protection of rare, threatened, or endangered native plants, wildlife, aquatic organisms, and specialized terrestrial or aquatic habitat types", and therefore, any other activity on these lands is restricted.

Nesting Birds: CDFW has jurisdiction over actions with potential to result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, their eggs and nests include Sections 3503

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(regarding unlawful take, possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the take, possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird). Comment 15-2 Cont.

Water Rights: The capture of stream flows to is subject to appropriation and approval by the State Water Resources Control Board (SWRCB) pursuant to Water Code section 1200 et seq. CDFW, as Trustee Agency, is consulted by SWRCB during the water rights process to provide terms and conditions designed to protect fish and wildlife prior to appropriation of the State's water resources. Certain fish and wildlife are reliant upon aquatic and riparian ecosystems, which in turn are reliant upon adequate flows of water. CDFW, therefore, has a material interest in assuring that adequate water flows within streams for the protection, maintenance, and proper stewardship of those resources. CDFW provides, as available, biological expertise to review and comment on environmental documents and impacts arising from Project activities.

PROJECT DESCRIPTION SUMMARY

Comment 15-3

Proponent: CEMEX

Objective: The proposed Project is a continuation and modification of aggregate (rock, sand, and gravel) mining and processing operations located on two properties, the Plant Site and the Quarry Site. The Project would occur in two stages as described below:

Stage 1: Stage 1 of the Project would include concurrent operations at both the Quarry Site and the Plant Site for up to 30 years. At the Plant Site, the existing aggregate processing plant will continue to be used to wash, screen, crush, and sort aggregate mined from the Plant Site. The existing ready-mix concrete plant, hot-mix asphalt plant, and related supportive facilities would continue to operate. The remaining alluvial deposit would be mined to a depth of approximately 75 feet below ground surface (bgs). Surface and/or groundwater encountered within the excavation would be pumped to groundwater recharge trenches along boundaries of the Plant Site. Upon completion of alluvial deposit mining at the Plant Site, operations at the Plant Site would cease, all equipment would be removed, and the site reclaimed as 122 acres of open space, riparian, and open water wildlife habitat.

At the Quarry Site, mining would be modified to include the hard rock (granite) that lies beneath the alluvial deposit currently being mined. Surface and/or groundwater encountered within the excavation will continue to be pumped to an existing reclaimed pond in the northeast corner of the Quarry Site for recharge to the groundwater and to existing groundwater recharge trenches along the western boundaries of the Quarry Site. Excavation of the hard rock would require drilling and blasting and would occur to a depth of approximately 600 feet bgs. An aggregate processing plant would be added

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to the Quarry Site to wash, screen, crush, and sort the aggregate. The plant would be located in a previously excavated pit approximately 30 feet bgs.

Comment 15-3 Cont.

Stage 2: Stage 2 of the Project would continue hard rock mining and processing operations at the Quarry Site. The ready-mix concrete plant and the hot-mix asphalt plant will be relocated from the Plant Site to the Quarry Site adjacent to the aggregate processing plant. Upon completion of excavation at the Quarry Site, operations at the Quarry Site would cease and all equipment would be removed. Reclamation of the Quarry Site will create approximately 349 acres of open space, riparian, and open water wildlife habitat. The total Project life of the combined Stages 1 and 2 is estimated to be 100 years.

Location: The Project is located at two sites: 13475 N. Friant Road and 14765 North Friant Road, Fresno. The Project is located between North Friant Road and the San Joaquin River, in an unincorporated portion of Fresno County.

- Plant Site (CUP 3666): CEMEX's current Plant Site is located on approximately 122 acres on the west side of North Friant Road, on Assessor's Parcel Number (APNs) 300-070-56S, 57S,58S,59S, and 60S, approximately 1.5 miles north of the City of Fresno and approximately 0.7 mile north of the intersection of North Willow Avenue and North Friant Road.
- Quarry Site (CUP 3667): CEMEX's current Quarry Site is located on approximately 349 acres on the west side of North Friant Road, on APNs 300-040-19 and 20, 300-080-01S, 300-250-12 and portion of 300-310-01, approximately 2.0 miles north of CEMEX's current Plant Site and approximately 2.0 miles south of the unincorporated community of Friant.

Timeframe: Undetermined; however, mining and processing activities are anticipated to take approximately 100 years to complete.

COMMENTS AND RECOMMENDATIONS

Comment 15-4

CDFW offers the following comments and recommendations to assist Fresno County in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the CEQA document prepared for this Project.

The DEIR details the Project activities proposed at both the Plant Site and Quarry Site over the next century. CDFW would like to note that the length of the Project coupled with the uncertainty surrounding the extensive blasting and mining activities for the Quarry Site have CDFW concerned that the proposed Project would result in significant long-term impacts to species and habitats within and surrounding the San Joaquin River

Comment 15-5

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and its habitats and have the potential to significantly impact restoration and conservation goals in the Project vicinity. For instance, the Willow Unit of CDFW's San Joaquin River Ecological Reserve (SJRER) surrounds the current Plant Site on three sides (the fourth side being Friant Road). The Willow Unit was acquired with State Bond Funds, for the intended purpose of perpetual protection of riparian habitat and associated wildlife. The Willow Unit supports high quality riparian habitat for both nesting and migratory bird species.

Comment 15-5 Cont.

Comment 15-6

Additionally, the San Joaquin River Restoration Program (SJRRP) is currently working to restore and maintain fish populations in "good condition" in the mainstem San Joaquin River downstream of Friant Dam to the confluence with the Merced River (i.e., Restoration Area) and restore and maintain naturally reproducing and self-sustaining populations of salmon and other fish. CDFW would like to note the SJRRP is working on two major passage improvements projects (Sack Dam and Mendota Dam) to allow volitional passage of anadromous fishes upstream to Friant Dam (upstream of the Project). Further, CDFW has invested millions of dollars to construct a state-of-the-art Salmon Conservation and Research Facility (SCARF; i.e., conservation hatchery), also upstream of this site, to help with the reintroduction of spring-run Chinook salmon (*Oncorhynchus tshawytscha pop. 11*). Once fully operational, the SCARF plans to release 1.2 million smolts annually from its volitional release channel upstream of the Project site. Further the Project is directly adjacent to the most important reach of the river for spring-run Chinook salmon to complete various life-cycle stages (egg, juvenile, and adult), with holding, spawning, incubation, and rearing occurring directly adjacent to the Project site.

Comment 15-7

Finally, the Lost Lake Recreation Area, which borders the Quarry Site to the north, is also State-owned land and is operated under an expired lease with Fresno County. Lost Lake Recreation Area provides important recreational opportunities to the public and also supports high quality riparian habitat for a variety of wildlife species, including many of the special-status species identified in the DEIR.

Comment 15-8

While CDFW acknowledges that a detailed analysis was included in the Project DEIR to evaluate impacts to the San Joaquin River and associated floodplain from the associated Project blasting and mining activities, CDFW is concerned that the duration of the Project, coupled with the complexity of the Project impacts, which includes blasting and excavation of bedrock down to approximately 600 feet, and uncertainty in climatic conditions due to climate change over the next 100 years, will result in significant unanalyzed direct and indirect impacts to biological resources beyond baseline conditions. CDFW is specifically concerned with potential Project-related impacts to riparian habitat and associated fish and wildlife which inhabit areas adjacent to the Project site, specifically impacts associated with noise (hydroacoustic and acoustic), blasting, water quality, vibration, and direct disturbance. In addition, deep

Comment 15-9

Comment 15-10

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mining activities could severely impact the underlying hydrology on which the San Joaquin River and the river's associated riparian vegetation depends, particularly if slope failure were to occur at the Quarry Site, the natural berms and levees surrounding the Project site were to fail from high flows or unforeseen climatic conditions, or if unanticipated rock fractures provide more hydrologic connection than assumed in the DEIR. This situation would be of particular concern to the SJRRP restoration activities, as water released from the Friant Dam is fully allocated for downstream riparian water right holders and SJRRP Restoration Flows. Any unintentional diversion, from events such as slope failure or deep pit capture and/or filling, would have significant impacts on downstream water deliveries and the success of SJRRP's goal in restoring a natural self-sustaining population of spring-run Chinook salmon below Friant dam.

Comment 15-10 Cont.

In summary, CDFW is concerned Project activities, which include blasting and mining operations directly adjacent to the San Joaquin River to a depth of approximately 600 feet, and would occur over an approximate 100-year period, would result in significant direct and indirect impacts to sensitive resources within and adjacent to the Project site over the life of the Project. These impacts have the potential to disrupt San Joaquin River hydrology, impact the restoration and conservation goals within the San Joaquin River and associated SJRER, as well as the restoration goals of the SJRRP. Due to these concerns, CDFW strongly recommends that the Project be modified to a more environmentally superior alternative, and that Project activities be adjusted to limit site blasting and excavation (i.e., activities associated with the Quarry Site) further away from the San Joaquin River and the river's associated habitats, reducing the potential for impacts to CDFW-owned lands, and sensitive species and habitats.

Comment 15-11

In addition to the general recommendation provided above, CDFW has concerns about the ability of some the proposed mitigation measures to reduce impacts to less than significant and avoid unauthorized take for several special-status animal species, including the State endangered and fully protected bald eagle (*Haliaeetus leucocephalus*), the State threatened Swainson's hawk (*Buteo swainsoni*), the State and federally threatened California tiger salamander – Central California Distinct Population Segment (DPS) (*Ambystoma californiense pop.1*), the State and federally threatened Chinook salmon – Central Valley spring-run Evolutionary Significant Unit (ESU), the State fully protected white-tailed kite (*Elanus leucurus*), the State candidate western burrowing owl (*Athene hypugaea*), tricolored blackbird (*Agelaius tricolor*), and Crotch's bumble bee (*Bombus crotchii*), the State species of special concern and federally proposed threatened western pond turtle (*Actinemys marmorata*) and western spadefoot (*Spea hammondii*), and the State species of special concern Chinook salmon – Central Valley fall/late-run ESU, hardhead (*Mylopharodon conocephalus*), Kern brook lamprey (*Lampetra hubbsi*), Pacific lamprey (*Entosphenus tridentatus*), and Sacramento hitch (*Lavinia exilicauda exilicauda)*, the State species of special concern and federally

Comment 15-12

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threatened steelhead – Central Valley DPS (*Oncorhynchus mykiss irideus pop.* 11), and the State species of special concern western river lamprey (*Lampetra ayresii*). Comment 15-12 Cont.

Terrestrial Species Comment 15-13

State Fully Protected Raptors

CDFW would like to note that, based on the information provided in the DEIR, habitat assessments and surveys for special-status species were focused mainly within the Project site, and focused surveys were not conducted for bald eagle (BAEA) and white-tailed kite (WTKI). Additionally, the DEIR does not appear to have a substantive analysis of direct and indirect impacts to biological resources adjacent to the Project site. CDFW is particularly concerned with the impacts from Project activities to BAEA and WTKI if these species were to nest within the habitats surrounding the Project site. Certain Project details and their associated potential impacts to biological resources are also lacking, such as a detailed analysis of the potential acoustic and vibratory impacts to BAEA and WTKI from the blasting and mining activities associated with the Quarry Site.

Mitigation Measure 4.4-1c is provided to mitigate for potential impacts to nesting birds, including BAEA and WTKI, and requires a preconstruction survey prior to Project activities and the implementation of inadequate no-disturbance buffers. CDFW does not concur that the surveys and no-disturbance buffers proposed in Mitigation Measure 4.4-1c are sufficient to mitigate for potential impacts to these species. CDFW is also concerned that Project activities such as blasting may result in indirect impacts to BAEA and WTKI, and these Project activities need to be more adequately analyzed in the DEIR. As such, CDFW recommends that the DEIR include a more robust analysis of potential impacts to BAEA and WTKI from ongoing Project activities, particularly for the blasting and mining proposed at the Quarry Site, and that this analysis include a sufficient area around the Project site.

In addition to the recommendation above, CDFW recommends the following:

> **Recommended Mitigation Measure 1: State Fully Protected Raptor Surveys**
>
> CDFW recommends that focused BAEA and WTKI surveys be conducted prior to the initiation of Project blasting activities. CDFW recommends that these surveys occur within the Project site and a ½-mile buffer of the Project site and that BAEA surveys follow the Bald Eagle Breeding Survey Instructions (CDFW 2010) protocol and be conducted by a qualified biologist prior to the initiation of plant construction or mining phases as outlined in the DEIR.

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Recommended Mitigation Measure 2: State Fully Protected Raptor Avoidance Buffer

Comment 15-13 Cont.

If a BAEA or WTKI is found prior to or during surveys or Project activities, CDFW recommends implementation of a minimum ½-mile no-disturbance buffer. CDFW advises that this buffer remains in place until the breeding season has ended or until a qualified biologist has determined that nesting has ceased, the birds have fledged and are no longer reliant upon parental care for survival. In the event that a BAEA or WTKI is detected during surveys, and a ½-mile no-disturbance buffer is not feasible, consultation with CDFW is recommended.

Swainson's Hawk

Comment 15-14

CDFW would like to note that, based on the information provided in the DEIR, habitat assessments and surveys for special-status species were focused mainly within the Project site, and focused surveys were not conducted for Swainson' hawk (SWHA). Additionally, the DEIR does not appear to have a substantive analysis of direct and indirect impacts to biological resources adjacent to the Project site. CDFW is particularly concerned with the impacts from Project activities to SWHA if individuals were to nest within the habitats surrounding the Project site. Certain Project details and their associated potential impacts to biological resources are also lacking, such as a detailed analysis of the potential acoustic and vibratory impacts to SWHA from the blasting and mining activities associated with the Quarry Site.

Mitigation Measure 4.4-1c is provided to mitigate for potential impacts to nesting birds, including SWHA, and requires a preconstruction survey prior to Project activities and the implementation of inadequate no-disturbance buffers. CDFW does not concur that the surveys and no-disturbance buffers proposed in Mitigation Measure 4.4-1c are sufficient to mitigate for potential impacts to this species. CDFW is also concerned that Project activities such as blasting may result in indirect impacts to SWHA, and these Project activities need to be more adequately analyzed in the DEIR. As such, CDFW recommends that the DEIR includes a more robust analysis of potential impacts to SWHA from ongoing Project activities, particularly for the blasting and mining proposed at the Quarry Site, and that this analysis includes a sufficient area around the Project site.

In addition to the recommendation above, CDFW recommends the following: **Western Pond Turtle and Western Spadefoot**

Comment 15-15

CDFW would like to note that based on the information provided in the DEIR, habitat assessments and surveys for special-status species were focused mainly within the Project site, and focused surveys were not conducted for western pond turtle (WPT) and western spadefoot (WESP). CDFW would also like to note that DEIR did not focus

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on an evaluation of the habitat adjacent to the Project site, particularly along the San Joaquin River, and the DEIR does not appear to have a substantive analysis of direct and indirect impacts to biological resources adjacent to the Project site. CDFW is particularly concerned with the impacts from Project activities to WPT and WESP if this species were to utilize habitats surrounding the Project site. Certain Project details and their associated potential impacts to biological resources is also lacking, such as a detailed analysis of the potential acoustic and vibratory impacts to WPT and WESP and their associated burrows from the blasting and mining activities associated with the Quarry Site. CDFW is concerned that direct and indirect impacts to WPT and WESP, such as the potential collapse of burrows, inadvertent entrapment, direct mortality of individuals, and displacement due to sound or vibration, are not adequately analyzed in the DEIR. As such, CDFW recommends that the DEIR include a more robust analysis of potential impacts to WPT and WESP from ongoing Project activities, particularly for the blasting and mining proposed at the Quarry Site, and that this analysis include a sufficient area around the Project site. This additional analysis should consider information within several published research studies on various toad species which demonstrate that vibrations outside of typical emergence cues like rainfall can result in the emergence of toads from underground refugia, including during times of hibernation. It is also important to note that thunder, or sounds like thunder, can stimulate toad emergence. The vibrations and sounds associated with blasting could result in the atypical and seasonally inappropriate emergence of spadefoot, resulting in direct mortality, reduced survival, and impacts to reproductive success.

Comment 15-15 Cont.

CDFW would also like to note that Mitigation Measure 4.4-1b of the DEIR states, “Pre-construction clearance surveys within the boundaries of the Quarry Site shall be conducted […] A combination of visual and trapping surveys by a CDFW-qualified biologist may be performed.” CDFW is concerned the use of the phrase “may be performed” introduces an element of uncertainty and could lead to inadequate or nonexistent survey efforts, potentially affecting these sensitive species. As such, CDFW recommends revising this measure to explicitly require visual and trapping surveys prior to the initiation of any construction activities.

Comment 15-16

Aquatic Species

Comment 15-17

As noted above, extensive restoration, conservation, and management efforts are occurring within the San Joaquin River and adjacent SJRER, and aquatic species, including Chinook salmon, hardhead, Kern brook lamprey, Pacific lamprey, Sacramento hitch, steelhead, western river lamprey, sacrament sucker (*Catostomus occidentalis*), Sacramento pikeminnow (*Ptycochelis grandis)*, threespine stickleback (*gasterosteus aculeatus*), as well as species of sculpin (*cottus sp.*) have the potential to utilize the habitats directly adjacent to the Project site over the life of the Project. CDFW is concerned that the proximity of Project activities to the San Joaquin River and adjacent

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riparian habitat, particularly the blasting and mining activities associated with the Quarry Site, are likely to result in potentially significant impacts to aquatic species, particularly if slope failure were to occur at the Quarry Site or the natural berms and levees surrounding the Project site were to fail from high flows or unforeseen climatic conditions. In addition, unanticipated rock fractures could provide more hydrologic connection of the mining pit to the San Joaquin River than assumed in the DEIR, which could deep pit capture by the San Joaquin River and associated modification to San Joaquin River subsurface and subsurface flows. As such, CDFW has the following comments and recommendations:

Comment 15-17 Cont.

San Joaquin River Floodplain

Comment 15-18

While the DEIR notes that the Plant Site and Quarry Site are not located within the modeled 100-year floodplain of the San Joaquin River, the river is not in direct hydraulic communication with the weathered and hard rock at the Quarry Site, and that dewatering of the deeper geologic units associated with the Quarry Site Project activities would not be expected to affect the quantity of the water within the river, CDFW would like to highlight there is extensive amount of uncertainty with these statements, particularly due to the difficulty in attempting to evaluate and analyze potential changes to the surrounding areas over time (e.g., changes in topography, rainfall amounts, etc.), particularly from high flows and/or increasingly extreme weather events associated with climate change. CDFW would also like to note that portions of the Project site are still located within the rivers historic floodplain and is potentially still connected to the San Joaquin River via subsurface flow and at times, potentially overland flow, when large flood flow events occur. CDFW would also like to note that the 20th century levee construction does not cut off the historic plain from local watershed processes.

The San Joaquin River flow/stage is the local control for the shallow groundwater table elevation. This San Joaquin River's influence on the groundwater table extends laterally away from the river into the historic floodplain's subsurface which is predominantly composed of alluvial (sand, gravel, and cobble) deposits. These sediments are found to cap local bedrock in some areas. The extraction or pumping of groundwater within the historic or present-day floodplain adjacent to the San Joquin River, would influence river and hyporheic flow, and shallow groundwater elevations. Excavation or pumping below the groundwater table elevation within the floodplain would cause a local cone of depression that would draw down the groundwater table elevation. This would create a gradient that would pull water from the San Joaquin River and its subsurface, known as a losing stream. This would have the potential to have a significant impact to the San Joaquin River watershed and the success of the SJRRP.

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Levee Overtopping/Levee Failure

Comment 5-19

Friant Dam flood releases can occur in winter and spring. These flows have the potential to overtop or laterally incise levees, natural or constructed. Given the proposed Project's 100-year lifespan, it is critical that more dynamic language be incorporated into the DEIR to account for potential changes to the surrounding areas over time and potential for levee overtopping or failure. CDFW is concerned that flood releases, coupled with the potential for increased extreme flow events due to climate change, could jeopardize the integrity of the natural berms and levees surrounding the Project site, and that breaching of these barriers by high flows could result in long-term impacts to San Joaquin River fisheries and nearby restoration projects. As natural systems are inherently dynamic, it is essential to consider all potential scenarios for a Project with such an extended duration. Coordination with CDFW and other relevant agencies is strongly recommended to develop adaptive language that minimizes the potential long-term impacts of the Project.

Water Temperatures/Water Quality

Comment 5-20

Suitable San Joaquin River temperatures are essential for the success in restoring the river and for the goals associated with the SJRRP. In general, San Joaquin River temperatures increase as water flows downstream from Friant Dam except for the coldest months in late fall and early winter. The reduction of flow traveling downstream, by a surface or subsurface diversion associated with mining pit capture would increase this dynamic and cause the San Joaquin River to warm sooner and at a faster rate. This can cause lethal/sub-lethal conditions for salmon and other fishes. Water found within the historic San Joaquin River floodplain, surface and subsurface, would have different water quality and temperatures than San Joaquin River surface flow. While the DEIR notes that groundwater and onsite water associated with the mining activities would remain on the Project site for percolation into the groundwater aquifer, CDFW would like to reiterate that any surface or subsurface flow of water from the Project site would have the potential to warm the San Joaquin River and cause water quality issues that can result in lethal/sub-lethal conditions for fishes and potentially hinder SJRRP's efforts.

Rock Blasting and Impacts to Chinook Salmon

Comment 5-21

The San Joaquin River, from Friant Dam to Little Dry Creek, is the primary spring-run Chinook salmon over-summer holding, spawning, and incubation reach for the SJRRP based on river temperatures, streambed substrate, and flows. The Project is immediately adjacent to this important reach that supports these critical phases of salmon life history. Rock blasting adjacent to the San Joaquin River would likely cause physical vibrations laterally within the floodplain and into the riverine environment, may have significant impacts on the behavior of salmon adults with over-summer holding

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(April to September), habitat spawning selection (September to mid-November), and the incubation of alevin/fry (September - March). While the DEIR evaluates potential blasting impacts to salmonids and concludes that blasting activities would be below a significant harm threshold identified by the Alaska Department of Fish and Game, CDFW would like to note that in addition to direct mortality and harm, rock blasting may cause an avoidant behavior in salmon. If blasting were to cause avoidant behavior, blasting activities could act as a behavioral barrier blocking salmon from entering and occupying suitable holding and spawning habitat located near and upstream of the Project. In addition, physical vibrations rock blasting could result in premature emergence on alevin/fry from the redd incubation environment. Juveniles emerging too early result in poor survival from their inability to navigate flows, avoid entrainment, and successfully escape predators. Due to the complexity of trying to determine behavioral thresholds to fish salmon from the proposed blasting activities, CDFW reiterates the recommendation that the Project be modified to an environmentally superior alternative, and that Project activities be adjusted to site blasting and excavation (i.e., activities associated with the Quarry Site) further away from the San Joaquin River and the river's associated habitats. In addition to this general recommendation, CDFW recommends the following:

Comment 5-21 Cont.

> **Recommended Mitigation Measure 15: Chinook Salmon Consultation**
>
> It is recommended the Project proponent consult with CDFW to determine how to minimize and mitigate impacts to juvenile salmon utilization of the San Joaquin River from rock blasting.

Blasting Protocols

Comment 5-22

Mitigation measure 4.10-1 of the DEIR requires implementation of the *Blasting Protocols* which specifies that blasting must begin at the center of the Quarry site and that monitoring of ground borne vibration can occur and be used to verify that predicted maximum ground vibrations are consistent with actual ground vibration measurements and allow for adjustments in blasting design to occur based on the monitoring results. CDFW is concerned that the blasting protocols may have unforeseen impacts to aquatic species and recommends having a biological monitor visually observe blasting activities adjacent to the San Joaquin River to look for signs of impacts to species (e.g. unusual behavior, mortality).

Editorial Comments and/or Suggestions

Comment 5-23

Blasting Impacts: Within the DEIR, noise significance thresholds are discussed. However, these thresholds primarily focus on impacts related to salmon, as detailed in the DEIR section "Effects of Nearby Blasting on Salmon in the San Joaquin River," and do not address potential impacts on other animal species. CDFW strongly recommends

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a comprehensive evaluation of the potential effects of acoustic and vibration impacts from the proposed blasting, particularly in relation to impacts to special-status species listed in previous sections of this letter. Furthermore, relevant thresholds or evaluation criteria should be established to minimize these effects and ensure the protection of wildlife in the surrounding areas.

Comment 5-23 Cont.

Reclamation Plans: The DEIR, on page 148, states that at the Plant Site, "It is estimated that an approximately 100.5-acre, 20-foot-deep pond would form above the reclaimed bottom from groundwater and rainfall." The Project proposes that, upon completion, the Plant Site would be converted into an open water habitat or lake with a relatively uniform bottom elevation and a depth of approximately 20 feet, which offers limited benefit to wildlife. CDFW recommends placing overburden and fines at the bottom of the pit to create topographic complexity, ensuring the formation of dry islands, peninsulas, and variable water depths. This more naturalistic approach would enhance the site's suitability for wildlife use. As an example, CDFW suggests that the reclamation plan reference sites such as Ball Ranch (coordinates: 36.936284°, -119.736811° and 36.857447°, -119.834031°).

Comment 5-24

Overall, CDFW does not concur with the proposed reclamation plan. CDFW recommends the development of a more comprehensive reclamation plan in collaboration with relevant agencies. Given that the Project is anticipated to be completed over a 100-year timeframe, it is essential to create a detailed reclamation plan that incorporates dynamic language, allowing for flexibility to accommodate potential changes over time.

Comment 5-25

Quarry Site Groundwater Adaptive Management Program: Mitigation Measure 4.10-10a of the DEIR states, "To assess any potential effect on the CSA 44C wells due to the proposed excavation of a hard rock quarry pit at the Quarry Site, monitoring shall be conducted in the nested set of wells between the Northeast Pond and the CSA 44C wells, and in the CSA 44C wells themselves." CDFW is concerned that monitoring at only one of the two well clusters near the San Joaquin River may not fully represent conditions along the entire boundary.

Comment 5-26

CDFW recommends the following:

1. Add pressure transducer monitoring to the MW-2 well cluster, located in the alluvium and weathered rock, to establish baseline conditions and evaluate potential impacts (MW-1 is already included and contains applicable thresholds and actions for MW-2).

2. Conduct further investigation into the elevation of the contact between the alluvium and weathered rock in relation to the adjacent channel bed and stream stage along the mine boundary shared with the San Joaquin River. This data

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should be used to refine the adaptive management program concerning potential streamflow depletion.

Comment 5-26 Cont.

Sustainable Groundwater Management Act (SGMA), Interconnected Surface Waters, and Groundwater Dependent Ecosystems: Groundwater Sustainability Plans were prepared for the Kings Subbasin. The Kings Subbasin (Subbasin No. 5-022.08 of the San Joaquin Valley Groundwater Basin) is designated as a high priority Subbasin by the Department of Water Resources (DWR). SGMA defines sustainable groundwater management as, "management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results (Water Code, § 10721 (v))." CDFW recommends that the DEIR include an analysis of Project-related activities in relation to the North Kings Groundwater Sustainability Plan, including analysis of potential undesirable results and adverse impacts to groundwater dependent ecosystems including the biological resources listed above.

Comment 5-27

CDFW recommends a hydrologic study or other information that identifies and analyzes the impacts to the aquatic ecosystems and fisheries of the San Joaquin River that may result from Project implementation. CDFW recommends that it include specific triggers for evaluating changes to surface and ground water levels and monitoring wetland and riparian habitats that would be affected by these changes.

Water Rights: The Project description allows for the diversion and storage of surface water for Project activities. As stated previously, the capture of stream flows is subject to appropriation and approval by the SWRCB pursuant to Water Code section 1200 et seq. CDFW recommends that the DEIR includes a detailed description of the water rights and water entitlements that would pertain specifically to the Project and address any applications or change petitions that may be filed. CDFW, as Trustee Agency, is consulted by the SWRCB during the water rights process to provide terms and conditions designed to protect fish and wildlife prior to appropriation of the State's water resources. Given the potential for impacts to special-status species and their habitats, it is advised that required consultation with CDFW occur well in advance of the SWRCB water right application process.

Comment 5-28

Nesting birds: CDFW encourages that Project ground-disturbing and blasting activities occur during the bird non-nesting season; however, if ground or vegetation disturbing or blasting activities must occur during the nesting season (February 1st through September 15th), the Project applicant is responsible for ensuring that implementation of the Project does not result in violation of the Migratory Bird Treaty Act or relevant Fish and Game Code sections as referenced above.

Comment 5-29

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CDFW further recommends that the DEIR include that a qualified biologist conduct a pre-construction survey for active nests no more than three days prior to the start of ground or vegetation disturbance or blasting activities to maximize the probability that nests that could potentially be impacted are detected. CDFW also recommends that surveys cover a sufficient area around the Project site to identify nests and determine their status. A sufficient area means any area potentially affected, either directly or indirectly, by the Project. In addition to direct impacts (i.e., nest destruction), noise, vibration, and movement of workers or equipment could also affect nests. CDFW recommends that a qualified biologist establish a behavioral baseline of all identified nests. Once Project activities begin, CDFW recommends having a qualified biologist continuously monitor nests to detect behavioral changes resulting from the Project. If behavioral changes occur, CDFW recommends halting the work causing that change and consulting with CDFW for additional avoidance and minimization measures.

Comment 5-30

If continuous monitoring of identified nests by a qualified biologist is not feasible, CDFW recommends a minimum no-disturbance buffer of 300 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors. These buffers are advised to remain in place until the breeding season has ended or until a qualified biologist has determined the birds have fledged and are no longer reliant upon the nest or on-site parental care for survival. Variance from these no-disturbance buffers is possible when there is a compelling biological or ecological reason to do so. CDFW recommends that a qualified wildlife biologist advise and support any variance from these buffers and notify CDFW in advance of implementing a variance.

CNDDB Positive Submission of Data: Please note that the California Natural Diversity Database (CNDDB) is populated by and records voluntary submissions of species detections. As a result, species may be present in locations not depicted in the CNDDB but where there are suitable habitats and features capable of supporting species. A lack of an occurrence record in the CNDDB does not mean a species is not present. In order to adequately assess any potential Project-related impacts to biological resources, surveys conducted by a qualified wildlife biologist/botanist during the appropriate survey period(s) and using the appropriate protocol survey methodology are warranted in order to determine whether or not any special-status species are present at or near the Project site.

Comment 5-31

Adjacent State Protected Lands: As mentioned above, the Willow Unit of CDFW's San Joaquin River Ecological Reserve (SJRER) surrounds the Project site on three sides (the fourth side being Friant Road). A portion of the Plant Site acreage has encroached upon property owned by the State of California (both CDFW and the San Joaquin River Conservancy). This encroachment outside of lands now owned by Cemex was a condition present at the time of CDFW's acquisition of the Willow Unit

Comment 5-32

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from the Ball Family. However, the condition was to be remedied within a certain timeframe of purchase but the intended retraction and restoration of the State-owned acreage never occurred. Cemex and CDFW have had preliminary discussions about this issue, which could be resolved with a property exchange and parcel boundary adjustment, but final resolution will be needed prior to ***any*** expanded activities at the Plant Site.

Comment 5-32 Cont.

Additionally, the Quarry Site borders Lost Lake Recreation Area. CDFW would like to note that Lost Lake Park not only is State-owned land, but the lands are under an expired lease with Fresno County. Both these CDFW lands provide habitat for several State and federally listed special-status species.

Comment 5-33

In addition to consultation with CDFW regional staff, CDFW recommends consultation with CDFW's Regional Ecological Reserve Management Unit staff well in advance of Project initiation to demonstrate accurate delineation of property boundaries to prevent inadvertent encroachment on CDFW owned lands. Consultation is also recommended to discuss planned ingress and egress to the Project site for the purposes of avoiding impacts on CDFW-owned lands, which is prohibited by Title 14 California Code of Regulations § 630. Please contact John Battistoni, Regional Ecological Reserve Management Unit Supervisor, at the address on the letterhead above or via email at John.Battistoni@wildlife.ca.gov.

Comment 5-34

Lake and Streambed Alteration: Project activities that substantially change the bed, bank, and channel of any river, stream, or lake are subject to CDFW's regulatory authority pursuant Fish and Game Code section 1600 et seq. Fish and Game Code section 1602 requires an entity to notify CDFW prior to commencing any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake (including the removal of riparian vegetation): (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. "Any river, stream, or lake" includes those that are ephemeral or intermittent as well as those that are perennial and may include those that are highly modified such as canals and retention basins.

Comment 5-35

CDFW is required to comply with CEQA in the issuance of a Lake or Streambed Alteration Agreement (LSAA); therefore, if the CEQA document approved for the Project does not adequately describe the Project and its impacts to lakes or streams, a subsequent CEQA analysis may be necessary for LSAA issuance. For information on notification requirements, please refer to CDFW's website (https://wildlife.ca.gov/Conservation/LSA) or contact CDFW staff in the Central Region Lake and Streambed Alteration Program at (559) 243-4593.

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Cumulative Impacts: Currently, the DEIR has a very broad analysis of cumulative impacts to biological resources and does not adequately evaluate impacts to specific resources. As such, the conclusions reached in the cumulative impacts analysis are not supported by substantial evidence and the analysis lacks sufficient rigor and transparency to adequately develop reasonable and feasible measures to reduce harm. To address this lack of evidence, CDFW recommends that a cumulative impact analysis be conducted for all biological resources that will either be significantly or potentially significantly impacted by implementation of the Project, including those whose impacts are determined to be less than significant with mitigation incorporated or for those resources that are rare or in poor or declining health and will be impacted by the Project, even if those impacts are relatively small (i.e., less than significant). CDFW recommends cumulative impacts be analyzed for the following species using an acceptable methodology to evaluate the impacts of past, present, and reasonably foreseeable future projects on resources and be focused specifically on the resource, not the Project. An appropriate resource study area should be identified and mapped for each resource being analyzed and utilized for this analysis. CDFW staff is available for consultation in support of cumulative impacts analyses as a trustee and responsible agency under CEQA.

Comment 5-36

Environmental Data

Comment 5-37

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, Section 21003, subd. (e).) Accordingly, please report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNDDB field survey form can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data. The completed form can be mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

Filing Fees

Comment 5-38

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying Project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, Section 753.5; Fish & G. Code, Section 711.4; Pub. Resources Code, Section 21089.)

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CONCLUSION

Comment 5-39

CDFW appreciates the opportunity to comment on the DEIR to assist Fresno County in identifying and mitigating Project impacts on biological resources.

More information on survey and monitoring protocols for sensitive species can be found at CDFW's website (https://www.wildlife.ca.gov/Conservation/Survey-Protocols). Please see the enclosed Mitigation Monitoring and Reporting Program (MMRP) table which corresponds with recommended mitigation measures in this comment letter. Questions regarding this letter or further coordination should be directed to Evelyn Barajas-Perez, Environmental Scientist, at (805) 503-5738 or Evelyn.Barajas-Perez@Wildlife.ca.gov.

Sincerely,

DocuSigned by:
FA83F09FE08945A...

Julie A. Vance
Regional Manager

ATTACHMENT

ec: United States Fish and Wildlife Service
Justin Sloan/ Justin_Sloan@fws.gov

CDFW LSA/1600/ R4LSA@wildlife.ca.gov
CDFW CESA/ R4CESA@wildlife.ca.gov

State Clearinghouse
Governor's Office of Planning and Research
State.Clearinghouse@opr.ca.gov

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REFERENCES

California Department of Fish and Wildlife. 2010. Bald eagle breeding survey instructions. California Department of Fish and Wildlife, Sacramento, California, USA.

California Department of Fish and Game. 2012. Staff report on burrowing owl mitigation. California Department of Fish and Game, Sacramento, California, USA.

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California Department of Fish and Wildlife. 2023. Survey considerations for California Endangered Species Act (CESA) candidate bumble bee species. Sacramento, California, USA.

Swainson's Hawk Technical Advisory Committee. 2000. Recommended timing and methodology for Swainson's hawk nesting surveys in California's Central Valley. Swainson's Hawk Technical Advisory Committee.

Docusign Envelope ID: 6DFE07F6-3BB8-4E82-9B6B-48276BBDAD5A

Attachment 1

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
RECOMMENDED MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

PROJECT: CEMEX Rockfield Quarry Modification Project

SCH No.: 2020060123

RECOMMENDED MITIGATION MEASURE	STATUS/DATE/INITIALS
Before Disturbing Soil or Vegetation	
Fully Protected Raptors	
Recommended Mitigation Measure 1: Fully protected raptor Surveys	
SWHA	
Recommended Mitigation Measure 3: SWHA surveys	
Recommended Mitigation Measure 5: SWHA take authorization	
BUOW	
Recommended Mitigation Measure 6: BUOW surveys	
Recommended Mitigation Measure 8: BUOW take authorization	
TRBL	
Recommended Mitigation Measure 9: TRBL surveys	
Recommended Mitigation Measure 11: TRBL take authorization	
CBB	
Recommended Mitigation Measure 12: CBB surveys	
Recommended Mitigation Measure 14: CBB take authorization	
Chinook Salmon	
Recommended Mitigation Measure 15: Chinook salmon consultation	
During Construction	
Fully Protected Raptors	
Recommended Mitigation Measure 2: Fully protected raptors avoidance buffer	
SWHA	
Recommended Mitigation Measure 4: SWHA avoidance buffer	
BUOW	
Recommended Mitigation Measure 8: BUOW avoidance buffer	
TRBL	

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Recommended Mitigation Measure 10: TRBL avoidance buffer	
CBB	
Recommended Mitigation Measure 13: CBB avoidance buffer	

APPENDIX M-2
ORGANIZATIONS AND LOCAL BUSINESSES COMMENT LETTERS (LETTERS #16-68)

From:	Leo & Carol
To:	Randall , David A.
Subject:	Cemex EIR No. 7763 Concerns
Date:	Sunday, February 2, 2025 1:55:05 PM
Attachments:	8k5ggdk8Qv06F0UY.png NS2h659dlUpLSTJv.png Cemex rebuttal.pdf

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David,

My name is Leo Labbe and I currently serve as the club secretary, I am also a past President of the local Fly Fishers for Conservation here in Fresno County. We have over 200 active members that support and want to conserve our precious environment.

I was totally unaware of the meeting that occurred in January? Comment 16-1

However, I did receive the draft of the EIR in the mail and I am very concerned that this proposal even exists and would like to ask how was the meeting made public? I was involved in the original proposal. Also what are the next steps and possibly what can we do as an organization to share our thoughts and concerns?

I have attached a list of issues. Can you please respond to the EMAIL to confirm that you have received them. Comment 16-2

I also would appreciate your thoughts on how we should proceed as concerned citizens to this proposal. Comment 16-3

I appreciate your help and I am available to discuss via EMAIL or by phone.

Regards,

Leo Labbe 559 281-2713pap

CEMEX Proposal issues

This is probably one of the most spectacular parcels of land in the area and the public has virtually no access to it and overall, very limited access to the San Joaquin River. There are a few parks that provide limited access for a fee, but in general most of the land is private or used commercially for mining and pilfering of this precious limited resource. This agreement will insure this limitation is extended for the next 100 years. Comment 16-4

The process is being expedited in a period where public input and the opportunity to voice concerns are very difficult. I have to ask the obvious question which is, why rush the approval process for an agreement that will last 100 years. What is the hurry? A public meeting was held June 24th and comments accepted through July 6th. Only 8 business days for a commitment that will last for 100 years. Let's slow down and give the people of Fresno County the opportunity to learn about this project and the potential impact that it will have on our Great-Grandchildren who are yet to be born! Comment 16-5

During the last decade, the CDFW has successfully begun the process of re-introducing Salmon into the San Joaquin River. The impact on this restoration will be significant and could prove to be detrimental to its success! Comment 16-6

A 100year agreement is unthinkable and will continue to limit its use for many generations to come. Comment 16-7

As a society, we have the responsibility to end this tragic use of the land for the profit of a foreign LLC. Return the land to the public and don't add to the pollution of our precious water, air, noise and traffic! There are many other places where gravel can be mined. Why select this pristine piece of land to be permanently destroyed and potentially impact the lives and living conditions of the citizens of Fresno County and add contamination to the already unhealthy environment that already exists in Fresno. Comment 16-8

This land could be used for many other purposes that would be much more profitable for the county. Not only by generating more tax revenue, but also potentially adding legitimate business revenue for much more appropriate use on this special property, such as increasing tourist, recreational and business revenue to the County. Comment 16-9

Cemex LLC is part of a Mexican corporation and, by design, they have Limited Liability and if something does happens, then no one will be held responsible! The current agreement has provisions that state that the land will be returned to natural conditions after the 100 year period. If the current agreement ends in 2023, Cemex will move out of the area and leave us with the mess that they have already created. Comment 16-10

They have an existing agreement that is not measured for performance. Input from the ZOOM meeting was that they continually violated the current work time schedule and had many environmental violations that were not addressed. Comment 16-11

Truck Traffic increasing to over 1000 per day! A 10 hour day means 100 trucks per hour. Friant Road was not expanded to 4 lanes exclusively for CEMEX truck flow? Who will pay for additional wear and tear of the highways? Comment 16-12

What will be the impact on wildlife that habitats in the area? Please review the Fresno Bee video that shows the deplorable conditions of their current site. Comment(s) 16-13 / 16-14

Here is the link:

https://www.fresnobee.com/article243753187.html

Now, imagine tripling that area. What kind of mess are we allowing them to create? Wildlife does not and will not exists in these conditions. There is no landscaping or trees of any kind. All we have are dusty roads with lots of equipment adding to our pollution problem.

Comment(s) 16-15 / 16-16

Fracking and blasting a 600ft mine will have a tremendous impact on the San Joaquin River that will be within 200 feet from the area. Water will be used to clean the aggregate and accidental discharge could occur polluting the river. Seepage from the river and the surrounding aquifer will devastate the river and surrounding wells. If we have another emergency release of Lake Millerton like we did in 1996; the pollution and debris from this mining operation will impact all the surroundings on its way to the ocean! All hopes of re-introducing Salmon to the river will be impacted by the blasting near their spawning waters.

Comment(s) 16-17 / 16-18 16-19 / 16-20

In closing, this land offers much more potential than an ugly private mine for a foreign LLC for the next 100 years. It could become an amazing public land to be enjoyed by the people of Fresno County. However, if this project is approved, the river will become an eyesore and an environmental hazard for the area that is already plagued by those many issues.

Comment 16-21

What are the benefits to the county and community? We all have a responsibility to be good Sheppard's of the land. This project does not come close to meeting this responsibility. If this passes, historians will look back and wonder what the county officials were thinking?

I look forward to hearing from you regarding this critical timely issue.

Please feel free to contact me if you would like clarity or more information.

Thanks for listening,

Leo Labbe

Floyd Johnston Construction Co., Inc.

2301 Herndon Ave.
Clovis, CA 93611
Ph. (559) 299-7373
Contractor's License No. 280281

February 5, 2025

The Honorable TBD
Fresno County Planning Commission
2281 Tulare St.
Fresno, CA 93724

RE: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Chairman and Planning Commissioners,

On behalf of Floyd Johnston Construction Co., Inc, I am writing in support of Cemex's Rockfield Quarry Modification Project. Comment 17-1

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region.

Transporting aggregate from distant sources results in increased construction costs, fuel consumption, greenhouse gas emissions, and would contribute to existing traffic congestion. According to the Department of Conservation, transportation costs alone can increase 22 cents per ton for every additional mile traveled. Consequently, these higher construction costs are passed on to businesses, homeowners and county taxpayers.

Cemex has been a steadfast and reliable supplier of building materials needed to grow the region's economy and the county's investments in public infrastructure. Aggregates from their Rockfield Quarry have been used in the businesses, homes, roads and schools found in most of our neighborhoods.

Importantly, Cemex's proposed modification plan also includes considerable resources for wildlife and habitat protection, 470 acres of open space with riparian areas, ponds, lakes, and native vegetation, and an easement for the Parkway Plan to expand the existing pedestrian and bicycle trail along the San Joaquin River that will benefit the local community.

Cemex has developed a constructive and thoughtful plan that serves the region's building, water, environmental and recreational needs, while remaining committed to being a good corporate citizen and responsible neighbor. Thank you for recognizing the benefits of having a quarry located in your community.

Sincerely,

Daniel Frank

Daniel Frank/ Dispatch

CALIBER
CONTRACTING SERVICES, INC.

February 7, 2025

Mr David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724
drandall@fresnocountyca.gov

RE: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Randall,

On behalf of Caliber Contracting Services Inc, I am writing in support of Cemex's Rockfield Quarry Modification Project. Comment 18-1

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region.

Transporting aggregate from distant sources results in increased construction costs, fuel consumption, greenhouse gas emissions, and would contribute to existing traffic congestion. According to the Department of Conservation, transportation costs alone can increase 22 cents per ton for every additional mile traveled. Consequently, these higher construction costs are passed on to businesses, homeowners and county taxpayers.
Cemex has been a steadfast and reliable supplier of building materials needed to grow the region's economy and the county's investments in public infrastructure. Aggregates from their Rockfield Quarry have been used in the businesses, homes, roads and schools found in most of our neighborhoods.

Importantly, Cemex's proposed modification plan also includes considerable resources for wildlife and habitat protection, 470 acres of open space with riparian areas, ponds, lakes, and native vegetation, and an easement for the Parkway Plan to expand the existing pedestrian and bicycle trail along the San Joaquin River that will benefit the local community.

Cemex has developed a constructive and thoughtful plan that serves the region's building, water, environmental and recreational needs, while remaining committed to being a good corporate citizen and responsible neighbor.
Thank you for recognizing the benefits of having a quarry located in your community.

Sincerely,

Kim L Nulick
Executive Vice President

CC: The Board of Supervisors via Clerk of the Board of the Board of Supervisors, Bernice E. Seidel at bseidel@co.fresno.ca.us

*5191 E. Dakota Avenue • Fresno, CA 93727 • Tel: 559/**330-6300** • Fax: 559/233-6200*
CA License Number 1049483 • DIR Number PW-LR-1000387079

From:	Samantha McCarty
To:	Randall , David A.
Cc:	Nichole Escalon; Bob Pennell; Sara Lively
Subject:	Draft EIR for the Proposed Modification to the Existing CEMEX Rockfield Quarry (EIR No. 7763 and Unclassified CUP Application Nos. 3666 and 3667)
Date:	Tuesday, February 11, 2025 4:30:33 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David,

Comment 19-1

Thank you for contacting the Santa Rosa Rancheria Tachi-Yokut Tribe regarding the proposed changes to the CEMEX Rockfield Quarry EIR. The Tribe will be deferring to Table Mountain Rancheria for this matter. I've included Robert Pennell and Sara Lively on this email who are a part of TMR's Cultural Department staff.

If you have any questions, comments, and or concerns please do not hesitate to contact Nichole or myself. Thank you.

Sincerely,

Samantha McCarty
Santa Rosa Rancheria Tachi-Yokut Tribe
Cultural Specialist ll
SMcCarty@tachi-yokut-nsn.gov
Cell: (559) 633-6640
Direct Line: (559) 925-2591
Office: (559) 924-1278 x 4091

PLEASE KEEP ALL CULTURAL STAFF IN EMAILS UNLESS STATED OTHERWISE

David Randall Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX Rockfield Quarry EIR 7763 Proposal and the Future of the San Joaquin River

Dear David Randall,

As a member of Fresno Fly Fishers for Conservation and a concerned resident of Fresno County, I am writing to express my deep opposition to the CEMEX proposal that would extend commercial mining operations on the banks of the San Joaquin River for the next 100 years. Comment 20-1

This area is one of the most spectacular parcels of land in the region, yet public access remains extremely limited. Instead of prioritizing conservation and community use, this agreement would extend private and commercial restrictions, preventing generations of Fresno County residents from enjoying this vital natural resource. Comment 20-2

I am particularly concerned about the expedited approval process for this 100-year commitment. The brief public comment period, which ends on March 10th is far too little time for Fresno County residents to learn about the project's consequences. A project of this magnitude demands thorough consideration, not a rushed decision that will impact future generations. Comment 20-3

The environmental consequences of this project cannot be ignored. The California Department of Fish and Wildlife (CDFW) has made significant strides in reintroducing salmon to the San Joaquin River, yet this mining operation could jeopardize these efforts. The increased truck traffic, potential river pollution, and habitat destruction would be devastating for local wildlife. Fracking and blasting a 600-foot mine so close to the river could lead to accidental discharges, seepage, and contamination of the surrounding water table endangering both aquatic ecosystems and local wells. Comment(s) 20-4 20-5 20-6

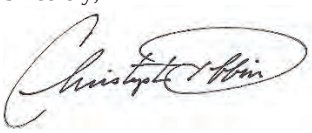
Beyond the environmental harm, this project poses economic concerns. CEMEX, a foreign-owned LLC, is granted limited liability by design, meaning if damages occur, there may be little accountability. Moreover, the current agreement lacks measurable performance oversight, and reports indicate repeated violations of work schedules and environmental standards. The increased truck traffic alone—up to 1,000 trucks per day will degrade our roads and impact local residents, with little assurance that CEMEX will be held responsible for the consequences. Comment(s) 20-7, 20-8 20-9 20-10

Fresno County deserves better. Rather than approving a destructive mining operation, this land should be preserved and made accessible to the public. A park or conservation area would not only protect the environment but could also generate long-term revenue through recreation, tourism, and sustainable business opportunities. A private mine will only benefit a foreign corporation, while our community bears the long-term costs. Comment 20-11

I urge you to reconsider this agreement and advocate for a better future for Fresno County. Our community has the right to more input and a greater say in how this land is used. Please extend the public comment period and conduct a thorough review of the environmental and economic impacts before making a decision that will affect our region for the next century. Comment 20-12

Thank you for your time and consideration. I look forward to your response on this critical issue.

Sincerely,



Fresno Fly Fishers for Conservation

Clean Cut
LANDSCAPE, INC.

April 10, 2024

Mr David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724
drandall@fresnocountyca.gov

RE: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Randall,

Comment 21-1

On behalf of Clean Cut Landscape Inc., I am writing in support of Cemex's Rockfield Quarry Modification Project. We have been consistently using CEMEX for years on projects in the public works sector in the Fresno area.

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region.

Transporting aggregate from distant sources results in increased construction costs, fuel consumption, greenhouse gas emissions, and would contribute to existing traffic congestion. According to the Department of Conservation, transportation costs alone can increase 22 cents per ton for every additional mile traveled. Consequently, these higher construction costs are passed on to businesses, homeowners and county taxpayers.

Cemex has been a steadfast and reliable supplier of building materials needed to grow the region's economy and the county's investments in public infrastructure. Aggregates from their Rockfield Quarry have been used in the businesses, homes, roads and schools found in most of our neighborhoods.

Importantly, Cemex's proposed modification plan also includes considerable resources for wildlife and habitat protection, 470 acres of open space with riparian areas, ponds, lakes, and native vegetation, and an easement for the Parkway Plan to expand the existing pedestrian and bicycle trail along the San Joaquin River that will benefit the local community.

Cemex has developed a constructive and thoughtful plan that serves the region's building, water, environmental and recreational needs, while remaining committed to being a good corporate citizen and responsible neighbor.

Thank you for recognizing the benefits of having a quarry located in your community.

Thank you!

Karry Wendel
Project Manager
Clean Cut Landscape Inc.
8406 N. Armstrong
Clovis, CA. 93619
Office, 559-322-2071
Fax, 559-322-2071
Cell, 559-269-6593
Email karry@cleancutland.com

CC: The Board of Supervisors via Clerk of the Board of the Board of Supervisors, Bernice E. Seidel at bseidel@co.fresno.ca.us

David Randall Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX Rockfield Quarry EIR 7763 Proposal and the Future of the San Joaquin River

Dear David Randall,

As a member of Fresno Fly Fishers for Conservation and a concerned resident of Fresno County, I am writing to express my deep opposition to the CEMEX proposal that would extend commercial mining operations on the banks of the San Joaquin River for the next 100 years. Comment 22-1

This area is one of the most spectacular parcels of land in the region, yet public access remains extremely limited. Instead of prioritizing conservation and community use, this agreement would extend private and commercial restrictions, preventing generations of Fresno County residents from enjoying this vital natural resource. Comment 22-2

I am particularly concerned about the expedited approval process for this 100-year commitment. The brief public comment period, which ends on March 10th is far too little time for Fresno County residents to learn about the project's consequences. A project of this magnitude demands thorough consideration, not a rushed decision that will impact future generations. Comment 22-3

The environmental consequences of this project cannot be ignored. The California Department of Fish and Wildlife (CDFW) has made significant strides in reintroducing salmon to the San Joaquin River, yet this mining operation could jeopardize these efforts. The increased truck traffic, potential river pollution, and habitat destruction would be devastating for local wildlife. Fracking and blasting a 600-foot mine so close to the river could lead to accidental discharges, seepage, and contamination of the surrounding water table endangering both aquatic ecosystems and local wells. Comment(s) 22-4 22-5 22-6

Beyond the environmental harm, this project poses economic concerns. CEMEX, a foreign-owned LLC, is granted limited liability by design, meaning if damages occur, there may be little accountability. Moreover, the current agreement lacks measurable performance oversight, and reports indicate repeated violations of work schedules and environmental standards. The increased truck traffic alone—up to 1,000 trucks per day will degrade our roads and impact local residents, with little assurance that CEMEX will be held responsible for the consequences. Comment(s) 22-7, 22-8 22-9 22-10

Fresno County deserves better. Rather than approving a destructive mining operation, this land should be preserved and made accessible to the public. A park or conservation area would not only protect the environment but could also generate long-term revenue through recreation, tourism, and sustainable business opportunities. A private mine will only benefit a foreign corporation, while our community bears the long-term costs. Comment 22-11

I urge you to reconsider this agreement and advocate for a better future for Fresno County. Our community has the right to more input and a greater say in how this land is used. Please extend the public comment period and conduct a thorough review of the environmental and economic impacts before making a decision that will affect our region for the next century. Comment 22-12

Thank you for your time and consideration. I look forward to your response on this critical issue.

Sincerely,

Ronald L. Hicks
(559) 285-9869
Fresno Fly Fishers for Conservation

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

February 19, 2025

Ronald Hicks
1080 Holland Ave.
Clovis, CA 93612

Comment letter on CEMEX Rockfield Quarry EIR 7763

Mr. Hicks

We received your enclosed letter on February 13, 2025, in opposition to the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From:	Michael Branco
To:	Randall , David A.
Cc:	Clerk/BOS
Subject:	Letter regarding Cemex - Rockfield Quarry Modifications
Date:	Friday, February 14, 2025 11:05:10 AM
Attachments:	Letter to Fresno County - Board of Supervisors.pdf

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr Randall,

Please find the attached letter regarding the Cemex - Rockfield Aggregates plant modifications.

Comment 23-1

I've been fortunate enough to have worked with this facility on many projects over the last 35 years. The information provided in this letter is an honest and fair outline of what companies like Cemex bring to a community.

I would ask that the Fresno County staff delivers an approval for Cemex's plans. This company produces a valuable resource and contributes to the growth of the community as well as solid, well paying jobs for the people in your region.

Kindest Regards,

Mike Branco
American Industrial Equipment

925-454-3450 office

AMERICAN INDUSTRIAL EQUIPMENT
4749-G Bennett Drive
Livermore, CA 94551

2/14/2025

Mr David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724
drandall@fresnocountyca.gov

RE: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Randall,

On behalf of American Industrial Equipment, I am writing in support of Cemex's Rockfield Quarry Modification Project.

Comment 23-1 Cont.

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region.

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Importantly, Cemex's proposed modification plan also includes considerable resources for wildlife and habitat protection, 470 acres of open space with riparian areas, ponds, lakes, and native vegetation, and an easement for the Parkway Plan to expand the existing pedestrian and bicycle trail along the San Joaquin River that will benefit the local community.

Cemex has developed a constructive and thoughtful plan that serves the region's building, water, environmental and recreational needs, while remaining committed to being a good corporate citizen and responsible neighbor.

Thank you for recognizing the benefits of having a quarry located in your community.

Sincerely,

Michael Branco

President / American Industrial Equipment

CC: The Board of Supervisors via Clerk of the Board of the Board of Supervisors, Bernice E. Seide @ clerkBOS@FresnoCountyCa.Gov

PAPÉ
MACHINERY

2/14/2025

Mr David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724
drandall@fresnocountyca.gov

RE: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Randall,

On behalf of Pape' Machinery, I am writing in support of Cemex's Rockfield Quarry Modification Project. Comment 24-1

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region.

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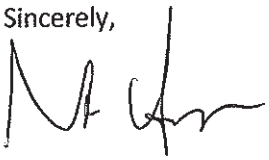
Thank you for recognizing the benefits of having a quarry located in your community.

Sincerely,



Mike Higgins

General Manager Central California Region

CC: The Board of Supervisors via Clerk of the Board of the Board of Supervisors, Bernice E. Seide @ clerkBOS@FresnoCountyCa.Gov

From:	Robert Joubert
To:	Randall , David A.
Cc:	Clerk/BOS
Subject:	Cemex Rockfield Quarry
Date:	Monday, February 17, 2025 11:36:29 AM
Attachments:	20250217112537853.pdf 20250217112528765.pdf

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Jameson
Hydro Crane Service LLC
dba Kroon Berg Crane

2/15/2025

Mr David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724

RE: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Randall,

Jameson Hydro Crane Service, LLC
1110 N. Cain St.
Visalia, CA 93292

On behalf of Jameson Hydro Crane Service, LLC, I am writing in support of Cemex's Rockfield Quarry Modification Project. Comment 25-1

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region.

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Cemex has developed a constructive and thoughtful plan that serves the region's building, water, environmental and recreational needs, while remaining committed to being a good corporate citizen and responsible neighbor.

Thank you for recognizing the benefits of having a quarry located in your community.

Sincerely,

Robert Jarbeau (Manager)

A&E
WELDING and MACHINE

2/15/2025

Mr David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724

RE: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Randall,

A&E Welding, Inc
1110 N. Cain St.
Visalia, CA 93292

On behalf of A&E Welding, Inc, I am writing in support of Cemex's Rockfield Quarry Modification Project.

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region.

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Cemex has developed a constructive and thoughtful plan that serves the region's building, water, environmental and recreational needs, while remaining committed to being a good corporate citizen and responsible neighbor.

Thank you for recognizing the benefits of having a quarry located in your community.

Sincerely,

Robert Jourbert (President)

GENERAL TEAMSTERS UNION LOCAL NO. 431

Packinghouse Employees, Warehousemen, Drivers & Helpers, Dried Fruit, & Nut Packers & Dehydrators; Fresno and Madera Counties, California
Affiliated with the International Brotherhood of Teamsters

Steve Sharp
President

Chris Garlick
Secretary-Treasurer

Fred Willshaw
Vice President

Renee Wilson
Recording Secretary

Cliff Amende
Trustee

Rod Hollett
Trustee

Mike Pratt
Trustee

Juzan Mejia
Business Representative

Michelle Mineni
Office Manager

Cruz Turner
TITAN Operator

Mel Gonzalez
Administrative Assistant

February 18, 2025

Via: drandall@fresnocountyca.gov

Mr. David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724

RE: Support Cemex's Modification Plan for the Rockfield Quarry

Dear Mr. Randall,

On behalf of General Teamsters Union Local No. 431, I am writing in support of Cemex's Rockfield Quarry Modification Project.

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region. Cemex directly supports over 90 people in the Fresno region, providing high quality, high paying jobs, many of them union jobs, as a source of economic security for their families.

Comment 26-1

Cemex has been a steadfast and reliable supplier of building materials needed to grow the region's economy and the county's investments in public infrastructure. Aggregates from their Rockfield Quarry have been used in the businesses, homes, roads and schools found in most of our neighborhoods.

Again, on behalf of our members and the communities who depend on a local source of construction aggregate to build homes, businesses and public sector infrastructure, we urge the Fresno County Planning Commission to approve the modification plan without delay.

Thank you for recognizing the benefits of having a quarry located in your community.

Sincerely,

Steve Sharp, President
General Teamsters Union Local No. 431

CC: The Board of Supervisors via Clerk of the Board of the Board of Supervisors, Bernice E. Seide @ clerkBOS@FresnoCountyCa.Gov

1140 W Olive Ave., Fresno, CA 93728 (559) 486-5410 office / (559)-441-1743 fax
Email: teamsters@teamster431.org

559 Pro Landscape, Inc.
10204 CA-41
Madera, CA. 93636
February 5, 2025

The Honorable TBD
Fresno County Planning Commission
2281 Tulare Street
Fresno, CA. 93724

RECEIVED
FEB 12-2025
CLERK. BOARD OF SUPERVISORS

RE: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Chairman and Planning Commissioners,

On behalf of **559 Pro Landscape, Inc.** I am writing in support of Cemex's Rockfield Quarry Modification Project.

Comment 27-1

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate in Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region.

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Importantly Cemex's proposed modification plan also includes considerable resources for wildlife and habitat protection 470 acres of open space with riparian areas, ponds, lakes, and native vegetation, and an easement for the parkway Plan to expand the existing pedestrian and bicycle trail along the San Joaquin River that will benefit the local community.

Cemex has developed a constructive and thoughtful plant that serves the region's building, water, environmental and recreational needs, while remaining committed to being a good corporate citizen and responsible neighbor.

Thank you for recognizing the benefit of having a quarry located in your community.

Sincerely,

Chase Hagar- Owner
559 Pro Landscape, Inc.

CC: The Honorable Nathan Magsig, County Supervisor District Five The Honorable Garry Bredefeld, County Supervisor District Two
David Randall, Planner, Fresno County Division of Public Works and Planning

559 Pro Landscape, Inc
10204 Highway 41
Madera, CA. 93636

FRESNO CA 936
7 FEB 2025 PM 1 L

Fresno County Planning Commission
2281 Tulare St
Fresno, CA. 93724

93724-

BUILDING & CONSTRUCTION TRADES COUNCIL, AFL-CIO

FRESNO, MADERA, KINGS AND TULARE COUNTIES

February 20, 2025

Mr. David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724
drandall@fresnocountyca.gov

RE: Support Cemex's Modification Plan for the Rockfield Quarry

Dear Mr. Chairman and Planning Commissioners:

On behalf of the Fresno, Madera, Kings and Tulare Counties Building and Construction Trades Council, I am writing in support of Cemex's Rockfield Quarry Modification Project.

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region. Cemex directly supports over 90 people in the Fresno region, providing high quality, high paying jobs, many of them union jobs, as a source of economic security for their families.

Comment 28-1

Cemex has been a steadfast and reliable supplier of building materials needed to grow the region's economy and the county's investments in public infrastructure. Aggregates from their Rockfield Quarry have been used in the businesses, homes, roads and schools found in most of our neighborhoods.

Again, on behalf of our members and the communities who depend on a local source of construction aggregate to build homes, businesses and public sector infrastructure, we urge the Fresno County Planning Commission to approve the modification plan without delay.

Thank you for recognizing the benefits of having a quarry located in your community.

Sincerely,

Chuck Riojas
Financial Secretary-Treasurer

CC: The Board of Supervisors via Clerk of the Board of the Board of Supervisors, Bernice E. Seide @ clerkBOS@FresnoCountyCa.Gov

From:	Clerk/BOS
To:	District 1; District 2; District 3; District 4; District 5; Nerland, Paul; Hill, Edward; Buck, Samantha; Flores Becker, Amina
Cc:	Seidel, Bernice; Espino, Sal; White, Steven; Jimenez, Bernard; Randall , David A.
Subject:	FW: Support CEMEX's Modification Plan for the Rockfield Quarry
Date:	Friday, February 21, 2025 2:22:16 PM
Attachments:	Outlook-hamya4rw.png Rockfield Support Letter-ABC NorCal.pdf image001.png

Good Afternoon,

Received email below in our Clerk/BOS inbox. The attached letter is not related to a current agenda item.

Dean Dela Cruz | **Deputy Clerk II**
Board of Supervisors
2281 Tulare St., Room 301, Fresno, CA 93721
Main Office: (559) 600-3529, Option 4
deandelacruz@fresnocountyca.gov
The County of Fresno is an Equal Opportunity Employer

From: Fay Yassini <fay@abcnorcal.org>
Sent: Friday, February 21, 2025 11:29 AM
To: Randall , David A. <drandall@fresnocountyca.gov>
Cc: Clerk/BOS <ClerkBOS@fresnocountyca.gov>; Matthew Estipona <matthew@abcnorcal.org>
Subject: Support CEMEX's Modification Plan for the Rockfield Quarry

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Hello,

Attached, please find a letter in support of CEMEX's Modification Plan for the Rockfield Quarry on behalf of the Government Affairs team, Associated Builders and Contractors Northern California.

Matthew Estipona

Director of Government Affairs

matthew@abcnorcal.org | (m) 415.235.2853

Fay Yassini

Government Affairs Manager

fay@abcnorcal.org | (m) 925.623.2123

Associated Builders and Contractors Northern California
#ABCMeritShopProud

February 21, 2025

Mr David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724
drandall@fresnocountyca.gov

RE: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Randall,

We are writing in support of Cemex's Rockfield Quarry Modification Project.

Comment 29-1

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region.

Transporting aggregate from distant sources results in increased construction costs, fuel consumption, greenhouse gas emissions, and would contribute to existing traffic congestion. According to the Department of Conservation, transportation costs alone can increase 22 cents per ton for every additional mile traveled. Consequently, these higher construction costs are passed on to businesses, homeowners and county taxpayers.

Cemex has been a steadfast and reliable supplier of building materials needed to grow the region's economy and the county's investments in public infrastructure. Aggregates from their Rockfield Quarry have been used in the businesses, homes, roads and schools found in most of our neighborhoods.

Importantly, Cemex's proposed modification plan also includes considerable resources for wildlife and habitat protection, 470 acres of open space with riparian areas, ponds, lakes, and native vegetation, and an easement for the Parkway Plan to expand the existing pedestrian and bicycle trail along the San Joaquin River that will benefit the local community.

Cemex has developed a constructive and thoughtful plan that serves the region's building, water, environmental and recreational needs, while remaining committed to being a good corporate citizen and responsible neighbor.

Thank you for recognizing the benefits of having a quarry located in your community.

Sincerely,

Matthew Estipona

Government Affairs and Grassroots Advocacy Director

matthew@abcnorcal.org

Fay Yassini

Government Affairs Manager

fay@abcnorcal.org

CC: The Board of Supervisors via Clerk of the Board of the Board of Supervisors, Bernice E. Seide @ clerkBOS@FresnoCountyCa.Gov

LABORERS' INTERNATIONAL UNION of North America
HONOR STRENGTH JUSTICE 294 Est.1911

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Business Manager
Secretary-Treasurer

JAMES CANTU
President

GARY DEAVER
Vice-President

JEFF FEAGIN
Recording Secretary

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(559) 255-7898 Fax

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Visalia, CA 93291
(559) 734-9426 Office
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LiUNA! LOCAL 294

Feel the Power

February 21, 2025

Mr. David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724
drandall@fresnocountyca.gov

RE: Support Cemex's Modification Plan for the Rockfield Quarry

Dear Mr. Chairman and Planning Commissioners,

On behalf of LIUNA Local 294, I am writing in support of Cemex's Rockfield Quarry Modification Project.

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region. Cemex directly supports over 90 people in the Fresno region, providing high quality, high paying jobs, many of them union jobs, as a source of economic security for their families.

Comment 30-1

Cemex has been a steadfast and reliable supplier of building materials needed to grow the region's economy and the county's investments in public infrastructure. Aggregates from their Rockfield Quarry have been used in the businesses, homes, roads and schools found in most of our neighborhoods.

Again, on behalf of our members and the communities who depend on a local source of construction aggregate to build homes, businesses and public sector infrastructure, we urge the Fresno County Planning Commission to approve the modification plan without delay.

Thank you for recognizing the benefits of having a quarry located in your community.

Sincerely,

James Hammond
Business Manager/Secretary Treasurer

CC: The Board of Supervisors via Clerk of the Board of the Board of Supervisors, Bernice E. Seide @ clerkBOS@FresnoCountyCa.Gov

From:	Emily Braswell
To:	Randall , David A.
Cc:	Allan Braswell
Subject:	Support Letter for Cemex"s Plant Expansion
Date:	Monday, February 24, 2025 2:59:22 PM
Attachments:	cemex letter.pdf

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hello!

Please see attached Braswell's Support Letter for Cemex's Plant Expansion.

Thank You,
Emily Braswell

Office: (559) 375-1767 Ext: 100 | Fax: (559) 375-1767
Cell Phone: (559) 392-9342
Email: EmilyBraswell@Braswell20.com
Address: 1175 Shaw Ave #104 PMB 310, Clovis, CA, 93612
License #: 1068526 | DIR# PWLR1000666606

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February 24th, 2025

Cemex

Mr. David Randall

Fresno County Division of Public Works and Planning

2281 Tulare Street

Fresno, CA 93724

drandall@fresnocountyca.gov

RE: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Randall,

On behalf of Braswell, I am writing in support of Cemex's Rockfield Quarry Modification Project.

Comment 31-1

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region.

Transporting aggregate from distant sources results in increased construction costs, fuel consumption, greenhouse gas emissions, and would contribute to existing traffic congestion. According to the Department of Conservation, transportation costs alone can increase 22 cents per ton for every additional mile traveled. Consequently, these higher construction costs are passed on to businesses, homeowners and county taxpayers.

Cemex has been a steadfast and reliable supplier of building materials needed to grow the region's economy and the county's investments in public infrastructure. Aggregates from their Rockfield Quarry have been used in the businesses, homes, roads and schools found in most of our neighborhoods.

Importantly, Cemex's proposed modification plan also includes considerable resources for wildlife and habitat protection, 470 acres of open space with riparian areas, ponds, lakes, and native vegetation, and an easement for the Parkway Plan to expand the existing pedestrian and bicycle trail along the San Joaquin River that will benefit the local community.

Cemex has developed a constructive and thoughtful plan that serves the region's building, water, environmental and recreational needs, while remaining committed to being a good corporate citizen and responsible neighbor

Thank you for recognizing the benefits of having a quarry located in your community.

Sincerely,

Allan Braswell

Braswell

February 24, 2025

Mr David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724
drandall@fresnocountyca.gov

RE: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Randall,

On behalf of Heavy Road & Rail Inc., I am writing to express our strong support for Cemex's Rockfield Quarry Modification Project. For the past 100 years, Cemex's Rockfield Quarry has been a reliable and indispensable source of construction aggregate in the Fresno region. Access to a local and affordable aggregate supply is essential for businesses considering expansion or relocation to Fresno County, as well as for public agencies investing taxpayer dollars in infrastructure projects.

Comment 32-1

The Fresno region is expected to see increased demand for new construction in the coming decades, requiring over 6 million tons of construction aggregate annually for the next 50 years. This demand must be met locally, rather than relying on transportation from outside the region. Transporting aggregates from distant sources not only increases construction costs, fuel consumption, and greenhouse gas emissions but also contributes to worsening traffic congestion. According to the Department of Conservation, transportation costs alone can rise by 22 cents per ton for every additional mile traveled, leading to higher costs that are ultimately passed on to businesses, homeowners, and taxpayers.

Cemex has long been a dependable supplier of the building materials essential for the region's growth and the county's public infrastructure investments. Aggregates from the Rockfield Quarry have been integral to the construction of homes, businesses, roads, and schools throughout our neighborhoods.

Notably, Cemex's proposed modification plan includes extensive resources for wildlife and habitat protection, covering 470 acres of open space with riparian areas, ponds, lakes, and native vegetation. Additionally, the plan includes an easement for the Parkway Plan, which will expand the existing pedestrian and bike trail along the San Joaquin River, benefiting the local community.

Cemex has developed a thoughtful, balanced approach that addresses the region's need for construction materials, water conservation, environmental protection, and recreational spaces, all while remaining a responsible corporate citizen and neighbor.

Thank you for considering the essential benefits of having a quarry in our community. We fully support the Rockfield Quarry Modification Project and its potential to foster sustainable growth for Fresno County.

Sincerely,

David Cruce
President
Heavy Road & Rail Inc.

Jim Crawford Construction Company, Inc.

1189 Hoblitt, Clovis Ca 93612
Telephone (559) 299-0306
Fax (559) 299-1958
Contractors License No. 472099

February 24, 2025

Mr David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724
drandall@fresnocountyca.gov

RE: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Randall,

On behalf of Jim Crawford Const. Co. Inc., I am writing in support of Cemex's Rockfield Quarry Modification Project. Comment 33-1

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region.

Transporting aggregate from distant sources results in increased construction costs, fuel consumption, greenhouse gas emissions, and would contribute to existing traffic congestion. According to the Department of Conservation, transportation costs alone can increase 22 cents per ton for every additional mile traveled. Consequently, these higher construction costs are passed on to businesses, homeowners and county taxpayers.

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Importantly, Cemex's proposed modification plan also includes considerable resources for wildlife and habitat protection, 470 acres of open space with riparian areas, ponds, lakes, and native vegetation, and an easement for the Parkway Plan to expand the existing pedestrian and bicycle trail along the San Joaquin River that will benefit the local community.

Cemex has developed a constructive and thoughtful plan that serves the region's building, water, environmental and recreational needs, while remaining committed to being a good corporate citizen and responsible neighbor.

Thank you for recognizing the benefits of having a quarry located in your community.

Sincerely,

Sarkis Nersesian, Estimator
Jim Crawford Const. Co. Inc.

CC: The Board of Supervisors via Clerk of the Board of the Board of Supervisors, Bernice E. Seidel at bseidel@co.fresno.ca.us

OPERATING ENGINEERS
LOCAL 3
AFL-CIO
N. CALIFORNIA · N. NEVADA · HAWAII · UTAH

DISTRICT 50
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CLOVIS, CA 93611
PHONE 559.229.4083
FAX 559.229.4825

2/20/2025

Mr. David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724
drandall@fresnocountyca.gov

RE: Support Cemex's Modification Plan for the Rockfield Quarry

Dear Mr. Chairman and Planning Commissioners,

On behalf of the Operating Engineers Local Union #3, I am writing in support of Cemex's Rockfield Quarry Modification Project.

Comment 34-1

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region. Cemex directly supports over 90 people in the Fresno region, providing high quality, high paying jobs, many of them union jobs, as a source of economic security for their families.

Cemex has been a steadfast and reliable supplier of building materials needed to grow the region's economy and the county's investments in public infrastructure. Aggregates from their Rockfield Quarry have been used in the businesses, homes, roads and schools found in most of our neighborhoods.

Again, on behalf of our members and the communities who depend on a local source of construction aggregate to build homes, businesses and public sector infrastructure, we urge the Fresno County Planning Commission to approve the modification plan without delay.

Thank you for recognizing the benefits of having a quarry located in your community.

Sincerely,

Wyatt Meadows

District Representative OE3

CC: The Board of Supervisors via Clerk of the Board of the Board of Supervisors, Bernice E. Seide @ clerkBOS@FresnoCountyCa.Gov

David Randall Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX Rockfield Quarry EIR 7763 Proposal and the Future of the San Joaquin River

Dear David Randall,

As a member of Fresno Fly Fishers for Conservation and a concerned resident of Fresno County, I am writing to express my deep opposition to the CEMEX proposal that would extend commercial mining operations on the banks of the San Joaquin River for the next 100 years. Comment 35-1

This area is one of the most spectacular parcels of land in the region, yet public access remains extremely limited. Instead of prioritizing conservation and community use, this agreement would extend private and commercial restrictions, preventing generations of Fresno County residents from enjoying this vital natural resource. Comment 35-2

I am particularly concerned about the expedited approval process for this 100-year commitment. The brief public comment period, which ends on March 10th is far too little time for Fresno County residents to learn about the project's consequences. A project of this magnitude demands thorough consideration, not a rushed decision that will impact future generations. Comment 35-3

The environmental consequences of this project cannot be ignored. The California Department of Fish and Wildlife (CDFW) has made significant strides in reintroducing salmon to the San Joaquin River, yet this mining operation could jeopardize these efforts. The increased truck traffic, potential river pollution, and habitat destruction would be devastating for local wildlife. Fracking and blasting a 600-foot mine so close to the river could lead to accidental discharges, seepage, and contamination of the surrounding water table endangering both aquatic ecosystems and local wells. Comment(s) 35-4 35-5 35-6

Beyond the environmental harm, this project poses economic concerns. CEMEX, a foreign-owned LLC, is granted limited liability by design, meaning if damages occur, there may be little accountability. Moreover, the current agreement lacks measurable performance oversight, and reports indicate repeated violations of work schedules and environmental standards. The increased truck traffic alone—up to 1,000 trucks per day will degrade our roads and impact local residents, with little assurance that CEMEX will be held responsible for the consequences. Comment(s) 35-7, 35-8 35-9 35-10

Fresno County deserves better. Rather than approving a destructive mining operation, this land should be preserved and made accessible to the public. A park or conservation area would not only protect the environment but could also generate long-term revenue through recreation, tourism, and sustainable business opportunities. A private mine will only benefit a foreign corporation, while our community bears the long-term costs. Comment 35-11

I urge you to reconsider this agreement and advocate for a better future for Fresno County. Our community has the right to more input and a greater say in how this land is used. Please extend the public comment period and conduct a thorough review of the environmental and economic impacts before making a decision that will affect our region for the next century. Comment 35-12

Thank you for your time and consideration. I look forward to your response on this critical issue.

Sincerely,

Larry N Odell

559-269-7604

Fresno Fly Fishers for Conservation

February 24, 2025 (Update and revised from 2/17/2025)

Public Comments

TO: Delivered by Email to: tmtunga@fresnocountyca.gov
Also, by mail to: David Randall, Senior Planner, Fresno Public Works and Planning Department, Divisions of Public Works and Planning, 2220 Tulare Street, 6th Floor, Fresno, CA 93721

SUBJECT: Draft Environmental Impact Report, EIR No. 7763 (the "Draft", "Draft EIR", or "EIR") , and Unclassified Conditional Use Permit Application Nos. 3555 and 3667 ("UCUP" or "Permit Applications"), Proposed CEMEX Rockfield Quarry Modification Project ("Cemex", "Quarry", or the "Project").

Other References: Current Plant Site, N. Willow/Little Dry Reek ("Current Plant Site", or "Site 1") Quarry Site, N. Friant Road-Bluff View Avenue ("Quarry Site", "New Plant" or "Proposed Plant Site", or "Plant Site 2").
Fresno County (the "County"), Board of Supervisors ("Supervisors", or By Named Supervisor)

FROM: Dr. Joseph J. Penbera and Mrs. Wendy Penbera. Residents of Fresno County. Residing immediately across and facing the CEMEX proposed Quarry and Plant 2 site, at 15302 Mesa View Avenue, Friant, CA 93626. Telephone: 559-360-3535. Email: jpenbera@comcast.net.

Background of Persons Providing Comments:

Dr. Joseph Penbera is Chairman and founder of the California Energy Investment Center (CEIC) which has assisted in bringing millions of dollars of capital investment and creating thousands of new jobs for environmentally friendly projects in targeted employment areas. He is a member of the National Association of Forensic Economists (NAFE), a former Fulbright Senior Scholar in Economics, and recognized as a top economist by professional and media organizations and as a qualified forensic expert in virtually all court jurisdictions and by many government agencies. Dr. and Mrs. Penbera have deep ties to the Fresno area. Dr. Penbera served as Dean of The Craig Business School and on the San Joaquin River Parkway Board at its inception. He has studied the region for more than three decades and produced the first Statistical Abstract for the Central California counties, and the Population Forecast for Fresno County, among others. Wendy Penbera is a former Regional Director for Special Olympics, served on the State Legislative Committee for Junior League, and is a life-long resident of the Central Valley. All three of the Penbera children graduated from Fresno County schools.

Comment 36-1

Part A: General Comments:

1. **EIR Review Process.**
   Much respect is accorded to the County staff. CEMEX has proposed a project which is by its very nature complex and challenging as to its scope. However, the EIR review process and an analysis of a 1000-page Draft EIR document is inherently even more overwhelming when considered by people unfamiliar with such matters. Very few people in the general public have experience with the historical and public policy context of the current application made by Cemex. All in all, this can seem daunting as to even where to start and to believing whether spending the time will be worth it. Intended or not, the review process, handling of public comments, and the meeting and hearing logistics related to the Cemex extension several years ago, muted public participation, disadvantaged interaction and sharing of comments and feedback among individuals and groups, and put major holes in public confidence. Comment 36-2

   Let's not let that happen again by recognizing that CEMEX has had years to formulate a strategy based on making contact with staff, collateral agencies, and Supervisors. Cemex and its consultants have a head start in terms of influencing the process and the outcomes, so some meaningful steps should be taken to create a more level playing field. We suggest the following:

   - **The comments made by the public should be posted by the County on its website so that everyone can see them. This information is necessary to coalesce public opinions and interactions and towards properly gauging public sentiment.** Comment 36-3
   - **The identities of the agencies or entities that have either formally seen the Draft EIR or have worked with CEMEX consultants directly or indirectly through County staff should be made public, and the dates and subject matter and agreements or compromises reached during these contacts should be disclosed. This information is necessary to determine if various organizations are or have been working to meet their respective mandates, and which should be contacted.** Comment 36-4
   - **The names and backgrounds of each of the technical experts used by Cemex in working on the Draft EIR and on any collateral documents or process related to the proposed Quarry, and related current and future Cemex operations, should be disclosed. This information should be provided so that the independence of these persons or organizations can be determined.** Comment 36-5
   - **As reported in The Fresno Bee, CEMEX failed in its attempt to gain approval in Mexico of the blasting methods it wishes to deploy here. If CEMEX has provided information and independent studies associated with deep blast mining to the County, this information should be publicly shared. If it has not provided such information, then this should also be disclosed. Even if such information was forthcoming from Cemex, it would be helpful if the County staff would produce a White Paper about the risks associated with deep blast mining.** Comment 36-6
   - **With a proposal of this magnitude, the proponent and/or the County should provide video and audio simulations relating to deep blast mining methods, and the light, traffic, water, and air pollution and other effects from the Quarry and the proposed plant on the Parkway zone and on residents proximate to plant 2, and at various other distances from the site. The visual perspective of these simulations should not be based solely on current conditions, but also from a forward perspective which** Comment 36-7 Comment 36-8

includes, among others, important trends like future projected residential growth of the area and the increases in hours and extent of operations.

Comment 36-8 Cont.

- **For decades now, the existing plant has been operating without an EIR. An extension was granted several years ago that ignored the changed conditions of the area even though changes in conditions is supposed to be at the heart of every extension given. The public deserves to know why the continuation of that plant should not be addressed <u>prior</u> to when the Quarry proposal and the Draft EIR are even considered. Again, an overlay of the conditions that exist now at site 1 versus those that existed decades ago would represent an objective approach to assessing if mining operation of ANY kind should be permitted in the river bottom.**

Comment 36-9

Comment 36-10

- **The public hearing meetings need to be held at times that better accommodate public participation. When the Ball Ranch development was proposed, Supervisors like Sharon Levy, seemed to make it easier for multiple voices to be heard. Even prior to the hearings, Supervisors should make themselves available to hear comments and questions at a series of open public meetings.**

Comment 36-11

The governmental process used which resulted in Cemex obtaining its last extension raised the public's awareness of things that impact decision-making in the County. First, CEMEX has many more resources in terms of time and money at its disposal to communicate what it wants. Second, CEMEX served up payroll for less than 60 people as the only thing that mattered which had the effect of being dismissive the views of not only many other stakeholders, but also contradicted the principle of changed conditions which had implications for how the findings of the staff were treated. If that process and result is repeated in any form or function, then this entire EIR process should be viewed as an accommodation to a foreign company and that the real decisions were made in a dark room.

Comment 36-12

Comment 36-13

2. **EIR Flaws: In reviewing the EIR itself, there are two things that appear to be missing:**

Comment 36-14

- **Oversight, Sanctions, Financial Reserves: CEMEX is requesting—among other things--to use risky drilling methods, increase traffic, expand operating times, and for a 100-year period. This is such an overreach that it seems like a corporate strategy which aims very high with the expectation that negotiations could be characterized as give and take, and, seemingly, resulting in a compromise solution, when, in fact, getting the project through in just about any form and over any time frame is really the CEMEX objective.**

What is missing in the EIR is any systematic discussion of what happens if the current major assumptions and claims made by CEMEX prove wrong, or even if CEMEX just exhibits bad operational behavior.

Comment 36-15

We view the omission of oversight as a very serious shortcoming. Planners may suggest that the EIR is not required to address this matter, but that has proven to be a very dangerous position to take. It this cannot be addressed directly in the EIR, then there should be a collateral document which does provide for oversight, sanctions, and financial reserves. The Draft EIR invites bad assumptions because there are no consequences for making them. There is no requirement for CEMEX to set aside annually a portion of its revenues. There is no provision for CEMEX to pay for

Comment 36-16

inspectors; we must all rely on CEMEX's good faith that they will self-report and self-correct. There is no provision for sanctioning CEMEX if it violates operating tenets. The Draft EIR lacks common sense based on first, that things go wrong, and second, that the longer the perspective, the less valid are the assumptions underlying that perspective.

Comment 36-16 Cont.

Ignoring oversight, sanctions, and financial reserves based on negotiations which reduce the timeline of the project would not resolve anything' in fact, that should be considered as somewhat of a red herring. Approval of the project in any form or timeline must still be viewed as generating risks and insecurity for the people of Fresno County.

Comment 36-17

The degree of oversight, specifying violations which would generate sanctions (including work stoppages or a total closure), and the amount of reserves that should be very high on the list of the County's responsibilities and should not be ignored or even delayed. Considering the project as it is now proposed, nothing today in the Friant corridor or north Fresno or across the river in Madera or in downturn Fresno is likely to look exactly like it does today 100 years from now, and everyone involved will be gone in 100 years.

Comment 36-18

- **Taken as a whole, the quarry project is a completely different project than the current project. The proposed project is not simply an extension of current operations and simply moving these to a different site.**

Comment 36-19

The Draft EIR should, at least, contain a discussion that the current operations have existed for decades without an EIR and have been extended. It should point out that the staff analysis regarding the changed conditions in the areas-- even though changed conditions in the given area are supposed to be the basis for extending or denying operations in the river bottom – was effectively ignored.

It should also discuss changed conditions around site 2 as well. As will be discussed later, the existence of the River Parkway alone represents a major change in area conditions.

This discussion in the EIR will set the record straight and would resolve a basic question about the legitimacy of the Draft EIR process. Before this Draft EIR is even considered, should a question be put to the Planning Staff and the public which asks whether ANY industrial operation is compatible with respect to the conditions extant in north Fresno, Friant Road, and river corridor, and which, of course, considers the current and future growth prospects and the plans for the River Parkway?

Comment 36-20

Part B: Comments Relating to Environmental Issues

Comment 36-21

Most of our comments are going to relate to untrue statements or implied claims made by Cemex, or the insufficiency of mitigation, or that the assumptions about cause and effect related to a particular issue are too speculative to be relied upon.

1. **CEMEX claims that the Quarry and Plant Site 2 is an "extension" of its current *aggregate surface mining operations* and its current plant at Willow and Friant.**
   Comment: This is untrue.
   The project utilizes vastly different methods, is not surface mining, and has much larger environmental impacts.

2. **The Conditional Use Applications are a continuation and modification of its current mining and processing operations.**
   Comment: This statement is somewhat misleading.
   The current method of mining is not the planned method. Also, the current uses are not based on an approved EIR and, thus, the conceptualization of an application for continuing and modifying current operations that is not supported by an EIR is a false proposition.

Comment 36-22

3. **Cemex wants to obtain a conditional use permit for 100 years.**
   Comment: This time period represents a gross over-reach and calls into question the basic assumptions and claims of mitigation into question. This period represents such a mismatch with respect to business and economic cycles that plans and risk assessment which utilize this time period should be viewed as speculative and, therefore, unreliable.
   It is a commonly accepted principle of planning, and associated attempts to forecast outcomes and consequences of plans, that the longer time period assigned to the forecast, the less accurate the current assumptions and conclusions become.
   The corollary of that principle is that long-term forecasts are inherently riskier than shorter ones.
   When rooted in the concept of considering changing conditions which serves as one of the core principles to be applied to a project approval or extension, the Cemex project contradicts this principle. Instead, it serves to improperly instruct the reviewer to abandon consideration of changing conditions and to put a private company's benefit in its place.

Comment 36-23

4. **CEMEX wants approval to blast a 600-foot deep hole in the land in the San Joaquin River bottom for *hard rock mining.***
   (Note: We do not have direct experience in hard rock mining with blasting; however, Dr. Penbera is drawing on experience with lateral well drilling in hard rock formations).

   Comment: The use of blasting in hard rock mining (sometimes called deep-rock mining), presents significant, unpredictable risks to humans, inanimate objects (like structures, equipment and machinery), and the environment, including other forms of life.
   The following environmental impacts regarding hard rock mining are not sufficiently considered or mitigated in the EIR. Assumptions made in the context of hard rock mining and over a 100-year time frame do not appear to have been empirically tested.

   - **Destruction of habitats**

Comment 36-24

Comment(s)

- **Preservation of river bottom parkway trail connectivity** 36-25
- **Above ground level energy bursts** 36-26
- **Fracturing of ground level rock** 36-27
- **Fracturing and caving in of blast area walls** 36-28
- **Release of blast energy and seismic waves weakening rock stability, based on topography, at distances beyond the plant site** 36-29
- **Noise abatement and open noise carry and reverberation** 36-30
- **Leaking of chemicals and explosive charge materials into groundwater** 36-31
- **Water contamination from rock fracturing and acid leeching into area wells used by humans and livestock** 36-32
- **Dust and rock and other particulate matter diffusion into the air** 36-33
- **Loss of asset value of properties proximate to the quarry and plant site** 36-34
- **Long-term health issues and risks associated with air or water contamination** 36-35
- **Fumes emanating from blasting, equipment machinery, trucks and traffic** 36-36
- **Light pollution effects on habitat and on residents proximate to the quarry** 36-37

5. **Cemex wants to move open pit mining operations to what it is calling a quarry site and shut down its current processing site. This implies some mitigation effect by shutting one site and moving to another.**
   Comment. The implication is untrue. The EIR does not adequately compare the effects of operations on the current site to the new site. As such, it does not directly address the massive increase in the scale of operations that will occur at the quarry site, and along the Friant Road corridor.
   Viewing project site 2 as merely an extension of current operations is misleading. Cemex wants to more than double rock production to 3 million metric tons annually, double the amount of direct and collateral truck trips, expand operating hours, and move all of its operations which brings a massive amount of buildings and equipment to site 2.

   Comment 36-38

6. **The effects of the Quarry site with respect to impacts on existing residential areas and planned growth areas, and effects of increased Fraint Road traffic, have been properly assessed, are not material, and can be sufficiently mitigated.**
   Comment: This claim is --either by fact or implication --not true.
   Friant Road represents a major residential growth corridor. Major new residential construction includes hundreds of residences at Copper River. Friant Rd. joins with Willow Ave. and to major residential developments in all directions along Willow. Fraint Road leads to major residential developments occurring around and above Friant Dam and Millerton Dam. There are 13 houses directly across Friant Road facing the site. There are 2 residences on the same side of Friant close to the Quarry site.
   Friant Road is the main traffic artery along the River Parkway and leads from Woodward Park entrances and a growing retail area at Audubon to new residential and commercial areas as well as to route 41. The newly opened Table Mountain Casino has materially increased traffic. Friant Rd. leads to the Millerton Lake recreation area which has experienced great demand and to new developments on 145.
   The number of accidents and damages caused by debris on Friant Road has increased significantly over the last 10 years.
   In terms of changing conditions and growth, the Quarry site would be placed on one of Fresno's highest growth corridors and a main artery for transit of residents and visitors.

   Comment 36-39

Industrial operations should be regarded as among the most unsuitable and incompatible activities for such corridors.

Comment 36-39 Cont.

C. The River Parkway: A Much Better Choice

Comment 36-40

The direct and indirect impacts on the River Parkway are not the focus of the EIR. Although this is a seemingly neutral statement, the reality is that there is only an EIR under review because Cemex wants to plunk an industrial operation right down in the middle of the River Parkway.

The EIR process is of little value if one does not appreciate the extent to which Cemex's corporate interests conflict with the River Parkway and good planning. Cemex's proposal clearly conflicts with the peace and serenity of the bordering Ledger Island Nature Reserve and the Beck Ranch Nature Reserve, as well as adjacent and proximate ag land and private homes. While other rock operations have been good citizens in terms of avoiding such conflicts by locating their operations away from the river corridor, river bottom, and the Parkway, CEMEX has proposed a project that is so risky in it approach and so grandiose in its scale that it virtually disregards what the River Parkway is and represents.

The San Joaquin River Parkway is a 23-mile stretch of land along the San Joaquin River which is the 3rd longest river in California. The Parkway came into existence through certain core values that we should encourage in our children: preservation and public stewardship of various natural habits and open space, supporting the work and perseverance of volunteers and the entire community in gathering the land, getting influential and enlightened business and public leaders to share the vision of creating a place for all, and securing the resources to put it all together. This job is not done. The Parkway is developing further through its professional staff, Board and volunteers who work diligently towards educating and involving the public through events held at the Hallowell Center (about 3 miles from the quarry site), and in public buildings and in private homes.

The Parkway embodies all that is good and hopeful about Fresno. It represents one of our area's greatest (if not the greatest) most recognizable and patronized local natural asset. We know this because it is a point of interest that brings people together from all walks of life from dawn to dusk. Families from all cultures hold events there. Bicyclists often comment about how much they enjoy the "nature ride" on Friant Road from Woodward Park to Millerton Lake. During Covid, the Parkway proved to be a haven for children and families. We are hopeful that the Planning Department staff will see that the CEMEX project ---no matter how one tries to dress it up-- is not only dismissive of responsible planning, but it is also an attack on the public interest.

We are aware that attempts may be made to pigeonhole public comments as being either for or against business and jobs. We are by no means anti-business people and we are not novices in creating jobs. When it comes right down to it, were it not for the Draft EIR, it would be unimaginable that some foreign company would even suggest putting an industrial project of the kind and magnitude that Cemex has proposed in the river bottom. Fresno deserves better. And the best way for us to get better is to preserve and protect the great natural asset that we have. The Parkway enhances the quality of life for virtually all people of our area. And that, in the end, holds the greatest attraction for people to come to live and work here.

s/Joseph J. Penbera
s/Wendy J. Penbera

Jim Crawford Construction Company, Inc

1189 Hoblitt, Clovis Ca 93612
Telephone (559) 299-0306
Fax (559) 299-1958
Contractors License No. 472099

2/25/25

Mr David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724
drandall@fresnocountyca.gov

RE: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Randall,

On behalf of Jim Crawford Construction Co., Inc., I am writing in support of Cemex's Rockfield Quarry Modification Project.

I have been working with Cemex personnel for over 30 years. Cemex has been one of our main suppliers of aggregates in the Fresno Metropolitan area for many projects throughout the years. Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region.

Comment 37-1

Transporting aggregate from distant sources results in increased construction costs, fuel consumption, greenhouse gas emissions, and would contribute to existing traffic congestion. According to the Department of Conservation, transportation costs alone can increase 22 cents per ton for every additional mile traveled. Consequently, these higher construction costs are passed on to businesses, homeowners and county taxpayers.

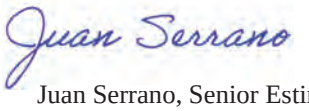
Cemex has been a steadfast and reliable supplier of building materials needed to grow the region's economy and the county's investments in public infrastructure. Aggregates from their Rockfield Quarry have been used in the businesses, homes, roads and schools found in most of our neighborhoods.

Importantly, Cemex's proposed modification plan also includes considerable resources for wildlife and habitat protection, 470 acres of open space with riparian areas, ponds, lakes, and native vegetation, and an easement for the Parkway Plan to expand the existing pedestrian and bicycle trail along the San Joaquin River that will benefit the local community.

Cemex has developed a constructive and thoughtful plan that serves the region's building, water, environmental and recreational needs, while remaining committed to being a good corporate citizen and responsible neighbor.

Thank you for recognizing the benefits of having a quarry located in your community.

Sincerely,



Juan Serrano, Senior Estimator / Project Manager.

Jim Crawford Construction Co., Inc.

CC: The Board of Supervisors via Clerk of the Board of the Board of Supervisors, Bernice E. Seidel at bseidel@co.fresno.ca.us

David Randall Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX Rockfield Quarry EIR 7763 Proposal and the Future of the San Joaquin River

Dear David Randall,

As a member of Fresno Fly Fishers for Conservation and a concerned resident of Fresno County, I am writing to express my deep opposition to the CEMEX proposal that would extend commercial mining operations on the banks of the San Joaquin River for the next 100 years. Comment 38-1

This area is one of the most spectacular parcels of land in the region, yet public access remains extremely limited. Instead of prioritizing conservation and community use, this agreement would extend private and commercial restrictions, preventing generations of Fresno County residents from enjoying this vital natural resource. Comment 38-2

I am particularly concerned about the expedited approval process for this 100-year commitment. The brief public comment period, which ends on March 10th is far too little time for Fresno County residents to learn about the project's consequences. A project of this magnitude demands thorough consideration, not a rushed decision that will impact future generations. Comment 38-3

The environmental consequences of this project cannot be ignored. The California Department of Fish and Wildlife (CDFW) has made significant strides in reintroducing salmon to the San Joaquin River, yet this mining operation could jeopardize these efforts. The increased truck traffic, potential river pollution, and habitat destruction would be devastating for local wildlife. Fracking and blasting a 600-foot mine so close to the river could lead to accidental discharges, seepage, and contamination of the surrounding water table endangering both aquatic ecosystems and local wells. Comment(s) 38-4 38-5 38-6

Beyond the environmental harm, this project poses economic concerns. CEMEX, a foreign-owned LLC, is granted limited liability by design, meaning if damages occur, there may be little accountability. Moreover, the current agreement lacks measurable performance oversight, and reports indicate repeated violations of work schedules and environmental standards. The increased truck traffic alone—up to 1,000 trucks per day will degrade our roads and impact local residents, with little assurance that CEMEX will be held responsible for the consequences. Comment(s) 38-7, 38-8 38-9 38-10

Fresno County deserves better. Rather than approving a destructive mining operation, this land should be preserved and made accessible to the public. A park or conservation area would not only protect the environment but could also generate long-term revenue through recreation, tourism, and sustainable business opportunities. A private mine will only benefit a foreign corporation, while our community bears the long-term costs. Comment 38-11

I urge you to reconsider this agreement and advocate for a better future for Fresno County. Our community has the right to more input and a greater say in how this land is used. Please extend the public comment period and conduct a thorough review of the environmental and economic impacts before making a decision that will affect our region for the next century. Comment 38-12

Thank you for your time and consideration. I look forward to your response on this critical issue.

Sincerely,

Marvin Hoogendam
marvho@prodigy.net
Fresno Fly Fishers for Conservation

M. Hoogendam
12226 N. Via Tesoro Ave
Clovis CA
93619

FRESNO CA 936
24 FEB 2025 PM 1 L

RECEIVED
FEB 26 2025
FRESNO COUNTY PW & PLANNING

David Randall Senior Planner
County of Fresno Dept of Public Works and Planning
Development Services & Capital Projects Division
2220 Tulare Street Sixth Floor
Fresno CA 93721

93721-212750

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Marvin Hoogendam
12226 N Via Tesoro Ave.
Clovis, CA 93619

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Mr. Hoogendam

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

B & B SURPLUS INC
7020 ROSEDALE HWY
BAKERSFIELD, CA 93308
(559) 765-8775

FEBRUARY 27, 2025

Mr David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724
drandall@fresnocountyca.gov

RE: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Randall,

On behalf of B & B SURPLUS, I am writing in support of Cemex's Rockfield Quarry Modification Project.

Comment 39-1

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region.

Transporting aggregate from distant sources results in increased construction costs, fuel consumption, greenhouse gas emissions, and would contribute to existing traffic congestion. According to the Department of Conservation, transportation costs alone can increase 22 cents per ton for every additional mile traveled. Consequently, these higher construction costs are passed on to businesses, homeowners and county taxpayers.

Cemex has been a steadfast and reliable supplier of building materials needed to grow the region's economy and the county's investments in public infrastructure. Aggregates from their Rockfield Quarry have been used in the businesses, homes, roads and schools found in most of our neighborhoods.

Importantly, Cemex's proposed modification plan also includes considerable resources for wildlife and habitat protection, 470 acres of open space with riparian areas, ponds, lakes, and native vegetation, and an easement for the Parkway Plan to expand the existing pedestrian and bicycle trail along the San Joaquin River that will benefit the local community.

Cemex has developed a constructive and thoughtful plan that serves the region's building, water, environmental and recreational needs, while remaining committed to being a good corporate citizen and responsible neighbor.

Thank you for recognizing the benefits of having a quarry located in your community.

Sincerely,

Rob Chapman, Outside Sales
rchapman@bbmetals.com

CC: The Board of Supervisors via Clerk of the Board of the Board of Supervisors, Bernice E. Seide @ clerkBOS@FresnoCountyCa.Gov

From:	John Cameron
To:	Randall , David A.
Subject:	CEMEX project environmental concerns
Date:	Friday, February 28, 2025 7:32:54 AM

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Report Suspicious

David Randall Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX Rockfield Quarry EIR 7763 Proposal and the Future of the San Joaquin River

Dear David Randall,

As a member of Fresno Fly Fishers for Conservation and a concerned resident of Fresno County, I am writing to express my deep opposition to the CEMEX proposal that would extend commercial mining operations on the banks of the San Joaquin River for the next 100 years. — Comment 40-1

This area is one of the most spectacular parcels of land in the region, yet public access remains extremely limited. Instead of prioritizing conservation and community use, this agreement would extend private and commercial restrictions, preventing generations of Fresno County residents from enjoying this vital natural resource. — Comment 40-2

I am particularly concerned about the expedited approval process for this 100-year commitment. The brief public comment period, which ends on March 10th is far too little time for Fresno County residents to learn about the project's consequences. A project of this magnitude demands thorough consideration, not a rushed decision that will impact future generations. — Comment 40-3

The environmental consequences of this project cannot be ignored. The California Department of Fish and Wildlife (CDFW) has made significant strides in reintroducing salmon to the San Joaquin River, yet this mining operation could jeopardize these efforts. The increased truck traffic, potential river pollution, and habitat destruction would be devastating for local wildlife. Fracking and blasting a 600-foot mine so close to the river could lead to accidental discharges, seepage, and contamination of the surrounding water table endangering both aquatic ecosystems and local wells. — Comment(s) 40-4 40-5 40-6

Beyond the environmental harm, this project poses economic concerns. CEMEX, a foreign-owned LLC, is granted limited liability by design, meaning if damages occur, there may be little accountability. Moreover, the current agreement lacks measurable performance oversight, and reports indicate repeated violations of work schedules and environmental standards. The increased truck traffic alone—up to 1,000 trucks per day will degrade our roads and impact local residents, with little assurance that CEMEX will be held responsible for the consequences. — Comment(s) 40-7, 40-8 40-9 40-10

Fresno County deserves better. Rather than approving a destructive mining operation, this land should be preserved and made accessible to the public. A park or conservation area would not only protect the environment but could also generate long-term revenue through recreation, tourism, and sustainable business opportunities. A private mine will only benefit a foreign corporation, while our community bears the long-term costs. — Comment 40-11

I urge you to reconsider this agreement and advocate for a better future for Fresno County. Our community has the right to more input and a greater say in how this land is used. Please extend the public comment period and conduct a thorough review of the environmental and economic impacts before making a decision that will affect our region for the next century. — Comment 40-12

Thank you for your time and consideration. I look forward to your response on this critical issue.

Sincerely,
John Cameron

2384 Northhill Drive
Fresno Fly Fishers for Conservation

David Randall Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX Rockfield Quarry EIR 7763 Proposal and the Future of the San Joaquin River

Dear David Randall,

As a member of Fresno Fly Fishers for Conservation and a concerned resident of Fresno County, I am writing to express my deep opposition to the CEMEX proposal that would extend commercial mining operations on the banks of the San Joaquin River for the next 100 years. Comment 41-1

This area is one of the most spectacular parcels of land in the region, yet public access remains extremely limited. Instead of prioritizing conservation and community use, this agreement would extend private and commercial restrictions, preventing generations of Fresno County residents from enjoying this vital natural resource. Comment 41-2

I am particularly concerned about the expedited approval process for this 100-year commitment. The brief public comment period, which ends on March 10th is far too little time for Fresno County residents to learn about the project's consequences. A project of this magnitude demands thorough consideration, not a rushed decision that will impact future generations. Comment 41-3

The environmental consequences of this project cannot be ignored. The California Department of Fish and Wildlife (CDFW) has made significant strides in reintroducing salmon to the San Joaquin River, yet this mining operation could jeopardize these efforts. The increased truck traffic, potential river pollution, and habitat destruction would be devastating for local wildlife. Fracking and blasting a 600-foot mine so close to the river could lead to accidental discharges, seepage, and contamination of the surrounding water table endangering both aquatic ecosystems and local wells. Comment(s) 41-4 41-5 41-6

Beyond the environmental harm, this project poses economic concerns. CEMEX, a foreign-owned LLC, is granted limited liability by design, meaning if damages occur, there may be little accountability. Moreover, the current agreement lacks measurable performance oversight, and reports indicate repeated violations of work schedules and environmental standards. The increased truck traffic alone—up to 1,000 trucks per day will degrade our roads and impact local residents, with little assurance that CEMEX will be held responsible for the consequences. Comment(s) 41-7, 41-8 41-9 41-10

Fresno County deserves better. Rather than approving a destructive mining operation, this land should be preserved and made accessible to the public. A park or conservation area would not only protect the environment but could also generate long-term revenue through recreation, tourism, and sustainable business opportunities. A private mine will only benefit a foreign corporation, while our community bears the long-term costs. Comment 41-11

I urge you to reconsider this agreement and advocate for a better future for Fresno County. Our community has the right to more input and a greater say in how this land is used. Please extend the public comment period and conduct a thorough review of the environmental and economic impacts before making a decision that will affect our region for the next century. Comment 41-12

Thank you for your time and consideration. I look forward to your response on this critical issue.

Sincerely,
Timothy Cone
4467 W. Vandegrift Ave. Fresno CA 93722
Fresno Fly Fishers for Conservation

JOHN R. Lawson ROCK & OIL, INC.

February 28, 2025

Mr. David Randall
Fresno County Division of Public Works & Planning
2281 Tulare Street
Fresno, CA 93724
drandall@fresnocountyca.gov

RE: SUPPORT CEMEX'S MODIFICATION PLAN FOR THE ROCKFIELD QUARRY

Dear Mr. Randall,

On behalf of John R. Lawson Rock & Oil, Inc., I am writing in support of Cemex's Rockfield Quarry Modification Project.

Comment 42-1

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region.

Transporting aggregate from distant sources results in increased construction costs, fuel consumption, greenhouse gas emissions, and would contribute to existing traffic congestion. According to the Department of Conservation, transportation costs alone can increase 22 cents per ton for every additional mile traveled. Consequently, these higher construction costs are passed on to businesses, homeowners and county taxpayers.

Cemex has been a steadfast and reliable supplier of building materials needed to grow the region's economy and the county's investments in public infrastructure. Aggregates from their Rockfield Quarry have been used in the businesses, homes roads and schools found in most of our neighborhoods.

Importantly, Cemex's proposed modification plan also includes considerable resources for wildlife and habitat protection, 470 acres of open space with riparian areas, ponds, lakes, native vegetation, and an easement for the Parkway Plan to expand the existing pedestrian and bicycle trail along the San Joaquin River that will benefit the local community.

Cemex has developed a constructive and thoughtful plan that serves the region's building, water, environmental and recreational needs, while remaining committed to being a good corporate citizen and responsible neighbor.

Thank you for recognizing the benefits of having a quarry located in our community.

Sincerely,

John R. Lawson
PRESIDENT

CC: The Board of Supervisors via Clerk of the Board of Supervisors, Bernice E. Seide @ clerkBOS@FresnoCountyCa.Gov

From:	Ben Nydam
To:	Randall , David A.; Clerk/BOS
Cc:	Pete LoCastro
Subject:	Cemex - support Letter 2-28-25
Date:	Friday, February 28, 2025 4:23:44 PM
Attachments:	Cemex - support Letter 2-28-25.docx

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David & Bernice,

Attached is a letter supporting the modification plan for the Rockfield Quarry. Dellavalle Laboratory has provided services for Cemex for the last 10+ years. Our experience has been that Cemex is a group of professionals trying to accomplish their goals in a clear and upfront manner. Through the monitoring services Dellavalle Laboratory has provided we have seen that Cemex is committed to maintaining environmental sustainability in the projects they manage. We look forward to working with Cemex in the years to come and support the Modification Plan for the Rockfield Quarry.

Ben Nydam
President
Dellavalle Laboratory, Inc.

Ben Nydam
President - CCA# 55225

O:559-233-6129 ext 101
M:559-647-5331
E:bnydam@dellavallelab.com

Dellavalle

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DELLAVALLE™
LABORATORY INC

Mr David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724
drandall@fresnocountyca.gov

February 28,2025

RE: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Randall,

On behalf of Dellavalle Laboratory, Inc, I am writing in support of Cemex's Rockfield Quarry Modification Project.

Comment 43-1

Cemex's Rockfield Quarry has been providing the Fresno Region with a reliable source of construction aggregate for the past 100 years. Having a local and affordable source of construction aggregate is an important consideration for businesses when they choose to expand or locate to Fresno County or when public agencies invest taxpayer dollars in public infrastructure. The demand for new construction in the Fresno region is projected to grow, requiring over 6 million tons of construction aggregate per year for the next 50 years. This demand should be supplied locally, as opposed to being trucked and shipped in from outside the region.

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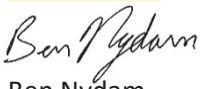
Importantly, Cemex's proposed modification plan also includes considerable resources for wildlife and habitat protection, 470 acres of open space with riparian areas, ponds, lakes, and native vegetation, and an easement for the Parkway Plan to expand the existing pedestrian and bicycle trail along the San Joaquin River that will benefit the local community.

Cemex has developed a constructive and thoughtful plan that serves the region's building, water, environmental and recreational needs, while remaining committed to being a good corporate citizen and responsible neighbor.

Thank you for recognizing the benefits of having a quarry located in your community.

Respectfully,



Ben Nydam
President
Dellavalle Laboratory, Inc.
Certified Crop Advisor # 22552

CC: The Board of Supervisors via Clerk of the Board of the Board of Supervisors, Bernice E. Seide @ clerkBOS@FresnoCountyCa.Gov

David Randall Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX Rockfield Quarry EIR 7763 Proposal and the Future of the San Joaquin River

Dear David Randall,

As a member of Fresno Fly Fishers for Conservation and a concerned resident of Fresno County, I am writing to express my deep opposition to the CEMEX proposal that would extend commercial mining operations on the banks of the San Joaquin River for the next 100 years. Comment 44-1

This area is one of the most spectacular parcels of land in the region, yet public access remains extremely limited. Instead of prioritizing conservation and community use, this agreement would extend private and commercial restrictions, preventing generations of Fresno County residents from enjoying this vital natural resource. Comment 44-2

I am particularly concerned about the expedited approval process for this 100-year commitment. The brief public comment period, which ends on March 10th is far too little time for Fresno County residents to learn about the project's consequences. A project of this magnitude demands thorough consideration, not a rushed decision that will impact future generations. Comment 44-3

The environmental consequences of this project cannot be ignored. The California Department of Fish and Wildlife (CDFW) has made significant strides in reintroducing salmon to the San Joaquin River, yet this mining operation could jeopardize these efforts. The increased truck traffic, potential river pollution, and habitat destruction would be devastating for local wildlife. Fracking and blasting a 600-foot mine so close to the river could lead to accidental discharges, seepage, and contamination of the surrounding water table endangering both aquatic ecosystems and local wells. Comment(s) 44-4 44-5 44-6

Beyond the environmental harm, this project poses economic concerns. CEMEX, a foreign-owned LLC, is granted limited liability by design, meaning if damages occur, there may be little accountability. Moreover, the current agreement lacks measurable performance oversight, and reports indicate repeated violations of work schedules and environmental standards. The increased truck traffic alone—up to 1,000 trucks per day will degrade our roads and impact local residents, with little assurance that CEMEX will be held responsible for the consequences. Comment(s) 44-7,44-8 44-9 44-10

Fresno County deserves better. Rather than approving a destructive mining operation, this land should be preserved and made accessible to the public. A park or conservation area would not only protect the environment but could also generate long-term revenue through recreation, tourism, and sustainable business opportunities. A private mine will only benefit a foreign corporation, while our community bears the long-term costs. Comment 44-11

I urge you to reconsider this agreement and advocate for a better future for Fresno County. Our community has the right to more input and a greater say in how this land is used. Please extend the public comment period and conduct a thorough review of the environmental and economic impacts before making a decision that will affect our region for the next century. Comment 44-12

Thank you for your time and consideration. I look forward to your response on this critical issue.

Sincerely,
Raaktin Praseutsy

Raaktin.Praseutsy@fresnounified.org

Fresno Fly Fishers for Conservation

From:	Redbud Audubon
To:	Randall , David A.
Cc:	admin@fresnoaudubon.org
Subject:	Opposition to EIR - CEMEX Rockfield Quarry
Date:	Sunday, March 2, 2025 6:50:03 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior Planner

Fresno County Public Works and Planning Department

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Subject: Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report

Dear Mr. Randall,

Comment 45-1

We are writing to formally express our opposition to the proposed 100-year permit for the CEMEX mining operation and to challenge the adequacy of the Draft Environmental Impact Report (EIR) prepared for this project.

The Environmental Impact Report (EIR) fails to adequately address key concerns including air quality, water impacts, and threats to local bird populations such as the endangered Tricolored Blackbird.

We request that the Planning Department reconsider this permit in light of the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.

Thank you for your time and consideration.

On behalf of our membership and Board of Directors,

Donna Mackiewicz, President

Redbud Audubon Society

redbud.audubon@gmail.com

707-805-9410

P.O. Box 5780

Clearlake, CA 95422

www.redbudaudubon.org

1549 Menlo Ave, Clovis, CA 93611 · (559) 325-3827 · (559) 325-1584 Fax

March 5th, 2025

Mr. David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724
drandall@fresnocountyca.gov

CC: The Board of Supervisors via Clerk of the Board of the Board of Supervisors, Bernice E. Seide @ clerkBOS@FresnoCountyCa.Gov

Re: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Randall,

It is my pleasure to write a letter in support of Cemex's Rockfield Quarry Modification Project.

Comment 46-1

As a contractor, I have worked with Cemex for many years and have found them reliable and efficient to work with. Their leadership in health and safety and attention to environmental needs are exceptional.

As the county and city grow continue to grow and demand for construction aggregate rises, it would benefit Fresno County to supply this demand locally instead of sourcing from outside of the area. By using a local company, we can reduce transportation costs, product prices and greenhouse gas emissions. It also provides more local job opportunities. Cemex will help meet the future demands for our area thoughtfully and responsibly.

In conclusion, I fully support CEMEX's modification plan for the Rockfield Quarry. This venture will be exciting and beneficial for local contractors such as myself, as well as the local community's development.

Sincerely,

Bart Jones
President / JWT Site Management, Inc.

Material Movers, Inc

2853 S. Orange Ave, Fresno, CA 93725 · (559) 207-7666

March 5th, 2025

Mr. David Randall
Fresno County Division of Public Works and Planning
2281 Tulare Street
Fresno, CA 93724
drandall@fresnocountyca.gov

CC: The Board of Supervisors via Clerk of the Board of the Board of Supervisors, Bernice E. Seide @ clerkBOS@FresnoCountyCa.Gov

Re: Support CEMEX's Modification Plan for the Rockfield Quarry

Dear Mr. Randall,

It is my pleasure to write a letter in support of Cemex's Rockfield Quarry Modification Project.

Comment 47-1

I have worked with Cemex for many years. They work closely with their contractors to make sure everything runs smoothly at their jobsites, their leadership in safety, health and environmental are excellent.

As the county and city grow simultaneously, Cemex's Rockfield Quarry Modification Project will help meet the future demands for our area. It will also reduce traveling long distances to receive product and local companies will save time and money with this facility being located close by.

In conclusion, I fully support CEMEX's modification plan for the Rockfield Quarry. This venture will be exciting and beneficial for local contractors such as myself, as well as the local communities.

Sincerely,

Garrett Jones

Sales Manager / Material Movers, Inc.

Jenae McCarthy
Pollinator Habitat Specialist
Xerces Society, Inc
3/3/25

David Randall, Senior Planner
Fresno County Public Works & Planning Department Development Services & Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

Dear Fresno County,

I am writing to strongly oppose Cemex and provide a summary of key environmental impact findings. After reviewing the document, it is clear that the project poses significant risks to water availability, water quality, air quality, recreation, and land use planning that have not been adequately addressed. Below, I have outlined specific areas where the DEIR falls short, and I urge you to reconsider this project in its entirety.

Comment 48-1

Water Availability and Quality (Section 4.10)

Comment 48-2

The DEIR fails to sufficiently account for the significant impacts the Rockfield Modification Project will have on **water resources**, **particularly groundwater levels**. According to **Impact 4.10-12**, the project has the potential to **substantially decrease groundwater levels** in a manner that could result in the **flow of substantial volumes of water from the San Joaquin River** to the Quarry Site. Currently, “no surface water from the San Joaquin River is used at the Quarry Site… Similar to the Plant Site, these ponds are all temporary water features that contain surface runoff from rainfall and/or groundwater (4.10.1.4).

Questions:

- Where does Cemex think groundwater, approximately 200ft from the San Joaquin River, comes from?
- If Cemex does not currently use “surface water” why shouldn’t they be held to the same standard?
- What is the current water quality of the “temporary water features” which are being used as groundwater recharge?
- Is the San Joaquin River labeled “groundwater”?

Comment 48-3

Comment 48-4

Comment 48-5

This is unacceptable and not what the San Joaquin River should be used for. Mitigation measures are proposed but they are not sufficient to ensure the long-term preservation of water resources in the region. The report does not adequately address the broader implications of this water loss on surrounding communities or agricultural operations that rely on these vital water sources. The inadequate mitigation and lack of clear, enforceable measures to safeguard water supply and quality are particularly concerning, as this is a **critical resource** for the area.

Comment(s) 48-6 / 48-7

Comment 48-8

Comment 48-9

Groundwater recharge is a long-term, and slow-moving process like so much of conservation efforts. Additionally, if toxic or hazardous materials (4.9-2) enter the groundwater system, this could create expensive and dire consequences for the entire community. To quote, “The transport, transfer, storage, and use of these substances would create a potential for their

Comment 48-10

accidental uncontrolled release. Such releases could result in contamination to soils or surface waters if not properly controlled and cleaned-up. Flammable or other hazardous materials improperly stored or disposed or accidently released to the environment would create fire hazard, risk to human health, and environmental degradation, including surface and groundwater contamination. This is a potentially significant impact."

Comment 48-10 Cont.

Air Quality Impact (Section 4.3)

Comment 48-11

The DEIR states their will be a **cumulatively considerable net increase** of criteria pollutants, particularly in areas where the region is in nonattainment under federal or state ambient air quality standards (Impact 4.3-2). Specifically, **Impact 4.3-2** notes that the project could result in a **cumulatively considerable net increase** of criteria pollutants, exacerbating existing air quality issues in an already nonattainment area for federal and state air quality standards. While a Fugitive Dust Control Plan is proposed, the mitigation measures are **insufficient** and do not fully address the long-term air quality impacts.

The project's reliance on construction-related emissions and dust generation will contribute to elevated levels of particulate matter (PM10 and PM2.5), which are known to have serious health implications for local communities.

- In 2024, Fresno County received failing grades for ozone, short-term particle pollution, and long-term particle pollution, according to the American Lung Association
- In 2024, Fresno County ranked 7th among the most polluted counties in the United States, according to GV Wire

Residents, educational program participants, recreationalists, and community members are suffering. Extending Cemex mining operations in our community is detrimental to the health and quality of life of residents.

Recreation and Land Use (Sections 4.11 and 4.16)

Comment 48-12

The project's potential to increase demand on existing recreational facilities and lead to physical deterioration (Impact 4.16-1) has not been fully evaluated. The DEIR dismisses the potential strain on local parks (Ball Ranch, Sumner Peck, Woodward Park) and other recreational facilities without considering the cumulative impact of ongoing mining operations and associated traffic, noise, and air pollution. The increase in industrial activity and truck traffic is likely to negatively affect the **quality of life** for residents, including their access to safe, clean recreational spaces. The DEIR mentions the Parkway Master Plan (2018) and discusses trail easements in section 2.5.8. Cemex had 100 years to create a trail easement to connect communities- they did not. I'd like a significant more detail on the proposed plan. At the time the DEIR was released, Sumner Peck Ranch was open the public and now- Ball Ranch is open 7 days a week, free of charge. This project is not consistent with the Parkway Master Plan.

Comment 48-13

Comment 48-14

Questions:

- Is Cemex has not prioritized recreational access, why would they now? Especially if they receive approval?
- Anyone who has driven on N. Friant Road knows the **dangers of driving** during mining activities, why would recreationalists want to use a trail that endangers their lives and is listed as a significant impact to scenic and natural landscapes?

Comment 48-15

- My understanding is Cemex had brief conversations with SJRC in 2021. Have they built relationships with current leadership? Have they shown any active participation in the Parkway effort and Master Plan? Have attend PACE meetings? What is their track record for river protection and participation? Comment 48-16
- If this project stops the creation of the most used facilities and trails in the County, why does that not qualify as dividing an established community? (Impact 4.11-1) Comment 48-17

In terms of land use planning (Impact 4.11-2), the project fails to demonstrate that it will not conflict with existing land use plans, policies, and regulations. Despite the claim **of** consistency with local policies, the project introduces substantial risks to surrounding land uses by threatening local communities with increased pollution, noise, and disruption, particularly in areas that are already struggling with recreational infrastructure and air quality issues. Comment 48-18

The DEIR also does not adequately address the **fragmentation** of natural habitats (4.4.1.6) and recreational spaces that could result from project expansion and land disturbance. While some mitigation measures are proposed, they do not go far enough to **protect vital community assets** and ensure sustainable land use in the area. Comment 48-19

Conclusion and Request for Action Comment 48-20

The Rockfield Modification Project poses substantial risks to **local water resources**, **air quality**, **recreational spaces**, and **land use planning**, which the DEIR has not properly addressed. The mitigation measures proposed are insufficient and fail to ensure long-term protection of public health, the environment, and local communities. **I strongly urge the lead agency and County Board of Supervisors to: stop this project from moving forward!** Ensure that land use planning concerns are fully incorporated into the project's design, with a focus on maintaining local community integrity and preserving natural habitats. The current DEIR, as written, fails to meet these critical standards and should be reconsidered.

Thank you for your attention to this urgent matter. I look forward to your response and to further discussions on how we can protect the community and the environment from the significant adverse effects of the Rockfield Modification Project.

Sincerely,

Jenae McCarthy
jenae.mccarthy@xerces.org
559-283-3725

From:	Clay Davis
To:	Randall , David A.
Cc:	Clay Davis
Subject:	CEMEX Expansion - San Joaquin River Draft EIR Report
Date:	Thursday, March 6, 2025 9:05:29 AM
Attachments:	image001.png image002.png image003.png image004.png

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. Randall,

I am writing to you today in regard to the proposed CEMEX mining pit expansion that is currently seeking entitlement approvals and for which the county is seeking public comments. Comment 49-1

I live at 10672 N. Lanes Rd., Fresno, CA on the San Joaquin River, approximately 7 miles downstream of the proposed mining pit. My wife and I have been at this location for 33 years. While I am generally not opposed to CEMEX continuing their operations and deepening their mining pit, I do have a few concerns that I would like to have the county address in their Conditions of Approval (COA's).

We have 2 wells on our property. Both wells have a fairly high ground water level (20-30 feet) and have historically never varied much over the years we've lived on the river bottom. We've also enjoyed a great water quality in both wells with no issues with contaminants . We suspect that the ground water in our area remains high due to natural ground seepage due to the influence of the river. Comment 49-2

My concerns are as follows:

- What mitigation measures will the county impose upon CEMEX to ensure the deepening of their mining pit will not adversely impact surrounding domestic water wells? I recommend the following measures be a part of the COA's: Comment 49-3
  - Require a series of monitoring wells around the pit site
  - Require CEMEX to regularly test the wells, both from a water level as well as water quality
  - Require the testing be performed by an independent third-party testing lab (Krazan, Kleinfelder, etc)
  - Require CEMEX to publicly post the results on their website
  - Require periodic testing of private domestic wells surrounding the mining pit
  - If the ground water drops in the testing wells or the quality is adversely impacted, require CEMEX to immediately cease operations

- Should issues arise with neighboring domestic wells due to CEMEX mining activities, how does the county plan to mitigate those issues in their COA's? Would the only recourse of the Comment 49-4

impacted property owners be to sue CEMEX? To avoid unreasonable legal costs by owners of impacted wells, I would recommend the following:

- As part of the COA's, require CEMEX to post a bond to pay for any domestic wells adversely impacted by their activities, including the cost for drilling new wells and/or the installation of water treatment systems to remove any contaminants.

Comment 49-4 Cont.

As I'm in a construction related industry, I agree with the need for a steady, sustainable and cost-effective supply of sand and gravel for the construction industry. I have no concerns with the proposed drilling and blasting activities due to the distance from our home to the proposed mining pit. In general, I am supportive of CEMEX's plans, and I would encourage the Planning Commission to approve their application, provided that mitigation measures are put in place to address potential impacts to surrounding domestic water wells.

Comment 49-5

Thank you,

Clay Davis

Clay Davis, **ARCHITECT |AIA, NCARB, LEED AP**
Principal | Director of Multi-Sector
7535 N. Palm Avenue #201
Fresno, CA 93711
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TABLE MOUNTAIN RANCHERIA
TRIBAL GOVERNMENT OFFICE

Date: March 6, 2025

Steven E. White, Director
Fresno County Public Works and Planning Department
2220 Tulare Street, 6th Floor
Fresno, CA 93721

Michelle Heredia-Cordova
Tribal Chairperson

Richard L. Jones
Tribal Vice-Chairperson

Jenna Gosselaar
Tribal Secretary/Treasurer

Samantha Toles-Rodriguez
Tribal Council Member-At-Large

Mark Martinez
Tribal Council Member-At-Large

Re: Notice of Availability of a Draft Environmental Impact Report (EIR) for the Proposed CEMEX Rockfield Quarry Modification Project (EIR No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667)

Dear Director White,

Table Mountain Rancheria, a federally recognized Tribe (Tribe), is in receipt of a letter from the Fresno County Public Works and Planning Department, dated January 2, 2025, regarding the proposed CEMEX Rockfield Quarry Modification Project. As part of the Tribe's initial response, Tribal Cultural Resources staff submitted a request for consultation pursuant to AB-52 in a letter dated January 9, 2025, requesting a site visit, copies of all cultural resources reports, and the results of a record search. Tribal staff was able to secure a site visit on February 24, following outreach by the Tribal Liaison with the California Department of Conservation-Division of Mine Reclamation. Please understand that the Tribe strongly opposes the extension of mining operations at this site and submits formal comments for your consideration. The Tribe feels that this project will continue to pose significant adverse impacts to Fresno County's human population, biological resources, air, water, and Native American cultural heritage.

Comment 50-1

Environmental and Safety Violations

Comment 50-2

CEMEX, a Mexican multinational building materials company, has a long history of environmental and safety violations. According to GoodJobsFirst.org, a Washington, DC-based nonprofit, CEMEX has amassed over $43 million in environmental penalties and more than $6 million in safety-related violations in the US and Puerto Rico, including $2,348,916 in environmental penalties and $1,695,972 in safety penalties incurred in California alone. In 2017, CEMEX Construction Materials Pacific LLC settled with the California Air Resources Board(ARB), paying $59,063 to the ARB and $59,062 to the San Joaquin Valley Air Pollution Control District for failing to comply with cargo-handling equipment regulations. Additionally, in 2009,

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CEMEX was forced to pay $2 million in settlement fees after increasing emissions at one of its California facilities without obtaining required permits or installing mandated controls. These actions resulted in increased nitrogen oxide pollution, a harmful contaminant that contributes to smog and respiratory problems, in violation of the Clean Air Act. CEMEX's long pattern of environmental neglect and regulatory non-compliance underscores their unfitness for further operations. This history raises deep concerns about their suitability for expanding operations at this location, a mere 200 feet from edge of the San Joaquin River, as required by the existing CUP and the CUP currently under consideration. Please be aware that since at least 2014, it appears that heavy equipment mining operations have occurred at the Rockfield Quarry site less than 100 feet from the proximal edge of the San Joaquin River.

Comment 50-2 Cont.

Adverse Impacts on Biological Resources

Comment 50-3

The proposed mining activities pose significant threats to Fresno County's biological resources, particularly the threatened spring-run Chinook Salmon that is protected by the Endangered Species Act (ESA) and the San Joaquin River Restoration Settlement Act (PL 111–11, MAR. 30, 2009). Excavating a 600-foot-deep pit adjacent to the San Joaquin River raises serious concerns under the ESA, which prohibits the "take" of threatened species. The term "take" encompasses actions that harm, harass, or kill listed species.

The noise and vibrations from heavy machinery and blasting bedrock can disrupt salmon spawning and migration, as they are highly sensitive to environmental disturbances. The DEIR references a study on fish in Alaska. However, landscape, biological diversity and wildlife are very different in Central California from those in Alaska. Additionally, excavation of a 600-foot-deep hard rock pit immediately adjacent to the San Joaquin River poses a significant risk of introducing pollutants such as sediment, heavy metals, oil, and fuel spills into the river, threatening water quality and salmon habitats. The threat increases when the required minimum 200-foot setback is violated, as it appears to have been in the past. Increased sedimentation from continued mining could smother salmon eggs and reduce oxygen levels, while changes to groundwater and surface water flow from excavation may deplete vital water sources. Habitat destruction near the river could further harm salmon by increasing water temperatures, reducing shade, and disturbing aquatic vegetation. These potential impacts violate both state and federal environmental laws, including the California Environmental Quality Act (CEQA) and the Clean Water Act (CWA), which mandate the protection of water quality and aquatic habitats.

Comment 50-4

Comment 50-5

Comment(s) 50-6 / 50-7

Comment(s) 50-8 / 50-9

Cultural Resource Concerns under CEQA and AB-52

Comment 50-10

The Rockfield Quarry project fails to adequately address the protection of Tribal Cultural Resources (TCRs), as required by AB-52 and CEQA. This location includes the site of one of the Tribe's ancestral villages and salmon spearing places in use before the construction of Friant Dam in 1941. Fresno County, as the lead agency, must consult with local Tribes to identify, avoid, and mitigate impacts to sacred sites, landscapes, and cultural artifacts. The continued excavation disregards the significance of these resources, violating CEQA Guidelines §21084.3 and the legislative intent of AB-52. Please be aware that the entire stretch of the San Joaquin River in this

area of Fresno County is a sacred and Traditional Cultural Landscape pursuant to Public Resources Code § 21074.

Comment 50-10 Cont.

Overproduction and Unsustainability

Local aggregate production levels far exceed Fresno County's needs for the foreseeable future. According to the 2018 report, Aggregate Sustainability in California by the California Geological Survey, the Fresno Production-Consumption (P-C) Region is projected to need 305 million tons of aggregate over the next 50 years. As of January 1, 2017, the region possessed 556 million tons of permitted aggregate reserves, representing 182% of the projected demand and ensuring a supply exceeding 90 years. If there is no extension of the Rockfield aggregate mine operation, production levels will still significantly surpass the Fresno PC Region's aggregate needs. If allowed to continue, within 50 years, the region will have extracted over 200% of the region's aggregate requirements. This excessive extraction would be unsustainable and conflicts with CEQA's mandate to prevent unnecessary environmental degradation.

Comment 50-11

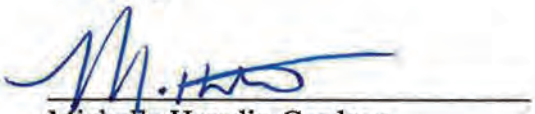
Request for Action

The Tribe firmly believes that Fresno County has a legal and ethical obligation to reject this project in its current form. As the lead agency under CEQA, the County must uphold its responsibility to protect endangered biological resources, water quality, air quality, human safety, and Tribal Cultural Resources. The continuation of CEMEX's mining operations along the San Joaquin River Corridor will result in irreversible harm to our environment, community, and cultural heritage. Additionally, the once beautiful San Joaquin River viewshed has suffered almost irreparable harm from a century of surface aggregate mining. Another century of mining on the river, including blasting bedrock on 493 acres down to 600 feet, is inconceivable. The Tribe urges the County to deny this permit and prioritize sustainable and legally compliant alternatives.

Comment 50-12

Thank you for your time and consideration.

Sincerely,



Michelle Heredia-Cordova
Chairperson, Table Mountain Rancheria

cc:
David Randall
Crystal Blue
Tawanda Mtunga
Fresno County Board of Supervisors

From:	LAVAL CAROLE
To:	Randall , David A.
Subject:	re. CEMEX
Date:	Thursday, March 6, 2025 3:21:41 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. Randall:

I am writing in opposition to the CEMEX expansion proposals; the extension of the mining contract and the 600' excavation.

Comment 51-1

Add me to the list of those opposed.

thanks-Carole Laval

--
Carole Laval, SRA / Laval and Associates
Phone: 559-435-4043
E-mail: claval@comcast.net
BREA# AG003577
DRE# 00530372

TABLE MOUNTAIN RANCHERIA
TRIBAL GOVERNMENT OFFICE

March 6, 2025

Steven E. White, Director
Fresno County Public Works and Planning Department
2220 Tulare Street, 6th Floor
Fresno, CA 93721

Michelle Heredia-Cordova
Tribal Chairperson

Richard L. Jones
Tribal Vice-Chairperson

Jenna Gosselaar
Tribal Secretary/Treasurer

Samantha Toles-Rodriguez
Tribal Council Member-At-Large

Mark Martinez
Tribal Council Member-At-Large

Re: Notice of Availability of Draft Environmental Impact Report (EIR) for the Proposed CEMEX Rockfield Quarry Modification Project (EIR No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667)

Dear Director White,

On behalf of the Table Mountain Rancheria, we are writing to express our vehement opposition to the proposed 100-year lease for the Cemex Rockfield Quarry Modification Project. This project poses an unacceptable threat to the ecological integrity of the San Joaquin River, the biological resources it sustains, and the cultural heritage deeply tied to this land. We urge you to consider the profound and irreversible consequences this lease would have on the environment, our community, and our cultural identity. Comment 52-1

This land is not just a resource to be exploited - it is a place of profound cultural significance. It is home to culturally identified sites that connect Table Mountain and other Tribes to our ancestors and our heritage. These sites are irreplaceable, and their destruction would sever our ties to the land and the traditions that define us. The river and the land are intertwined with our identity, providing sustenance, spiritual nourishment, and a sense of belonging. To allow this project to proceed would be to disregard the cultural and historical value of this place. Comment 52-2

The proposed 100-year lease is not only environmentally reckless but also morally indefensible. It prioritizes short-term economic gain over the long-term health of our planet and the well-being of future generations. We have a responsibility to protect this land and the San Joaquin River, not only for ourselves but for those who will come after us. There are alternatives that do not require sacrificing our environment and our cultural heritage. I implore you to explore these options and to reject this destructive proposal. Comment 52-3 Comment 52-4

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(559) 822-2693

Comment 52-5

We stand with countless others in our community who oppose this project. We urge you to listen to our voices, to honor the cultural and ecological significance of this land, and to take immediate action to protect it. Please deny the 100-year lease for the Cemex Rockfield Quarry Modification Project and instead work with us to preserve this invaluable resource for generations to come.

Thank you for your attention to this critical matter. We trust that you will make the right decision and prioritize the health of our environment, the protection of our cultural heritage, and the well-being of our community.

Michelle Heredia-Cordova
Tribal Chairperson

Richard L. Jones
Tribal Vice-Chairperson

Jenna Gosselaar
Tribal Secretary/Treasurer

Samantha Toles-Rodriguez
Tribal Council Member-At-Large

Mark Martinez
Tribal Council Member-At-Large

Copied To: Fresno County Board of Supervisors
2281 Tulare Street, Suite 301
Fresno, CA 93721

From:	Joe Salazar
To:	Randall , David A.
Subject:	Cemex Rockfield Expansion
Date:	Thursday, March 6, 2025 1:21:03 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hello Mr. Randall,

I'm not sure if this message will reach you regarding the public comments against the Cemex Rockfield Expansion proposal, but I just learned about this project this morning. Comment 53-1

My wife is a former Fresno County employee, we own and operate a small business in Fresno and we currently live Madera County within a 5-mile radius of this mining operation, I strongly oppose the expansion and the method of rock quarrying.

My wife and I often hike and bike to the San Joaquin River from the Tesoro Viejo community. From the hills overlooking the river, you can see, hear, and smell the quarry, even in its current state. Comment 53-2

With the proposed changes, I am concerned that the noise pollution from the quarry operations will worsen, negatively affecting both humans and wildlife in the area. Comment 53-3

This location is one of the few places where people can visit for peace and serenity without needing to travel far out of town. Comment 53-4

Additionally, the destruction of the beautiful natural habitats surrounding the river and the plant will lead to other harmful consequences. I strongly suspect that if this quarry were a completely new operation, rather than a century-old, grandfathered facility, the permit would likely be denied. Comment 53-5

Please take my concerns seriously. I do not want this expansion project in my backyard. It is detrimental to the people and wildlife who live and thrive in this area.

Sincerly,

Joe Salazar

Happy Panels
Ph: 559-492-9522
www.cleanhappypanels.com
Facebook: Happy Panels
Instagram: Happy Panels

From:	Don Simmons
To:	Randall , David A.
Subject:	CEMEX project
Date:	Friday, March 7, 2025 10:39:09 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. Randall-

Please register my opposition to the proposed expansion plans for the CEMEX project on the San Joaquin river. Comment 54-1

The proposed 100 year operation, the new pits and the new mining methods will continue to do irreparable harm to not only the SJ river, but, to miles of it's banks, add more air pollution and allow CEMEX to pollute even more water. Comment 54-2

The Project does not need to proceed, but needs to be halted, and a plan to close the CEMEX facility needs to be in place-especially due to the coming decrease in building and construction projects due to other costs. Comment 54-3

Fresno County needs to be serious about our air, water and soil environment, and stop the CEMEX destruction. Comment 54-4

Don R. Simmons, Ph.D.

SJ River user and Fresno resident --

Don R. Simmons

President and Senior Consultant
Creative Potential Consulting and Training
1440 E. Divisadero St.
Fresno, CA 93721-1114

Pronouns: "he" "him" "his"

"It is not enough to DO GOOD, we must strive to DO GOOD WELL."

From:	Diane Dimon
To:	Randall , David A.
Subject:	Possible Expansion of the CEMEX Project along our San Juaquin River
Date:	Sunday, March 9, 2025 5:39:03 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

My name is Diane Dimon. I have been a residence of Fresno County for 37 years. I am very concerned about the possibility of the Country approving the CMEX Drilling Project. Here are my concerns: Comment 55-1

1. **Blasting and drilling** for such a large, deep, and potentially destructive project just don't make sense. Sound, vibration, noise, air, water, and traffic pollution. And as yet unforeseen pollution.

2. **Truck Traffic**: If approved, CEMEX will not only continue to transport their existing quota (and surplus) of aggregate, but will increase substantially, potentially damaging Friant Road, as well as increase truck traffic. Note: Friant Road is a residential road. Comment 55-2

3. **Air Pollution**: Fresno already has horrible air quality. If CEMEX is approved, this project will add significant and unnecessary impact by way of exploding debris particles and other unforeseen events. Comment 55-3

4. **Breach of our precious River Banks**: If the water seeps into the wall of CEMEX's pit(s), it could easily breach the wall's structural integrity, pollute ground water, collapse, and who knows what kind of damage that would create downstream to human, wildlife, and agricultural life in the San Juaquin Valley. Comment 55-4

5. **Contaminating Groundwater**: As state above, Fresno residents are dependent upon well waters, and a potential CMEX disaster would destroy ability to live in the area.

6. **Effect upon neighboring real estate**. I have heard arguments lobbying for CEMEX to guarantee reimbursement for real estate value that have been damaged by any kind of mismanagement by CEMEX. This is a real possibility, and therefore should not be entertained. Comment 55-5

All of these very real environmental threats seem to me to require an obvious denial of approval of CEMEX expansion. As our community leaders, please respond to this CEMEX request with farsightedness and wisdom. Please vote NO. Comment 55-6

Sincerely,

Diane Dimon

Matters
OF THE
Mind
Health, Happiness
High Performance

Diane Dimon, Dr.RS
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March 9, 2025

Via email to drandall@fresnocountyca.gov
David Randall
Senior Planner
Fresno County Public Works & Planning Department
2220 Tulare St., 6th Floor
Fresno, CA 93721

Re: **ROCKFIELD MODIFICATION PROJECT (EIR 7763) AND UNCLASSIFIED CONDITIONAL USE PERMIT APPLICATIONS NOS. 3666 AND 3667**

COMMENTS OF FRESNO AUDUBON SOCIETY

Dear Mr Randall:

Please accept the following comments from the Fresno Audubon Society regarding the draft Environmental Impact Report (EIR 7763). Comment 56-1

Background

The Central Valley is one of the major migratory bird routes in the United States. In the spring of 2024 an estimated 44,028,000 migrating birds traversed Fresno County according to Cornell's Lab of Ornithology's BirdCast[1] migration monitoring system. This was followed last fall by an estimated 44,088,000 birds.

The San Joaquin River Corridor is a critical component in California's bird migration framework, providing essential stop-over habitat that enables transitory birds the opportunity to rest, recover, and replenish along their long journeys, many of which extend over several thousand miles. The DEIR itself recognizes its importance:

> The San Joaquin River corridor is considered a significant wildlife movement corridor that provides natural areas for wildlife to move through the region in search of food, shelter, or nesting habitat. Additionally, the San Joaquin River can

[1] BirdCast is an avian nocturnal migration monitoring system developed by the Cornell Lab of Ornithology. It utilizes weather radar data and computer analysis to provide real-time bird migration data as well as migration forecasts across the United States. It tracks both spring migration (from March 1 to June 15) and fall migration (August 1-November 15). Its information is available on both a county-specific and statewide basis, and is freely accessible by the general public.

be used as a wildlife movement corridor to facilitate movement further into the Central Valley. (DEIR 4.4.1.6, p. 4.4-19)

Comment 56-1 Cont.

The projected 100 year duration of the CEMEX Project and the massive physical scale of the Project, when coupled with its location in the heart of the biologically sensitive San Joaquin River Corridor, require a most thoughtful and thorough consideration of the environment consequences to birds and other wildlife species. The DEIR has not provided an adequate analysis of these impacts as the following will demonstrate.

Comment 56-2

Inadequacies of Avian Species Surveys

Comment 56-3

The DEIR undertook only two field surveys of wildlife in the area: April 30, 2019 and June 14, 2021. (DEIR 4.4.1.2, PDF p. 346) These generated counts of 27 bird species for the Plant Site (Appendix E-1 Table B-2, PDF p. 1160) and 31 bird species for the Quarry Site (Appendix E-2 Table B-2, PDF p. 1237).

Fresno Audubon Society (FAS) members and others have been actively birding along the San Joaquin River for many years, particularly at Lost Lake Park, which borders the northern edge of the Quarry Site. Data accumulated from over two thousand such observations along the San Joaquin River Corridor is maintained with eBird, the global database of avian observations developed by the Cornell Lab of Ornithology.[2]

Several eBird "hotspots"—specific geographic birding locations—abut either the Plant or Quarry Sites. These are: Ball Ranch, Fresno, US-CA (corresponding to Ball Ranch Natural Reserve in DEIR); Sumner Peck Ranch, Fresno, US-CA (Peck Ranch Pkwy Trust in DEIR); Ledger Island, Madera, US-CA (Ledger Island Natural Reserve in DEIR); and Lost Lake Rec Area (FRE Co.), Fresno, US-CA (Lost Lake Park and Beck Ranch in DEIR) (See maps, DEIR Figure 2-5 [PDF p. 127] and Figure 4.1-1 [PDF p. 187].)

- **San Joaquin River Parkway Surveys**. Monthly surveys sponsored by FAS encompass areas along the river both upstream downstream near the CEMEX mining operations. These have been undertaken over a number of years. eBird data for these surveys document the presence of 185 species along the River Corridor.

[2] eBird's searchable database of bird observations (checklists) contain the date, time, location, and count for each species reported by the observers. eBird employs statistical analysis as well as expert review of rare or unusual species observations to assure accuracy of its data. eBird data has been utilized for scientific research and environmental policy issues, among other things.

- **Ball Ranch eBird Hotspot**. Ball Ranch eBird checklists report161 bird species from 160 checklists as of February 2025. Ball Ranch is immediately to the north of the Plant Site. (**https://ebird.org/hotspot/L4131177**)

Comment 56-3 Cont.

- **Sumner Peck/Ledger Island Hotspots**. Sumner Peck Ranch is immediately to the south of the Quarry Site. Ledger Island is directly across the river from the Quarry Site. eBird data documents 120 bird species from 96 checklists at Sumner Peck Ranch and 98 species from 16 checklists from Ledger Island as of February 2025. (**https://ebird.org/hotspot/L13905811**, **https://ebird.org/hotspot/L4931237**)

- **Lost Lake Rec. Area Hotspot**. The Lost Lake Hotspot encompasses both Lost Lake Park and adjoining Beck Ranch. Both lie to the immediate north of the Quarry Site. eBird checklist data for this Hotspot records the observation of 228 bird species as the result of 1886 observations as of February 2025. (**https://ebird.org/hotspot/L188972**) It is particularly noteworthy that the the historical monthly species count observed at the Lost Lake Hotspot during April are 158 species and 103 species for June. This contrasts sharply to the 27 species for the Plant Site and 31 species for the Quarry Site from the combined April 2019 and June 2021 field surveys relied upon for the DEIR.

Additional local avian population data is available from the Audubon **Christmas Bird Count (CBC)** which has been conducted annually for decades within the geographic area encompassing the Project and the adjacent river corridor. Survey results for the CBC from December 2023 reflect a count of 127 bird species within the Lost Lake CBC zone. As with the eBird data, CBC data is publicly accessible. (**https://netapp.audubon.org/CBCObservation/Historical/ResultsByCount.aspx#** Count code: CALL)

The treatment of Species of Special Concern in the DEIR is also problematic. The DEIR states that governmental agency databases for Special Status plant and wildlife species were examined for four USGS quadrangle areas to determine the possible presence of such species on Project properties. The searches generated a total of 15 avian species of Special Concern between the two sites. (Table C-1 Appendix E-1 PDF page 1163 for the Plant Site and Table C-1 Appendix E-2 PDF page 1240 for the Quarry Site.)

Comment 56-4

Fresno Audubon has compared the observation data for the Lost Lake Rec Area eBird Hotspot with the January 3, 2025 California Department of Fish and Wildlife's CNDDB Special Animals List. Twenty-eight CNDDB bird species of interest have been reported at Lost Lake Park, thirteen more than is reflected in the DEIR. (One species in the DEIR inventory has not been reported at Lost Lake.) (See Table 1 attached to this letter.) This discrepancy needs to be examined and explained. Moreover, the failure to consider the impact of the Project on non-specially designated bird species needs to be justified given the number of species known to be in the area.

Comment 56-5

The understatement of avian species, both specially designated or general species, is problematic as the DEIR specifically declines to address impacts on any species not identified as having been "known to be present or have a moderate or higher potential for occurrence on the Plant Site and/or Quarry Site…" (DEIR 4.4.1.8, p. 4.4-20). Thus limited, the DEIR does not evaluate the effects of the project on well over one hundred fifty bird species known to have been observed at the adjoining Lost Lake Park, including thirteen bird species recognized by CDFW as deserving special consideration. Therefore, the assessment of the impacts and proposed mitigation measures under the Biological Resources component of the DEIR is deficient. (See Impacts 4.1-1 to 4.4-7 [ES-14 to ES-19; PDF pp. 39-43])

Comment 56-6

The DEIR Does Not Adequately Address the Impacts on Birds of Noise, Air Pollution and Other Project-Related Disturbances

Comment 56-7

An understanding of bird migratory behavior is necessary to fully consider the impact of the CEMEX project on the health of avian species. Migration is a nocturnal activity. Birds travel at night in order to avoid predators and to take advantage of usually more favorable weather conditions. Consequently, birds must rest and forage during the daylight hours. Foraging is particularly critical to birds during migration, given the tremendous amount of energy prolonged flight requires. This daylight stop-over time, however, will be occurring during the peak operations of the CEMEX Plant and Quarry Sites, when Project-generated disturbances of noise, vibration, dust and air pollution levels will be at their highest.

The DEIR analysis of the effects of these disturbances merely asserts that some bird species have become habituated to activities, providing a list of 19 birds—almost every one of which is commonly found in urban settings. The fact that pigeons frequent parking lots does not establish the the parking lot as suitable bird habitat. Because of the underreporting of bird species known to the area, the DEIR does not address how the mining activities and disturbances may affect over 150 bird species. The examples of other mining projects are presented without any proof of comparability.

There is a significant body of scientific knowledge on the effects of noise for birds.[3] However, none of the numerous studies were consulted for the DEIR. These studies have documented the following negative consequences for birds of noise and sound disturbances:

[3] See, for example Francis CD, Ortega CP, Cruz A. Noise pollution changes avian communities and species interactions. Curr Biol. 2009 Aug 25;19(16):1415-9. doi: 10.1016/j.cub.2009.06.052. Epub 2009 Jul 23. PMID: 19631542.

Physiological: cardiovascular consequences such as heart rate increase, immune response decline, hearing loss, increase in stress hormone levels.

Comment 56-7 Cont.

Behavioral: habitat abandonment, changes in foraging behavior, reduced vigilance, territory shift, navigation difficulties

Acoustic Perception: frequency interference, vocal adjustments, vocalization timing adjustment, impaired song learning, mate attraction.

The DEIR must include a comprehensive and scientifically supported assessment of the impacts of noise and other Project-generated disturbances on the variety of bird species that are actually present in and around the Project sites. This must include adopting acoustic testing measures calculated to take into account the projection of noise into areas where impacted wildlife species are likely to reside in the Corridor areas, such as tree-level monitoring.

Comment 56-8

Further, the mitigation requirements for noise monitoring program under the DEIR for the Plant Site (DEIR 4.13-2, PDF p. 802) and the Quarry Site (DEIR 4.13-3, PDF p. 804) as well as those relating to the blasting protocols, must be revised to address the consequences of Project-generated disturbances to wildlife in the adjacent habitat. Monitoring stations, equipment and monitoring protocols must take into account the requirements necessary to protect animal species known to the area.

Comment 56-9

The Riparian Corridors

Comment 56-10

The DEIR considers riparian and wildlife corridors at 4.4.1.6 (p. 4.4-18 to -19, PDF pp. 343-344). It recognizes wildlife corridors as "significant features for dispersal, seasonal migration, breeding, and foraging" which "can provide a buffer against both human disturbance and natural fluctuations in resources." It acknowledges the San Joaquin River Corridor as "a significant wildlife movement corridor that provides natural areas for wildlife to move through the region in search of food, shelter, or nesting habitat…." The DEIR discusses three wildlife or riparian corridors in the area:

(1) The area extending approximately 0.6 miles to the west of the Plant site consisting of a portion of the Willow Unit of California DWF (Willow Unit Corridor)

(2) Little Dry Creek, being a portion of the Willow Unit, lying to the north of the Plant Site and between the Plant Site and Ball Ranch

Comment 56-10 Cont.

(3) An approximate 1.4 mile section of river frontage along the western boundary of the Quarry Site featuring a 200 foot wide area between the western boundary of the Quarry site and the San Joaquin River.

The Willow Unit Corridor

Comment 56-11

This corridor lies to the west of the Plant Site. The DEIR assumes the constancy of this area as providing "abundant nesting sites," etc., for birds. However, given the protracted duration of the Project, the long term viability of the Corridor as wildlife habitat is a relevant consideration. Therefore, the impact of climate change and projected increasing significance of drought conditions should be considered. Although the Report appears to tout the Willow Unit as an ecologically redeeming feature of this area, it's relevance as an ameliorative consideration in the overall scheme of the project will diminish as the focus of operations shift from the Plant Site to the Quarry Site some distance away.

The Little Dry Creek Corridor

Comment 56-12

The DEIR identifies Little Dry Creek as a "riparian corridor with a connection to the San Joaquin River." It consists of a seasonal creek bed with sparse vegetation, featuring a number of dead trees and dead shrubs. The creek bed largely sits at a lower elevation than the adjacent Plant Site and Ball Ranch and provides virtually no acoustic or aesthetic buffer from the Plant Site's activities. It offers little meaningful cover for wildlife so it cannot be considered to be a "wildlife corridor" as defined in the DEIR. If it is intended by CEMEX to suggest that Little Dry Creek is a biological mitigating consideration for its project, then it should be required to implement a program for its revegetation.

As is the case with the Willow Unit Corridor, the DEIR does not address how climate change and drought may further affect this area. The creek appears particularly vulnerable to these factors given the seasonality of the water flow and the notable presence of dead trees and plant materials. Here again, the relevance of Little Dry Creek as an ameliorative consideration, if it may be considered such, will decline with the shift of activities from the Plant Site to the Quarry Site.

The Quarry Site Corridor

Comment 56-13

The DEIR identifies the area adjacent to the western boundary of the Quarry Site as part of the San Joaquin River Corridor. This riverfront is approximately 1.4 miles in length. The width of the area between the Quarry Site and the River is stated to be 200 feet, however, that will be reduced by the anticipated grant of an an easement for the River Parkway trail which size requirements are undetermined. The DEIR does not disclose the condition of the riverfront on the opposite bank.

Comment 56-14

The Project proposes a qualitative change in the operations of the Quarry Site which will include a significant increase in mining activity accompanied by extensive excavation and blasting, and in turn, an extraordinary increase in Project-generated disturbances (noise, vibration, dust, air and water pollution) from which the Corridor must shield wildlife, both resident and migratory, over the course of the projected 100 years. Additionally, the shift in the locus of operations from the Plant Site a half mile from the San Joaquin River to the Quarry Site only 200 feet from the river requires special attention be given to the adequacy of this portion of the Corridor to protect wildlife. The following must be considered in the DEIR, especially with reference to the Quarry Site area:

Comment 56-15

- The width of corridor necessary to buffer wildlife from the Project-related disturbances. The DEIR does not consider the scientific research on features such as corridor width, although a number of studies exist. Much of the research indicates the necessity of corridors well in excess of the 200 foot width proposed. Rather than address the research, the DEIR merely adopts the minimum standard width required under the Fresno County General Plan. This requires further study, including consideration of the science relating to the effects of noise and other disturbances, as discussed above.

- How will the development of the anticipated multi-use River Parkway trail impact the suitability of the corridor as a wildlife corridor, given the proposed initial width of only 200 feet for the boundary?

Comment 56-16

- What mitigation measures, such as ongoing revegetation programs, soil conservation projects and the like, are necessary to sustain an appropriate buffer to protect wildlife over the lifespan of the Project? How will these measures be determined and monitored? How will performance of mitigation measures be enforced and how will that performance be secured?

Comment 56-17

- What mitigation measures should be required in order to restore suitable biological buffer zone in the event of collapse or compromise due to flooding or other geologic or hydraulic event causing the berm to collapse?

Comment 56-17 Cont.

The DEIR is incomplete in its assessment of the impacts likely to result from the CEMEX Project. Substantial data and research are available from which a comprehensive and accurate impact report can be generated. Our community deserves to have a fully-developed analysis to consider.

Comment 56-18

On behalf of Fresno Audubon Society, I thank you for this opportunity to present the foregoing comments.

Respectfully submitted,

Rick Grijalva
President

California DFW CNDDB Listed Birds of Interest (2025) Observed at Lost Lake Rec Area

	Bird Observed at Lost Lake	Included in EIR List of Species of Interest (C-1 tables)
1	American White Pelican	No
2	Bald eagle	Yes
3	Black-crowned night heron	No
4	Burrowing owl	Yes
5	Cooper's hawk	Yes
6	Double-crested cormorant	No
7	Golden eagle	Yes
8	Great blue heron	Yes
9	Great egret	Yes
10	Horned lark	Yes
11	Lawrence's goldfinch	No
12	Lewis's woodpecker	No
13	Loggerhead shrike	Yes
14	Long-billed curlew	No
15	Merlin	No
16	Northern harrier	Yes
17	Osprey	Yes
18	Peregrine falcon	No
19	Prairie falcon	No
20	Sharp-shinned hawk	No
21	Snowy Egret	No
22	Swainson's hawk	Yes
23	Tricolored blackbird	Yes
24	Vesper sparrow	No
25	White-tailed kite	Yes
26	Willow Flycatcher	No
27	Yellow warbler	No
28	Yellow-headed blackbird	Yes
	Not observed at Lost Lake: Western yellow-billed cuckoo	

TABLE 1

From:	radleyreep@netzero.net
To:	Randall , David A.
Cc:	kaybertken752@gmail.com; rchiero@comcast.net
Subject:	CEMEX Rockfield Quarry Modification Project EIR
Date:	Monday, March 10, 2025 12:54:50 PM
Attachments:	2025 - 03-10 - League Letter to Fresno County - Comment on the DEIR for the CEMEX Mine Application.pdf 1988 - Special Report 158 - Mineral Land Classification - Fresno P-C Region-compressed.pdf 2018 - Map Sheet 52 - Permitted PCC-Grade Aggregate Resources.pdf

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 10, 2025

Dear Mr. Randall,

Please find attached a comment letter on the Draft EIR for the CEMEX Rockfield Quarry Expansion Project from the League of Women Voters of Fresno. The letter includes two attachments.

Thank you,

Radley Reep
League of Women Voters of Fresno

League of Women Voters of Fresno
1345 Bulldog Lane
Fresno, California 93710

March 10, 2025 *SENT VIA EMAIL*

David Randall, Senior Planner
Fresno County Public Works and Planning Department
2220 Tulare St., 6th Floor
Fresno, CA 93721

SUBJECT: DRAFT ENVIRONMENTAL IMPACT REPORT (SCH No. 2020060123) FOR THE CEMEX ROCKFIELD QUARRY MODIFICATION PROJECT (DECEMBER 2024)

Dear Mr. Randall:

The League of Women Voters of Fresno (League) is a nonpartisan political organization that encourages the informed and active participation of citizens in government, works to increase understanding of major public issues and helps shape public policy through education and advocacy. Comment 57-1

In preparing these comments, the League reviewed the following documents: Comment 57-2

- Surface Mining and Reclamation Act of 1975
- Special Report 158 (Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region, California Department of Conservation – Division of Mines and Geology, 1988)
- Fresno County General Plan Policy Document (February 2024)
- Fresno County Zoning Ordinance, Division 6 of the Fresno Ordinance Code (February 2024)
- San Joaquin River Parkway Master Plan Update (April 2018)
- Draft Environmental Impact Report for the CEMEX Rockfield Quarry Modification Project (December 2024)

CEMEX proposes to modify its Rockfield mining operation to include hard rock mining.

The League asserts that such use is inconsistent with current land use plans and, therefore, that the Draft EIR is incorrect in concluding that the proposed project will not conflict with current land use plans. With respect to the use of river bottom land below Friant Dam, current plans do not entertain, embrace, encourage, envision, or even mention such use. Comment 57-3

The only type of mining addressed in local land use plans is the excavation of alluvial deposits — not the blasting and crushing of bedrock.

Surface Mining and Reclamation Act of 1975 (SMARA)

Comment 57-4

The principal aim of the Surface Mining and Reclamation Act of 1975 (SMARA) is to protect the environment while allowing responsible mineral extraction. More specifically, the act ensures that the adverse environmental impacts from mining are minimized, that mined lands are reclaimed to a usable condition and that lands bearing mineral resources are protected from encroachment by land uses that could preclude future mining.

With regard to protecting mineral bearing lands from encroachment, SMARA § 2761 requires the Office of Planning and Research to identify areas within the state that are being urbanized or are subject to urban expansion or other irreversible land uses that could preclude mineral extraction. The State Geologist is required to map those areas, and local jurisdictions are required to incorporate that information into their respective general plans and zoning codes. Areas known to contain PCC-grade aggregate (aggregate suitable for making high-quality portland cement concrete) are classified as Mineral Resource Zone 2 (MRZ-2).

Special Report 158 — Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region

Comment 57-5

In 1988, the State Geologist published Special Report 158, which described in detail the location of aggregate resources on the valley floor that could be extracted and used in the Fresno area. The State Geologist mapped 31 square miles containing in excess of 2.1 billion tons of aggregate — nearly all which was located within floodplains created by the San Joaquin and Kings Rivers.

In 1988, mining permits in the Fresno area allowed the excavation of 119 million tons of aggregate — only 44% of the projected need for the Fresno area for the next 50 years.[1] Absent the approval of additional mining permits, the projection was that the Fresno area would run out of mined aggregate by 2010. But that shortfall never occurred. Over the next 30 years, a considerable amount of new acreage was opened to mining, and by 2018, although the 50-year need had grown to 306 million tons, aggregate resources under permit totaled 556 million tons, which was 182% of the Fresno area need through 2068.[2]

For this discussion it's important to note that the only aggregate resources evaluated by the State Geologist were those found in alluvium — the particulate rock material (sand and gravel) deposited by streams and rivers.[3] Special Report 158 did not assess the excavation (blasting) of bedrock.

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[1] Special Report 158 - Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region, prepared by the State Geologist, 1988, page x.

[2] Map Sheet 52 – Aggregate Sustainability in California (updated 2018), published by the California Department of Conservation, page 5.

[3] Page ix of the Executive Summary for Special Report 158 reads, " This report presents the results of the classification of aggregate resources by the Division of Mines and Geology (DMG) in the Fresno Production-Consumption (P-C) Region. **The primary goals of the study were…to delineate within the P-C region all land containing sand and gravel deposits** suitable for production as high-quality, Portland cement concrete (PCC) aggregate. (Highlighting added.)

In accordance with SMARA and Special Report 158, the County included in its General Plan update in 2000[4] several policies designed to conserve and protect sand and gravel resources.

Policy OS-C.1	The County shall not permit incompatible land uses within the impact area of existing or potential surface mining areas.
Policy OS-C.2	The County shall not permit land uses incompatible with mineral resource recovery within areas designated as Mineral Resource Zone 2 (MRZ-2). (See Figures 7-9, 7-10, and 7-11 in Fresno County General Plan Background Report.)
Policy OS-C.3	The County shall require that the operation and reclamation of surface mines be consistent with the State Surface Mining and Reclamation Act (SMARA) and special zoning ordinance provisions.
Policy OS-C.4	The County shall impose conditions as necessary to minimize or eliminate the potential adverse impact of mining operations on surrounding properties.
Policy OS-C.5	The County shall require reclamation of all surface mines consistent with SMARA and the County's implementing ordinance.
Policy OS-C.6	The County shall accept California Land Conservation (Williamson Act) contracts on land identified by the State as containing significant mineral deposits subject to the use and acreage limitations established by the County.
Policy OS-C.7	The County shall require that new non-mining land uses adjacent to existing mining operations be designed to provide a buffer between the new development and the mining operations. The buffer distance shall be based on an evaluation of noise, aesthetics, drainage, operating conditions, biological resources, topography, lighting, traffic, operating hours, and air quality.
Policy OS-C.8	The County shall, where feasible along the San Joaquin River, site recreational trails, bikeways, and other recreation areas at least three hundred (300) feet from the edge of active aggregate mining operations and separate them by physical barriers. Recreational trail/bikeway crossings of active haul routes should be avoided whenever possible; if crossings of haul routes are necessary, separate where feasible.
Policy OS-C.9	The County shall require that any proposed changes in land use within areas designated MRZ-2 along the San Joaquin and Kings Rivers comply with the provisions of the State Surface Mining and Reclamation Act (SMARA).
Policy OS-C.10	The County shall not permit land uses that threaten the future availability of mineral resource or preclude future extraction of those resources.
Policy OS-C.11	The County shall undertake a comprehensive, watershed-based planning effort to assess future extraction of the aggregate resources and recreation uses along the Kings River as a part of an update of the Kings River Regional Plan. Such a planning effort would help to facilitate use of the resource while protecting other Kings River watershed resources and functions, including floodplain areas. (See Policy OS-H.10, Policy LU-C.5, and Program LU-C.A)

These same policies remained unchanged when, in 2024, the County updated its General Plan Policy Document.

[4] 2000 General Plan Policy Document, pages 5-9 and 5-10.

Fresno County Zoning Ordinance, Division 6 of the Fresno Ordinance Code (February 2024)

Comment 57-7

On May 18, 1999, the Board of Supervisors added to the County's Zoning Ordinance Section 858 — *Regulations for the Development of Material Extraction Sites in all Districts*.[5]

Section 858 describes the process for permitting new mines, lists standards for mine operation and reclamation and explains obligations related to annual inspections and financial assurances.

The ordinance does not mention hard rock mining, It does, however, directly refer to sand and gravel operations. As shown below, for example, Section 858(D)(3) states that a mining plan must include cross section drawings showing the extent of **sand and gravel** deposits.

> 3. Mining plan.
> a. A site plan which includes all of the following:
> (1) Existing and proposed roads, including ingress-egress roads and on-site roads; proposed surface treatment and means to limit dust.
> (2) Processing and storage areas including locations of equipment, structures, and facilities.
> (3) Proposed setbacks, screening, fencing, gates, parking, and signs.
> (4) Proposed phasing for the mining operation and reclamation work.
> (5) Cross section (typical) defining planned slopes, extent of overburden, extent of sand and gravel deposits, and water table." (Highlighting added.)

At the time the County was preparing the Draft EIR for the CEMEX Rockfield Quarry Modification Project, it was also reviewing Ordinance Section 858 as part of the County's 2024 update of its Zoning Ordinance. Although the opportunity presented itself, the County did not revise Section 858 to include a discussion of hard rock mining.

San Joaquin River Parkway Master Plan Update (April 2018)

Comment 57-8

The San Joaquin River Conservancy last updated its Parkway Master Plan in April of 2018. Just as with the Fresno County Zoning Ordinance, the San Joaquin River Master Plan refers to sand and gravel operations — not to blasting operations.

Printed below are the Parkway Master Plan's two mineral resource goals.[6]

> Goal MR1: Work with gravel mining companies to acquire high priority properties after they have been reclaimed. Promote reclamation plans that enhance and complement Parkway goals and are Parkway-ready to the extent practicable. (Highlighting added.)
>
> Goal MR2: Design, construct, and manage the Parkway in a manner that will not conflict with sand and gravel mining operations. (Highlighting added.)

[5] With the update of the Zoning Ordinance in February 2024, Section 858 was renamed 834.4.220 - Material Extraction Sites

[6] Citation from the San Joaquin River Parkway Master Plan, Section 6 (Goals and Policies) as adopted by the San Joaquin River Conservancy by Resolution 18-01 on April 11, 2018.

Comment 57-9

The Draft EIR for the CEMEX Rockfield Quarry Modification Project does not discuss the fact that there is no accommodation for hard rock mining in the San Joaquin River floodplain in either the Fresno County General Plan, the Fresno County Zoning Ordinance or the San Joaquin River Parkway Master Plan. Nonetheless, the Draft EIR claims that the proposed use is consistent with these plans.

Comment 57-10

The Draft EIR claims "the proposed project would be consistent with each of the applicable Fresno County General Plan goals and policies,"[7] but this claim is incorrect. The County promotes mining activities only where aesthetic impacts can be adequately mitigated. General Plan Goal OS-C[8] reads as follows:

> Fresno County General Plan Goal OS-C: To conserve areas identified as containing significant mineral deposits and oil and gas resources for potential future use, while promoting the reasonable, safe, and orderly operation of mining and extraction activities within areas designated for such use, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated. (Highlighting added.)

According to the Draft EIR, the project's impact on aesthetic and visual resources cannot be mitigated.[9] The impact remains significant and unavoidable even with the application of feasible mitigation. Plainly, the Draft EIR erred in finding consistency with the County's General Plan.

In addition, the Fresno County General Plan contains two identical, unequivocal directives that the County support policies of the San Joaquin River Parkway Master Plan that protect the Parkway as an aesthetic resource.[10]

> Fresno County General Plan Policy OS-A.15: San Joaquin River Protection. The County shall support the policies of the San Joaquin River Parkway Master Plan to protect the San Joaquin River as an aquatic habitat, recreational amenity, aesthetic resource, and water source. (Highlighting added.)

> Fresno County General Plan Policy OS-H.10: San Joaquin River Parkway Master Plan. The County shall support the policies of the San Joaquin River Parkway Master Plan to protect the San Joaquin River as an aquatic habitat, recreational amenity, aesthetic resource, and water source. (RDR/PSP)

Comment 57-11

The Draft EIR also claims that the proposed project "would be consistent with the Fresno County Zoning Ordinance"[11] due to the fact that the company's current permits comply with Zoning Ordinance Section 834.4.220 - Material Extraction Sites (Formerly Section 858). But the these entitlements only permit the excavation of alluvial deposits (sand and gravel). And as previously explained, the County's surface mining ordinance was primarily designed to accommodate the extraction of the high quality sand and gravel deposits identified in Special Report 185.

[7] Draft EIR Volume 1, page 4.11-49.
[8] Draft EIR Volume 1, page 4.11-26.
[9] Draft EIR Volume 1, page ES-11.
[10] Draft EIR Volume 1, Volume 1, page 4.11-23; 2024 Fresno County General Plan Policy Document, page 2-137.
[11] Draft EIR Volume 1, page 4.11-49.

The Draft EIR also lists reasons why "the project would be consistent with the policies of the San Joaquin River Parkway Master Plan."[12] They are these:

Comment 57-12

- The project applicant will offer potential trail easements at the Plant Site and the Quarry Site.
- The project applicant has installed and now maintains nest boxes for cavity-nesting songbirds.
- The proposed project will not disturb wildlife corridors along the river any more than it already has.
- Revegetation would include native plant species that provide food and habitat for wildlife.
- Reclamation will create approximately 500 acres of open water wildlife habitat (fenced with barbed wire).

While it is true that Parkway policies embrace constructing trails and improving wildlife habitat, it's also important to note that the Parkway Master Plan only acknowledges the existence of sand and gravel mining operations within its perimeter, not hard rock mining.

Furthermore, the Draft EIR fails to acknowledge that in an effort to protect wildlife along the river corridor, the San Joaquin River Conservancy, by law,[13] can only provide low-impact recreation for the visiting public. It's difficult to imagine how the Parkway's mandate to protect wildlife through low-impact recreation is enhanced by a mining operation that is permitted to blast bedrock underlying the Parkway to the year 3025.

Comment 57-13

And finally, the claim in the Draft EIR that the Rockfield Quarry Modification Project is consistent with the Parkway Master plan because it conserves gravel reserves along the San Joaquin River needed for the San Joaquin River Restoration Program[14] is specious in that the mine operation has no control whatsoever over land uses on neighboring properties.

Conclusion

Comment 57-14

The Draft EIR is incorrect in concluding that the project will not conflict with current land use plans. The Fresno County General Plan and Zoning Ordinance only support the mining of alluvium (sand and gravel) in the San Joaquin River floodplain — not hard rock mining. This is made abundantly clear in General Plan Policy LU-C.2,[15] which reads…

> Fresno County General Plan Policy LU-C.2: San Joaquin River Corridor Overlay
> Within the San Joaquin River Corridor Overlay, the County shall accommodate agricultural activities with incidental homesites, recreational uses, sand and gravel extraction, and wildlife habitat and open space areas. (See Figure LU-2) (RDR)

[12] Draft EIR Volume 1, page 4.11-23, 4-11-44 through 4-11.47.

[13] Public Resources Code § 32510. The San Joaquin River Conservancy is hereby established in the Resources Agency to acquire and manage public lands within the San Joaquin River Parkway….The conservancy shall acquire and manage these lands in the parkway to provide a harmonious combination of low-impact recreational and educational uses and wildlife protection through the preservation of the San Joaquin River, existing publicly owned lands, the wildlife corridor, and natural reserves. *(Amended by Stats. 1994, Ch. 605, Sec. 1. Effective January 1, 1995.)*

[14] Draft EIR page 4.11-46

[15] Fresno County General Plan Policy Document (2024), page 2-36.

Curing the inconsistency with existing plans necessitates revision of the Fresno County General Plan, the Fresno County Zoning Ordinance and the San Joaquin River Parkway Master Plan. Environmental information in the accompanying EIRs would need to be updated as well.

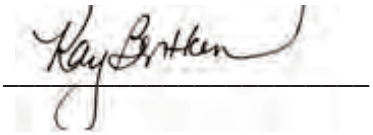
Comment 57-14 Cont.

Please find attached a copy of Special Report 158 (Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region, California Department of Conservation – Division of Mines and Geology, 1988) and a copy of Map Sheet 52 (Aggregate Sustainability in California (updated 2018), published by the California Department of Conservation).

Comment 57-15

The League of Women Voters of Fresno appreciates the opportunity to comment on the Draft EIR for the CEMEX Rockfield Quarry Modification Project.

Sincerely,



Kay Bertken, Co-President
League of Women Voters of Fresno

Robin Chiero, Co-President
League of Women Voters of Fresno

MINERAL LAND CLASSIFICATION: AGGREGATE MATERIALS IN THE FRESNO PRODUCTION-CONSUMPTION REGION

1988

CALIFORNIA DEPARTMENT OF CONSERVATION
DIVISION OF MINES AND GEOLOGY

SPECIAL REPORT 158

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SPECIAL REPORT 158

MINERAL LAND CLASSIFICATION: AGGREGATE MATERIALS IN THE FRESNO PRODUCTION-CONSUMPTION REGION

1988

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FOREWORD

Special Report 158, "Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region," is the first analysis of mineral resources in the San Joaquin Valley to be developed by the California Department of Conservation, Division of Mines and Geology under authority of the Surface Mining and Reclamation Act of 1975 (SMARA). This classification is provided to the State Mining and Geology Board for transmittal to the local governments that regulate land use in this region, and for consideration of areas, if any, to be designated as regionally significant. SMARA was enacted by the State Legislature to assure mineral resource conservation and adequate mined land reclamation.

The Mining and Geology Board adopted guidelines in June 1978 to be employed by the Division in its mineral resource classification. This report was prepared in conformance with those directives. The undertaking is of great importance in economic geology because it deals with very specific mineral resource conservation issues in areas of intensive competing land use.

James F. Davis
State Geologist

PREFACE

Reserve tonnage data presented in this report was accurate as of January 1985. In 1986, a preprint version of the report was circulated to lead agencies and made available to the public. Changes in reserves resulting from either the premature closure of mines active in 1985, or the permitting of new mines since that time, may have impacted forecasted depletion dates for the production-consumption region studied. However, the material presented and the fundamental conclusions of the report remain valid and useful.

David J. Beeby
Urban SMARA Program Manager

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EXECUTIVE SUMMARY

This report presents the results of the classification of aggregate resources by the Division of Mines and Geology (DMG) in the Fresno Production-Consumption (P-C) Region. The primary goals of the study were:

1. To delineate within the P-C region all land containing sand and gravel deposits suitable for production as high-quality, Portland cement concrete (PCC) aggregate.
2. To calculate the quantity of the resources in these deposits that are on lands considered by the State to be available for possible aggregate production based upon evaluation of land uses.
3. To evaluate the adequacy of the current aggregate reserves (aggregate resources on land permitted for mining by local government) for meeting the future needs of the P-C region.

In the Fresno area, as in any rapidly urbanizing area, it is important that land-use decisions are made with full recognition of the natural resources of the area. This is especially true when the resource in question is high-grade construction aggregate, an indispensable building material which is costly to transport.

The Fresno area has been fortunate in that adequate quantities of low-cost, high-quality aggregate materials have been available locally. However, the amount of this material is diminishing as active aggregate producers deplete their deposits and land containing suitable sand and gravel resources is utilized for urban development.

The loss of regionally significant mineral deposits to land uses that preclude mining is one of the problems that the California Surface Mining and Reclamation Act of 1975 (SMARA) was framed to address. SMARA mandates a two-phased mineral resource conservation process called classification-designation. The objective of the classification-designation process is to provide information on future resource availability to the urban population centers which depend upon it for future growth. This perspective will hopefully provide a context for land-use decisions by local government within which mineral resource availability is acknowledged as a pertinent factor.

The DMG is responsible under SMARA for carrying out the classification phase of the classification-designation process. Classification of land for aggregate resources in the Fresno area is presented in this report. The State Mining and Geology Board (the Board) is responsible for the second phase of SMARA. In this phase, the Board may designate areas within a P-C region that contain significant deposits of PCC-grade aggregate that may be needed to meet the region's future demand. The Board's decision to designate an area is based upon information in the classification report prepared by DMG and input received from lead agencies and the public. Through designation, the Board provides formal recognition of regionally significant deposits of aggregate resources.

As with many forecasts of economic activity, the forecasts in this report should not be viewed as offering unqualified predictions of how the future will unfold. They are based upon the assumption that the data base is accurate and that the development trends of the past three decades will continue into the five decades ahead.

Assuming, however, the correctness of DMG's forecasts regarding the consumption of aggregate, the following conclusions were reached:

- The consumption of aggregate resources in the P-C region through the year 2034 is forecast to be 268.4 million tons, of which approximately 50 percent or 134.2 million tons must be of PCC quality.
- Unless additional resources are permitted for mining, or alternative resources are utilized, total existing PCC reserves would be depleted by mid-2010.
- More than 119.3 million tons of permitted PCC-grade reserves exist in the P-C region.

- In total, the 119.3 million tons of permitted PCC-grade aggregate reserves could provide only 44 percent of the anticipated consumption of all aggregate during the next 50 years.
- The expected longevity of the existing PCC reserves is based upon the assumption that mining of these reserves will continue to be permitted until the reserves are depleted.
- In excess of 2.1 billion tons of aggregate resources (including reserves) have been identified within the Fresno P-C Region. Twenty-eight million tons of the nonpermitted resources occur in dedicated parklands and are unlikely to be permitted for mining.
- The Fresno P-C Region covers an area of 1,400 square miles, of which 39 square miles (3 percent of the total area) were classified MRZ-2. Only 31 square miles (2 percent of the total area) have been sectorized as having current land uses which do not preclude mining. Almost 3½ square miles of the sectorized areas are currently under mining permits.
- The 31 square miles of sectorized lands considered in this study to be available for meeting future aggregate needs may be greater than the amount local governments consider to be available for mining. The reason for this discrepancy is that sectorized lands may have already been committed by local governments to purposes other than aggregate mining. The significance of this difference of opinion regarding availability is that the projected available resources (as defined by the Board) may be optimistic, and the problem of meeting future aggregate needs could be greater than that described in this report.

It is important, therefore, that local governments promptly review the sector areas shown as available for future aggregate extraction. Local governments will then be able to verify or amend as necessary the conclusions reached in this report.

MINERAL LAND CLASSIFICATION: AGGREGATE MATERIALS IN THE FRESNO PRODUCTION-CONSUMPTION REGION

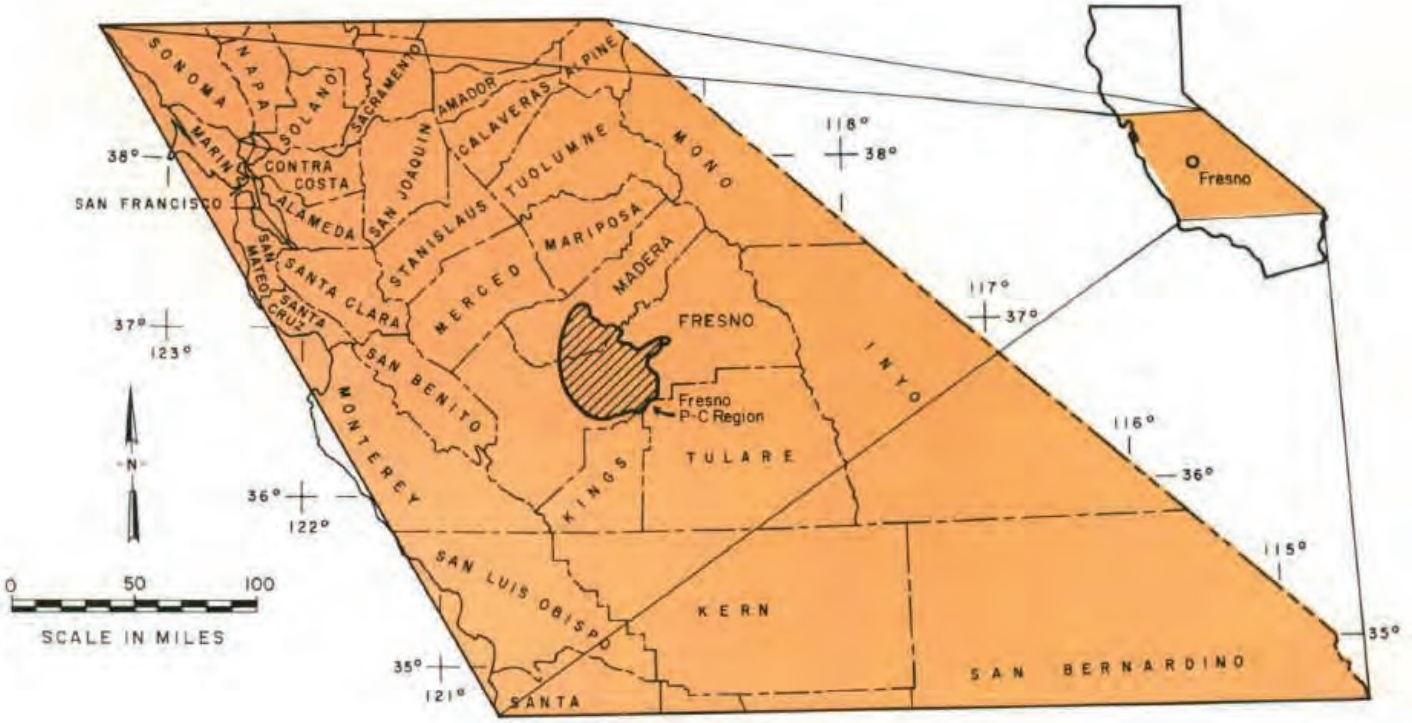


Figure 1. General location of the Fresno P-C Region.

INTRODUCTION

In the Fresno area (Figure 1 and Plate 1), as in any rapidly urbanizing area, it is important that land-use decisions are made with full recognition of the natural resources of the area. This is especially true when the resource in question is high-grade construction aggregate used in Portland cement concrete (PCC). This type of aggregate is an indispensable building material and is costly to transport.

The Fresno area has been fortunate in having adequate quantities of low-cost, high-quality aggregate materials locally available. However, the amount of these materials available for future development is diminishing as active aggregate producers deplete their deposits and land containing suitable sand and gravel resources is utilized for urban development.

The loss of access to regionally significant mineral deposits as a result of land uses that preclude mining is one of the problems that the California Surface Mining and Reclamation Act of 1975 (SMARA) was framed to address. SMARA mandates a two-phased mineral resource conservation process called classification-designation. The objective of this process is to establish an awareness of the availability of important resources to urban population centers through communication with the appropriate lead agencies regarding the location and significance of mineral deposits within their region.

Overview of Classification

The DMG is responsible under SMARA for carrying out the classification phase of the classification-designation process. Classification entails six distinct but interrelated steps. These six steps are described below.

1. *Determination of Production-Consumption (P-C) Region Boundaries*. The boundaries of the P-C region are drawn along the limits of the marketing area of the active aggregate operations supplying the urban center under study.

The Fresno area was chosen for study as an urban center anticipated by the State Office of Planning and Research (OPR) to experience expansion. The marketing area of the production sites supplying Fresno was determined by interviews of aggregate operators and analysis of the transport rates set by the Public Utilities Commission (PUC).

2. *Establishment of Mineral Resource Zones (MRZ).* All lands within the Fresno P-C Region are assigned Mineral Resource Zone classifications (MRZ-1, MRZ-2, MRZ-3, or MRZ-4) based upon a geologic appraisal of the aggregate resource potential of the land. This appraisal includes study of pertinent geologic reports and maps, field investigation and sampling at outcrops and at active and inactive pits and quarries, and analysis of water-well logs and drill records.

3. *Identification of Available Aggregate Source Areas as Sectors.* Lands containing significant deposits of PCC-grade sand and gravel (areas classified MRZ-2 in step 2) are evaluated to determine whether or not current uses of these lands preclude possible future mining. Areas currently permitted for mining and areas found to have land uses compatible with possible future mining are considered available for mining. Sectors which identify available land are delineated and described in detail. Criteria for sectorization of MRZ-2 areas, established by the Board, are given in the Appendix.

4. *Calculation of Resource Tonnages within Sectors.* Investigation and analysis of on-site conditions, measurement of the areal extent of deposits, drill-hole information, waste-material percentages, and deposit densities are used to calculate total tonnages of PCC-grade aggregate *reserves* (deposits in land owned by an aggregate producer and permitted for mining by local government at the end of 1984) and *resources* (all deposits of PCC quality, including the reserves) within each sector. Calculations generally reflect conditions of the deposits at the end of 1984, so resource depletion since that time has not been considered.

5. *Forecast of 50-Year Needs and the Life Expectancy of Current Reserves.* The total tonnage of aggregate needed to satisfy demand in the Fresno P-C Region over the next 50 years is estimated based on a comparison of the projected population over that period with the average annual per capita rate of total aggregate consumption from 1960-1983. Even though all identified reserves are of PCC quality, other aggregate commodities are routinely produced and marketed from them. The projected life expectancy of the reserves is based on the assumption that this practice will continue. Results of this forecast are used to determine the life expectancy of the P-C region's current reserves.

6. *Identification of Alternative Resources.* Alternative sources of aggregate to meet the forecast 50-year demand are identified and briefly considered.

Brief Overview of Designation

The present report is concerned with the classification phase of the two-step process mandated by SMARA. The designation phase, the second phase of the SMARA process, follows receipt and acceptance of this classification report by the State Mining and Geology Board. Based upon the sector descriptions provided by DMG, and input from local lead agencies and the public, the Board may adopt regulations which "designate" certain mineral resource deposits as being regionally significant to satisfy future needs. Such designation, if made, would be included as part of state policy.

Overview of Aggregate Uses

Sand, gravel, and crushed stone are "construction materials." These commodities, collectively referred to as aggregate, provide bulk and strength to Portland cement concrete, asphaltic concrete, plaster and stucco. Aggregate is also used as road base, subbase, railroad ballast, and fill. Aggregate normally provides from 80 to 100 percent of the material volume in the above uses.

Aggregate material is essential to the needs of a modern society. It is a resource of great importance to the economy of any metropolitan area.

During 1983, about 2.7 million tons of aggregate, an amount worth between $10 and $11 million, were mined from the San Joaquin River and Kings River deposits in the Fresno P-C Region. Nearly 95 percent of this amount was consumed within the P-C region, and there are no known imports of PCC-grade aggregate into the region. Approximately 50 percent of the aggregate produced from 1960 to 1982 was used as Portland cement concrete aggregate (U.S. Bureau of Mines statistics). Enormous tonnages of high-quality PCC-grade aggregate are used in concrete highways, dams, canals, airport runways, bridge abutments, foundations, buildings, and general construction.

In this aggregate resource classification study, special emphasis is given to aggregate that meets the specifications used in making Portland cement concrete. The material specifications for PCC-grade aggregate are more restrictive than the specifications for aggregate for other applications. The restrictiveness of these specifications makes deposits acceptable for use as PCC aggregate the scarcest and most valuable of aggregate resources. This also means that aggregate produced from such deposits can be and is commonly used in applications other than concrete. Because of its versatility, its value, its importance in construction, and its relative scarcity, PCC-grade aggregate deposits are of the most concern when planning for the future availability of aggregate commodities.

In past years, the population in the Fresno area has been served by high-quality, relatively low-cost aggregate deposits from the San Joaquin and Kings rivers. However, the high-quality deposits are rapidly being depleted, and many of the potential sources are becoming inaccessible as urbanization encroaches on lands once used solely for mining and agriculture.

Rarely, even from the highest-grade deposits, is in-place aggregate raw material physically or chemically suited for every type of aggregate use. Every potential deposit must be tested to determine how much of its material can meet specifications for a particular use and for what processing is required. Specifications for various uses of aggregate material have been established by several agencies, such as the U.S. Bureau of Reclamation, the U.S. Army Corps of Engineers, and the California Department of Transportation (Caltrans), to ensure that aggregate is satisfactory for specific uses. These agencies and other major consumers of concrete test aggregate for acceptance by standard test procedures outlined by such organizations as

the American Society for Testing Materials and the American Association of State Highway Officials.

Most aggregate specifications have been established to ensure the manufacture of strong, durable structures capable of withstanding the physical and chemical effects of weathering and use. For example, specifications for Portland cement concrete and concrete products prohibit or limit the use of rock materials containing mineral substances such as gypsum, pyrite, zeolites, opal, chalcedony, chert, siliceous shale, volcanic glass, and some high-silica volcanic rocks. Gypsum shortens the setting time of Portland cement, pyrite dissociates to yield sulfuric acid and an iron oxide stain, and other substances contain silica in a form that reacts with alkali substances in the cement, resulting in cracks and "pop-outs."

Specifications also call for precise particle-size distributions for the various uses of aggregate. Aggregate is commonly classified into two general sizes: coarse aggregate and fine aggregate. Coarse aggregate is rock retained on a 3/8" or a #4 U.S. sieve. Fine aggregate passes a 3/8" sieve and is retained on a #200 U.S. sieve (a sieve with 200 weaves per inch). For some uses, such as asphalt paving, particle shape is specified. Caltrans Standard Specifications (1981) require that at least 25 percent by weight of coarse aggregate (1/4 inch to 3/4 inch diameter) used as Class 2 aggregate base material shall be crushed particles. Furthermore, aggregate material used with bituminous binder to form sealing coats on road surfaces shall consist of at least 90 percent by weight of crushed particles. Crushed stone is preferable to natural gravel in asphaltic concrete because asphalt adheres better to broken surfaces than to rounded surfaces, and the interlocking of angular particles strengthens the asphaltic concrete and road base.

The preferred use of one aggregate material over another in construction practices depends not only on specification standards, but also on economic considerations. Alluvial gravel is preferred to crushed stone for Portland cement concrete aggregate because the rounded particles of alluvial sand and gravel result in a mix that is easier to work than a mix composed of angular fragments. The workability of a mix consisting of Portland cement with crushed stone aggregate can be improved by adding more sand, water, and cement which must be added to the mix to maintain concrete durability standards. At the present time, the additional cement amounts to about a quarter of a 94 pound sack per cubic yard of concrete at an additional cost of about $0.75 per yard of mix. Although more care is required in pouring and placing mix containing crushed stone, Portland cement concrete made with this aggregate is as satisfactory as that made with alluvial sand and gravel of comparable rock quality.

In the Fresno area, PCC aggregate sells in bulk for about $4.00 per ton at the plant site (in mid-1984). However, this selling price reflects only part of the costs to the consumer. Transport costs are a significant part of the final delivery price. In areas that lack nearby aggregate sources, the delivery charges alone may be greater than the sale price of the material at the plant site.

Background and Purpose

Urban expansion has been a major contributing factor to the loss of significant mineral resources in past years. In response to the problem of conflicting land use, the need for essential mineral products and for information concerning their location and quantity, the California State Legislature enacted the Surface Mining and Reclamation Act of 1975. SMARA requires the State Geologist to classify,* according to the presence or absence of significant mineral deposits, certain areas of the state which are subject to urban expansion or other irreversible land uses incompatible with mining. Urbanizing areas are identified by the State Office of Planning and Research. The boundaries of the areas are modified to reflect current land use through consultation with local lead agencies and selected on-site field inspection.

The State Mining and Geology Board, upon receipt of the classification information from the State Geologist, transmits the classification report to the appropriate lead agencies and makes it available to other interested parties. Upon receipt of the classification report, each lead agency must develop and adopt mineral resource management policies to be incorporated in its general plan within 12 months. These policies will:

1. Recognize the mineral classification information, including the classification maps, transmitted by the Board.
2. Emphasize the conservation and development of identified mineral deposits.

After receipt of mineral classification information from the State Geologist, the State Mining and Geology Board may designate specific geographic areas that contain mineral deposits of regional significance. Procedures for the designation** of lands containing significant mineral deposits are specified in Section II.2 of the State Mining and Geology Board's "Guidelines for Classification and Designation of Mineral Lands," which is included as Part II of California Division of Mines and Geology Special Publication 51, "California Surface Mining and Reclamation Policies and Procedures" (1983). This publication is available free from the Division of Mines and Geology.

The objective of the classification and designation process is to ensure, through appropriate lead agency policies and procedures, that raw material is available when needed and does not become inaccessible as a result of a lack of information during land-use decision-making actions.

The "Guidelines for Classification and Designation of Mineral Lands" were adopted by the State Mining and Geology Board on June 30, 1978. The purpose of the guidelines is to implement SMARA by providing direction to the State Geologist in carrying out mineral resource classification, and to establish procedures by which the Board may designate mineral-bearing lands of statewide or regional significance. Section I.1.a of the guidelines requires that the State Geologist classify specified areas into *Mineral Resource Zones* (MRZ) or *Scientific Resource Zones* (SZ) as defined in Section I.2 of the guidelines. Although California has a wide range of mineral commodities within its

---

*Classification is the process of identification of lands containing significant mineral deposits based solely on geologic factors, and without regard for present land use or land ownership.

**Designation is the formal recognition by the State Mining and Geology Board, after consultation with lead agencies and other interested parties, of areas containing mineral deposits of regional or statewide significance that should be considered for protection from land uses incompatible with mineral extraction. These deposits are deemed to be of prime importance in meeting the future needs of the region or the state.

borders, the State Mining and Geology Board recognizes that construction materials (sand, gravel, and crushed stone) are produced regionally, are used in every urban area of the state, and require special classification data. Section I.3 of the guidelines requires that classification reports that pertain to deposits of construction materials include the following information: (1) the location and estimated total quantity of construction material that is geologically available for mining; (2) limits of the market (production-consumption) region which the potential resource would serve; and (3) an estimate of the total quantity of material that will be needed to supply the requirements of the consumption region for the next 50 years. This information will assist the State Mining and Geology Board in determining the statewide or regional significance of these types of deposits.

The Mineral Land Classification of the Fresno Production-Consumption Region was initiated in 1984 by the State Geologist. Included in the project area are parts of Fresno and Madera counties. Portland cement concrete-grade aggregate resources of the area were selected for initial classification.

Each aggregate deposit was evaluated separately, and then considered as part of a single production-consumption region established on the basis of existing aggregate consumption patterns. The Fresno marketing region is served by two production districts with overlapping market regions, the San Joaquin River production district and the Kings River production district.

DETERMINATION OF THE FRESNO PRODUCTION-CONSUMPTION REGION

The city of Fresno was targeted by the Office of Planning and Research as an area experiencing significant urban expansion (OPR, 1975), and the State Mining and Geology Board scheduled it for an aggregate study by the Division of Mines and Geology. To determine the aerial limits of such a study, the Division must accommodate several factors. Ideally, both the production districts and 95 to 100 percent of the areas served by these districts are included in this study. Usually, this more than encircles the area identified by the OPR as that anticipated to be urbanized by 1990. This is the case in Fresno.

A study of sand and gravel production and consumption showed that all aggregate used in the urbanizing portions of Fresno County is produced from the San Joaquin and Kings rivers. (The only other active deposit within Fresno or Madera counties is adjacent to Los Gatos Creek, north of Coalinga. It serves an area within a 30-mile radius of the deposit site and so does not contribute aggregate to the city of Fresno.)

It was found that aggregate consumption, though centered on the city of Fresno, reaches outward, encircling an area within a 20-mile radius. Thus the production-consumption region was delineated (Plate 1), encompassing: (1) the entire metropolitan area of Fresno, Clovis and Sanger and surrounding areas anticipated by the OPR and/or the local lead agency to urbanize in the next 10 to 30 years; (2) outlying towns such as Madera, Selma, and Kingsburg; (3) rural areas not anticipated to urbanize but which are sparsely populated and consume aggregate from the San Joaquin and Kings rivers; and (4) the two resource areas. The eastern boundary of the area roughly matches the break in slope between the foothills and the Sierra Nevada Mountains and follows census tract boundaries to allow use of existing census and other population data for forecasting. Lead agencies with jurisdiction within the P-C region are shown on Table 1.

Transportation Rates

Because aggregate is a low-value, high bulk-weight commodity, a major part of the cost of aggregate to the consumer is for transportation. In fact, transport costs are one of the major constraints on the marketing area for a production district.

All aggregate marketed in the Fresno P-C Region is transported by truck. Minimum rates for independent aggregate truckers are set by the California Public Utilities Commission. Rates for the Central Valley are published in "Minimum Rate Tariff 7-A," sections 1 through 3 and supplement 24. Charges are calculated based on either an hourly rate or a distance rate. If the hourly rate is used, the carrier and debtor must enter into a written agreement prior to transport.

TABLE 1. Lead agencies (counties and incorporated city governments) located within the Fresno P-C Region.

AGENCIES	
CITIES	COUNTIES
Clovis	Fresno*+*
Kingsburg	Madera*+*
Madera	
Reedley	
Sanger	
Selma	
Fresno*+*	

* Agencies with active aggregate operations within their jurisdictional boundaries.
+ Agencies that have land classified MRZ-2 within their jurisdiction.
* Lead agencies containing sectors.

Table 2 contains the distance rates for selected increments and the hourly rates, as specified in Minimum Rate Tariff 7-A. Increasing the distance between a production area and a market area will increase the consumer's cost. Hauling aggregate from Coalinga to downtown Fresno (approximately 60 miles), for example, would result in a transport cost greater than the product cost. Total cost per delivered ton of PCC aggregate would increase from around $5.50 per ton to around $10 per ton.

TABLE 2. Minimum rates for transport of aggregate in the Fresno area.

DISTANCE RATES* (for selected increments)		HOURLY RATES**	
MILES	RATES ($/ton)	NO. OF AXLES PER UNIT OF EQUIPMENT	RATES ($)
11	1.55	2	37.00
21	2.49	3	41.50
31	3.39	4	43.00
41	4.27	5+	46.90
52	5.23		
63	6.08		
80	7.50		
85	7.89		

* includes November 1984 increase in surcharge; rates are higher for work done on holidays or weekends and if equipment other than a "... tractor with bottom dump doubles in train" are required at the destination.

** current as of July 9, 1984; rates are higher for work done on holidays and weekends.

ESTABLISHMENT OF MINERAL RESOURCE ZONES

The DMG has classified land in the Fresno P-C Region according to the presence or absence of significant PCC-grade aggregate deposits. The land classification is presented in the form of Mineral Resource Zones or MRZ s. Directions for the identification of Mineral Resource Zones are set forth in DMG's Special Publication 51 in the section entitled "Guidelines for Classification and Designation of Mineral Lands" (CDMG, 1983).

The guidelines for establishing the Mineral Resource Zones are as follows:

MRZ-1 Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence. This zone shall be applied where well-developed lines of reasoning, based upon economic-geologic principles and adequate data, demonstrate that the likelihood for occurrence of significant mineral deposits is nil or slight.

MRZ-2 Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists. This zone shall be applied to known mineral deposits or where well-developed lines of reasoning, based upon economic-geologic principles and adequate data, demonstrate that the likelihood for occurrence of significant mineral deposits is high.

MRZ-3 Areas containing mineral deposits, the significance of which cannot be evaluated from available data.

MRZ-4 Areas where available information is inadequate for assignment to any other mineral resource zone.

Mineral Resource Zones in the Fresno P-C Region are presented on a Mineral Resource Zone map (Plate 2) and on seven U.S. Geological Survey topographic maps (Plates 3-9) that cover in detail those areas classified MRZ-2. Figure 2 shows the quadrangle maps that cover the Fresno area.

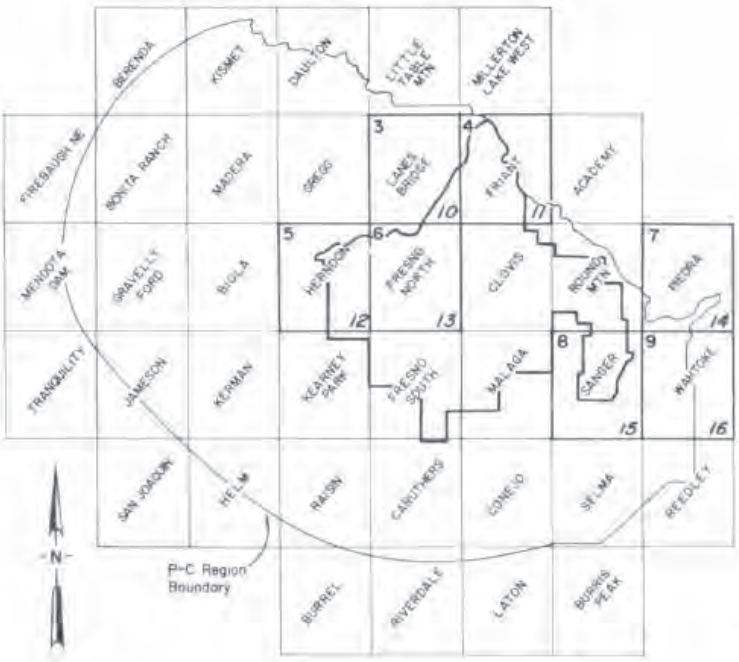


Figure 2. Index of U.S. Geological Survey quadrangles covering the Fresno P-C Region; the detailed Mineral Land Classification maps (Plates 3-9); Resource sector maps (Plates 10-16); and, the P-C region boundary. Urbanized and urbanizing portions of the P-C region are shown with the stippled pattern.

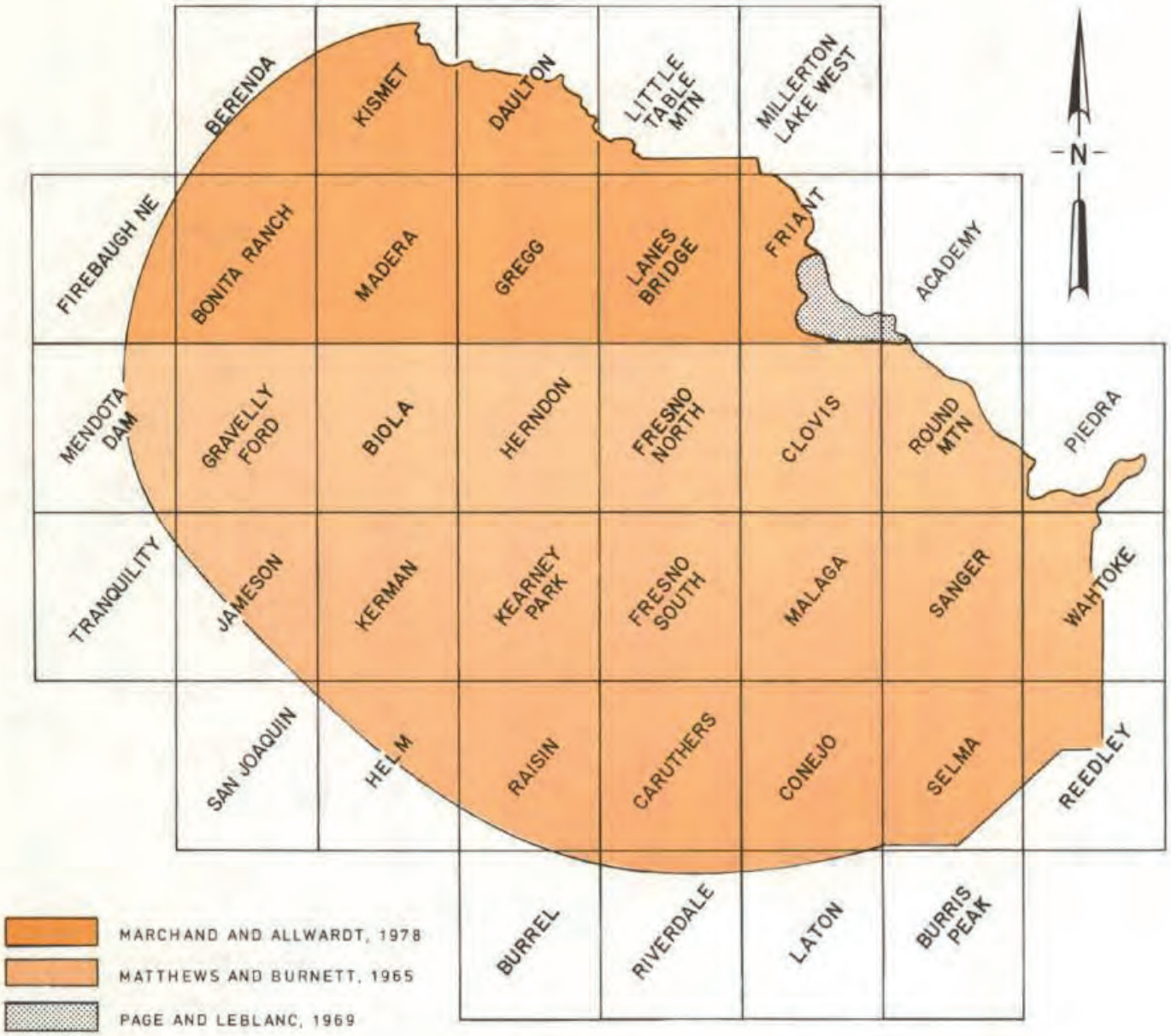


Figure 3. Quadrangle index indicating geologic maps used in classification of the Fresno P-C Region.

Mineral resource zones within the Fresno P-C Region were established on the basis of an aggregate appraisal that included the following tasks for assessing the quantity, quality, and extent of the aggregate deposits:

1. Examination and compilation of relevant geologic maps, aerial photos, geologic literature, aggregate industry data (some of which is proprietary) and aggregate engineering test data. The geologic maps used in classification of the Fresno P-C Region are indicated on Figure 3.
2. Interviews with aggregate operators, company geologists, and consultants.
3. Compilation and analysis of subsurface well-log data and drilling records.
4. Field investigation of active and depleted aggregate quarries.

Areas Classified MRZ-1

Areas classified MRZ-1 were judged on the basis of available data to have little likelihood of containing significant deposits of PCC-grade aggregate. Deposits that have excessive amounts of clay, silt, organic matter, absorptive rock, alkali-reactive rock, platy rock, or soft rock are unsuitable for use in PCC aggregate; areas containing such deposits are classified MRZ-1.

The areas in the Fresno P-C Region that are classified MRZ-1 (see Plate 2) are underlain by alluvial material judged to contain too much clay, silt, tuffaceous or pumiceous sediments. These include Quaternary basin deposits in the center of the San Joaquin Valley and the Friant Pumice Member of the Turlock Lake Formation which crops out on both sides of the San Joaquin River in the Friant, Lanes Bridge, and Millerton Lake West quadrangles (Marchand and Allwardt, 1978). The location of

the basin deposits was determined from a compilation of all three maps listed on Figure 3. Additionally, areas depleted of gravel and reclaimed as ponds or landfill are also classified as MRZ-1. Land falling in the latter category is present within the floodplains of both the San Joaquin and Kings rivers.

Areas Classified MRZ-2

Two areas within the Fresno P-C Region are classified as MRZ-2 (see Plate 2). These are areas for which data indicate that there is a high likelihood that significant deposits of PCC-grade aggregate exist.

SMARA guidelines set forth two requirements to be used to determine if land should be classified as MRZ-2:

1. The deposit must be composed of material that is suitable as a marketable commodity.
2. The deposit must meet threshold value. The projected value (gross selling price) of the deposit, based on the value of the first marketable product, must be at least $8,500,000 (which is equal to 5 million 1978 dollars).

Areas classified MRZ-2 contain aggregate resources that are either proven PCC-grade or highly likely to be of PCC-grade. Much of the aggregate in the MRZ-2 areas has not been identified as PCC-grade aggregate through formal engineering tests. Aggregate deposits in untested, unproven areas identified as MRZ-2 are believed to contain PCC-grade aggregate for either of the following reasons:

- The aggregate in unproven areas is similar in age and lithology, and was deposited under similar geologic conditions to that of the proven PCC-grade aggregate.
- The unproven deposit is a lateral extension of an alluvial formation from which PCC-grade aggregate has been produced.

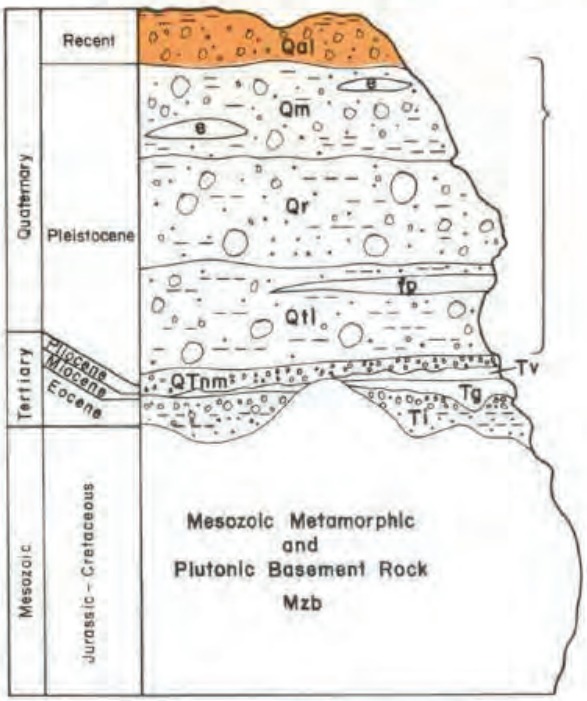
Areas classified MRZ-2 in the Fresno P-C Region are underlain by Holocene river channel and floodplain deposits. These include parts of the San Joaquin River floodplain from Herndon to Lost Lake, and the Kings River floodplain from Central Avenue to Avocado Lake.

Areas Classified MRZ-3

Areas classified MRZ-3 are those containing aggregate deposits, the significance of which cannot be evaluated from available data.

Sedimentary, metamorphic, and igneous rock types are often included in this category. Positive indications in the geologic literature, and a petrologic field examination that shows a rock unit to contain abundant, hard, durable material without excessive amounts of deleterious materials are necessary for a unit to be considered a suitable candidate for an MRZ-3 classification. Additional information regarding the quality of material in these areas could either upgrade the classification to MRZ-2 or downgrade the classification to MRZ-1. Formations and rock types located within the Fresno P-C Region that are classified MRZ-3 include (see Figure 4): the Ione Formation, an unnamed Tertiary basalt and gravel unit, the North Merced Gravels (Marchand and Allwardt, 1978), and metasedimentary and granodioritic rocks of the Sierra Nevada Mountains (Matthews and Burnett, 1965).

A large percentage of the areas classified MRZ-3 in the Fresno P-C Region are located in the San Joaquin Valley and are



Qal: Basin, river channel and alluvial deposits. Alluvial sand, silt and gravel deposited in terraces, fans and basins. Deposition is hypothesized to have occurred during, and was controlled by, glaciation in the Sierra Nevada Mountains (1) and (2).

Qm: Modesto Formation

e: eolian deposits

Qr: Riverbank Formation

Qtl: Turlock Lake Formation

fp: Friant Pumice Member

QTnm: North Merced pediment gravels

Tv: variously described as olivine basalt (3) or trachyandesite (4)

Tg: pre-volcanic gravels deposited by San Joaquin River

Tl: Ione Formation - strongly indurated and cemented sandstone and conglomerate with clay interbeds. Primarily fluvial

Mzb: Basement rocks within the Fresno P-C Region consist of pre-Cretaceous metasedimentary rocks, granodiorite and granite. (5)

GEOLOGIC UNITS THAT CONTAIN SAND AND GRAVEL SUITABLE FOR USE AS PCC-GRADE AGGREGATE (MRZ-2 AREAS)

1) Janda, 1965
2) Marchand, 1977
3) Marchand and Allwardt, 1978
4) Marchand and Allwardt, 1981
5) Matthews and Burnett, 1965

Figure 4. Generalized columnar section of the stratigraphy in the San Joaquin River area.

composed of Quaternary alluvial deposits. Though these sediments were deposited under similar conditions and derived from the same source rocks as those classified MRZ-2, they are older and have undergone too much weathering to consistently meet the specifications for MRZ-2. An exploration and testing program, however, might locate areas of PCC-grade material within these sediments. Stratigraphic relationships of these units are shown on Figure 4.

Portions of the San Joaquin and Kings rivers floodplains (see Plate 2) were classified MRZ-3, due to a variety of factors. In some cases, these areas have been previously mined and the remaining quantity of aggregate could not be shown to meet the minimum threshold value stipulated in SMARA. Other portions of the floodplains were classified MRZ-3 due to the size gradation of the deposits. The aggregate upstream of Avocado Lake (Kings River) is composed of oversized clasts. The aggregate downstream of Highway 99 (San Joaquin River) and in the vicinity of where the Kings River floodplain narrows (Plate 8), contains a significant amount of sand and fine sand. Exploration may allow these deposits to be utilized in Portland cement concrete.

Areas Classified MRZ-4

Areas classified MRZ-4 are those areas for which available information is lacking or incomplete for assignment into the other MRZ categories. No areas were classified MRZ-4 in the Fresno P-C Region.

EVALUATION OF PCC-GRADE AGGREGATE IN THE FRESNO P-C REGION

An assessment of aggregate resources in the Fresno P-C Region is presented in this section of the report. The assessment was conducted on the basis of a quantitative evaluation of available and suitable aggregate resources classified MRZ-2.

Concepts Used in Identifying Available Aggregate Resource Areas

The State Geologist is responsible for calculating aggregate resources for those areas classified MRZ-2. Recognizing that there are lands within MRZ-2 areas that have already been urbanized and that, therefore, have a limited opportunity for mineral resource conservation and extraction, the State Geologist has limited the calculation of aggregate resource tonnages to portions of MRZ-2 areas that have not been urbanized.

For purposes of classification, incompatible uses are urbanized lands containing high-cost improvements such as high-density residential developments, intensive industrial developments, commercial developments, and major public facilities (see Appendix, Interim Criteria for Sectorization of MRZ-2 Areas for Aggregate). Compatible uses are nonurbanized land comprised of very low density residential land (approximately one unit or less per ten acres), recreational land that does not have high-cost improvements, agricultural land, silvicultural land, grazing land, and open space.

For this report, the determination of which MRZ-2 land is nonurbanized was based upon conditions of the land at the time of the study (January 1984 through October 1984). The use of the land was determined by the authors after consultations with lead agencies, reference to aerial photographs and photo-revised topographic maps, and field reconnaissance.

SECTORS

Sectors are areas that have been classified MRZ-2 by the State Geologist, and that are deemed to be available for mining based upon criteria for availability provided by the State Mining and Geology Board.

A sector is an area within which the geometrical configuration of the deposit is sufficiently regular to permit reliable calculation of the tonnage of the mineral resource present. Thus, for example, sector boundaries would be established between that part of a natural deposit formed on a fan, and that part within the confines of an adjacent modern stream channel and its floodplain. Mineral land classification, which is done without regard for current land use, results in a delineation of the resource areas on maps, but this by itself does very little to put into perspective the resource base that is available to meet the future needs of a region. Sectors have been employed to focus the attention of land planners and local governments on just those areas that remain accessible for mineral extraction. The State Geologist calculates the available resources of each sector, and identifies the amount of remaining resources that have been permitted for mining. These latter resources are termed reserves. The resources present in other (non-sectorized) MRZ-2 resource areas are not calculated because they are regarded as unavailable.

The calculated reserves and resources of all the sectors of a region are compared with the State Geologist's forecast of the 50-year needs of a region for the mineral resources. The comparison of regional needs with the available reserves and resources provides the opportunity to focus attention on the mineral resource issues confronting the region; *viz.*, the need to plan carefully for the use of any lands containing mineral resources and the need to consider the permitting of additional mining operations in the region as currently mined deposits are depleted.

Each sector meets or exceeds the Board's threshold values for deposits of significant size, and each sector may be considered for designation as an area of regional or statewide significance by the State Mining and Geology Board pursuant to Section 2790 SMARA. Areas that have not been sectorized by the State Geologist are not considered for designation by the Board.

Although the classification by the State Geologist and the designation by the Board are actions explicitly provided for by SMARA, and although the results of such actions yield reports

that must be acted upon by affected local governments, the sectorization and sector maps do not in and of themselves carry with them specific obligations imposed on local governments by SMARA.

The sector maps and the resource base calculations, however, contain the essential facts that are needed to focus the attention of planners on the mineral availability problems and the alternative solutions to meet the mineral resource needs of the region. Without the sector maps and the accompanying calculations, the primary objectives of SMARA could not be achieved.

Because the Board's criteria for sectorization focus on the apparent suitability of the land for mining and do not take into account commitments that may have been made to restrict the accessibility of some of the sectors for mining, it is possible that the available resource base as calculated by the State Geologist may be overestimated and the problems confronting local government may be understated. Considering these possibilities, it becomes important for local governments to carefully review the sectors and the associated estimates of resources to ensure that previously unrevealed problems are not overlooked and that planning decisions are made using a correct perspective on available resources.

RESOURCE SECTORS WITHIN PARKS

Dedicated parklands are recognized as having a special status. Resource sectors within parks have, therefore, been treated as a special class of sectors, and the quantifications of the resources in them are presented separately in Table 5.

Calculation of Available Resources

RESERVES AND RESOURCES

In this report, *reserves* are estimates of tonnages of aggregate that have been determined to be acceptable for commercial use that exist within properties owned or leased by aggregate producing companies, and for which permits have been granted to allow mining and processing of the material. *Resources* include *reserves* as well as all similar potentially usable aggregate materials that may be mined in the future, but for which no permit allowing mining has been granted.

FACTORS CONSIDERED IN CALCULATIONS

The resource estimates given here are limited to those PCC-grade aggregate resources present in resource sectors, which are, as explained in the previous section, the nonurbanized portions of the areas classified MRZ-2. The resource sectors defined in this study are shown on the sector maps (Plates 10-16) that accompany this report.

The sectors are subdivided into numbered subsectors to recognize the location of existing freeways, canals, bridges, dams, major powerlines, and major pipelines. These criteria allowed for the calculation of more realistic resource tonnages. Subsectors S-1 through S-20 identify resource areas in the San Joaquin River; Subsectors K-1 through K-32 delineate resource areas in the Kings River.

The following factors were used to determine the areal extent and tonnage of PCC-grade aggregate resources within the sectors:

1. Sector resource tonnage estimates for the Kings River were based on measurements taken from base maps that have a scale of 1:24,000. Estimates for the San Joaquin River were based on aerial photogaphs that have a scale of 1:9,600.
2. Even in proven PCC-grade aggregate deposits, a small percentage of the aggregate cannot be used in concrete and is referred to in this study as "waste." Waste includes pit-run and production waste, both of which may be utilized in non-PCC uses, primarily as fill. Known waste percentages were extrapolated to deposits in untested sector areas from proven, nearby PCC-grade deposits.
3. Thicknesses of PCC-grade deposits were determined through use of water-well log data and information provided by persons who have knowledge concerning aggregate deposits and exploration in this region.
4. Typical setbacks from utility and rail lines, urban developments and roads, as stipulated in lead agency mining ordinances, were used in determining the areal limits of sectors that border areas not available for mining.

Resource Sector Descriptions

The total area of the resource sectors in the Fresno P-C Region is 31 square miles, of which almost 3½ square miles are currently permitted for mining. As previously noted, sectors are delineated only within areas classified MRZ-2 and that are available for mining. The estimated total of PCC-grade aggregate resources in these sectors is 2.17 billion tons (29 million tons of which is in dedicated parklands). As of November 1985, 119.3 million tons of these resources were permitted for mining, and therefore qualified as reserves. Annual depletion of reserves for 1985 has not been subtracted from this figure.

The resource sectors are described below:

SAN JOAQUIN RIVER AREA — SECTOR S

The San Joaquin River has provided PCC-grade aggregate since the early 1920s. The earliest mining occurred in the upstream portion of the river, near the town of Friant. Lost Lake, just west of Friant, was formed by the excavation of aggregate used in the construction of Friant Dam (completed in 1934). PCC-grade aggregate was also mined as far downstream as one mile west of Highway 99. Mining from this area ceased in the mid-1960s. Both areas still contain some high-quality aggregate. However, it could not be shown that the remaining aggregate resources meet the minimum threshold value established by the Board; thus, they are classified MRZ-3. The remainder of the downstream portion of the floodplain within the P-C region is also classified MRZ-3. This portion is composed predominantly of sand and could not, with the available information, be proven to be coarse enough for PCC-grade aggregate. However, this area undoubtedly contains a large volume of sand.

Six companies process aggregate from the San Joaquin River for use in Portland cement concrete, asphaltic concrete, road base, plaster sand, fill, etc. River Rock Products has two sites, one near Herndon (Sectors S-2a and S-2b, Plates 12 and 13) and another on Old Friant Road (Sectors S-10a and S-10b, Plate 10). Stewart and Nuss has a large part of the floodplain permitted between Scout Island and Highway 41 (Sectors S-5a, S-5b, S-5c, and S-6, Plate 13) and has been active at this

site since 1963. However, the company may not be allowed by the landowner to completely mine that part of its lease which lies south of the river and west of the highway. River Rock Products is active only in Fresno County, whereas Stewart and Nuss has permits in both Fresno and Madera counties.

San Joaquin Rock and Sand, the next producer upstream, is active only in Madera County (Sectors S-7a and S-7b, Plates 10 and 13). This company's lease and permitted area is located just west of Highway 41 on the northern side of the river. The company has been active here for a little over two years, having obtained the plant from a prior operator. Brueckner Sand and Gravel (Sector S-8, Plate 10) has been working on a 29-acre area adjacent to Rice Road since 1974.

Sequoia Rock Company's lease abuts the northern line of River Rock Products on Old Friant Road (Sectors S-11a and S-11b, Plate 10). The company also controls Cobbs Island and "Island No. 1" in Madera County (Sector S-14, Plate 10). North from Sequoia Rock along the Friant Expressway is Lonestar Industries' rock plant (Sector S-16, Plate 11). The plant was built prior to 1960, and most of the land surrounding it has been mined. Lonestar is currently mining from a new permit in subsector S-19 (Plate 11). The landowners of the northern half of subsector S-19 (Plate 11) have also obtained a conditional use permit, but nearby homeowners have a lawsuit pending against the permit.

No unusual specialty products are sold from the San Joaquin River deposits. However, secondary gold recovery is occurring at most aggregate plants.

None of the individual rock clasts contained in either the sand or gravel fractions of the deposits classified MRZ-2 contain minerals deleterious to the production of PCC-grade aggregate.

Between 40 and 60 percent of the rock clasts within the San Joaquin River between Herndon and Friant are composed of medium- to coarse-grained granitic rock types: granite, granodiorite and quartz monzonite. This includes rocks with these compositions but with a gneissoid texture or with the addition of secondary chlorite and epidote. Clasts of diorite and gabbro were rarely observed. Metamorphic rock types, such as amphibolite, schist, phyllite and slate, compose 5 to 10 percent of the clasts. Another 10 percent consists of very hard, well-lithified conglomerate derived from metasedimentary units in the Sierra Nevada Mountains or from outcrops of the Ione Formation in Little Table Mountain. Volcanic and metavolcanic clasts compose another 10 to 20 percent. These consist mostly of fine-grained to porphyritic basalt or andesite, scoriaceous basalt, or welded light-colored tuffs. Quartzite clasts and various other rock types compose the remainder of the clasts. The sand fraction is composed of quartz, biotite, and rock fragments with occasional grains of epidote and pumice. The latter is probably derived from reworking of the Friant Pumice Member of the Turlock Lake Formation which crops out in the river bluffs north of Copper Avenue. All the sediments are subrounded to rounded and oblong to spherical in shape.

Aggregate from the San Joaquin River is mined from a floodplain which developed throughout late Pleistocene to Recent time, in fact, probably until completion of the Friant Dam. The characteristics of the deposit seem to vary along the length and width of the floodplain. For instance, on Ledger Island (Plate 4 of 11) bedrock of the Sierra Nevada batholith comes within 15 feet of the surface. A northwest trending fault mapped through the older alluvium, concealed by the Recent deposits (Marchand and Allwardt, 1978) north of Ledger Island, may be the reason for this shallow occurrence of the bedrock in the river channel.

The production zone consists of a gravel-rich layer which, where present, varies in thickness from 15 to 59 feet. Below the gravel-rich layer is a clay layer which varies in thickness from 1 foot to more than 20 feet thick (the bottom of the clay layer has not been found when it is this thick). On a portion of the Stewart and Nuss lease, the gravel layer was at one time totally excavated, leaving the top of the clay daylighted. The latter appeared to be terraced in three distinct levels (personal communication with Stewart and Nuss personnel). The cause of the terracing is unknown. This clay is described by the operators as being hard, and they have mostly found it infeasible to excavate through it to any underlying gravels. However, there are a few exceptions to the occurrence of this clay layer. Excavation for aggregate at what is now Lost Lake is said to have extended 60 to 70 feet below the ground surface. Obviously the clay layer either did not occur here or was of such minimal thickness and hardness that it was ignored. Similarly, the clay layer is said to be a foot or less in the Brueckner pit, allowing mining to occur to a greater depth.

As would be expected, the floodplain deposits generally become finer as one moves downstream. The maximum clast size near Friant is 10 inches, whereas downstream near Herndon, it is 4 inches. However, not far downstream from Friant, on land leased to Lonestar Industries, there are areas where gravel does not exist and the fine size of the sand is believed to make it infeasible for the deposit to be mined (personal communication with Lonestar employees). This area is classified MRZ-3 (Plate 4). It is unknown if there are other areas with this anomalous size-gradation.

Most of the operators use 1.5 tons per cubic yard as a rule of thumb for in-place density. However, Stewart and Nuss cites 1.8 tons per cubic yard for the density of their reserves. It is not known if this company has better data than the other operators or if the deposit really is denser in their area. The higher density value was used for subsectors containing their leases (see Table 3).

The other factors used in calculating resource tonnages also vary, due to the variability of the San Joaquin River deposit. The estimates of percent waste, production-zone and overburden thickness and, as previously noted, in-place density were based on field observations and information supplied by active producers, and occasionally on water-well logs. This information was extrapolated to sectors without active or historic mining from adjacent and geologically similar sectors where data was available.

KINGS RIVER AREA — SECTOR K

The Kings River is geomorphically similar to the San Joaquin River except that it has a broader floodplain and a thicker section of Recent sand and gravel. Unlike the San Joaquin River, a persistent underlying clay layer has not been reported by the operators nor described in water-well logs.

There are only two operators currently producing aggregate from the Kings River. Central Valley Ready Mix is located adjacent to Annadale Road, with the aggregate plant south of the road and their current mining site north of the road (Sectors K-18

and K-11b, Plate 15). The company began operating in 1945. Sanger Rock and Sand began in the late 1940s at their site south of Highway 180 and east of Trimmer Springs Road (Sectors K-10a and K-10b, Plate 16). Both companies process aggregate for use in PCC and asphaltic concrete. Industrial Asphalt used to mine aggregate from a site along the river just north of Goodfellow Avenue. However, the company abandoned this site several years ago.

Aggregate was excavated from the area that is now Avocado Lake, southwest of Piedra, for use in Pine Flat Dam which was completed in 1954. Just upstream of Avocado Lake the floodplain of the Kings River consists mainly of boulders. These large-sized clasts are difficult to work with and hard on mining and processing equipment. Therefore, this area was classified MRZ-3. Conversely, where the river turns southward and the floodplain narrows (Plate 9), water-well logs indicate that gravel no longer occurs in the subsurface. Due to the lack of gravel, these more distal deposits are classified MRZ-3, but sand of PCC-grade might be found here with an exploration program. Maximum clast size within the area classified MRZ-2 varies from 12 inches near Avocado Lake to 5 inches at the intersection of Trimmer Springs Road and Belmont Road to 2 inches near the southern part of the MRZ-2 area. Clasts are rounded to well-rounded and oblong to spherical in shape.

Due to the smaller number of producers on the Kings River, less is known about the variability of production-zone and overburden thickness than on the San Joaquin River. The factors used in resource calculations were obtained from the two active producers and from selected logs of water wells. Waste was assumed to be 15 percent, and in-place density 1.5 tons per cubic yard in all subsectors. The production-zone thickness, which varies between 25 and 80 feet as shown in Table 4, was determined from water-well logs.

As with the rock clasts in the San Joaquin River, no minerals deleterious to the production of PCC-grade aggregate were found in the Kings River deposits.

Granitic rock types compose the majority of clast types observed at localities along the Kings River. Plutonic rocks more intermediate in composition, such as diorite, constitute a greater portion of the deposit than on the San Joaquin River. Ultramafic rock types, such as peridotite and serpentine, were also found. The majority of the remainder of the deposit appears to be composed of quartzite, fine-grained basaltic volcanic rocks, and fine-grained metavolcanic rocks of various compositions.

Both the San Joaquin and the Kings rivers are dammed just upstream from the P-C region. This means that neither is re-

TABLE 3. Aggregate resources in the San Joaquin River, Fresno and Madera counties.

SECTOR	NONPERMITTED RESOURCES (tons)	PERMITTED RESOURCES (reserves) (tons)	TOTAL ACRES IN SECTOR	PRODUCTION-ZONE THICKNESS (feet)	WASTE (%)
S-1	14,400,000		179	35	2
S-2a	0	**	27	**	**
S-2b	6,500,000	**	213	30	2
S-3	9,600,000		168	25	3
S-4	6,300,000		111	25	3
• S-5a	6,000,000		225	25	3
• S-5b	0	**	31	**	**
• S-5c	0	**	38	**	**
• S-6	0	**	218	**	**
S-7a	3,500,000	**	159	16	4
S-7b	0	**	23	**	**
• S-8	9,400,000	**	209	20	3
S-9	4,400,000		122	16	4
S-10a	0	**	30	**	**
S-10b	7,400,000	**	355	25	2
S-11a	0	**	12	**	**
S-11b	31,700,000	**	824	25	5
S-12	2,300,000		43	25	2
S-13	2,300,000		42	25	2
S-14	0	**	225	**	**
S-15	16,400,000		360	20	3
S-16	0	**	51	**	**
S-17	1,300,000		39	15	5
S-18a	500,000		23	10	5
S-18b	500,000		25	10	5
S-19	0	**	532	**	**
* S-20				30	5
TOTAL	122,500,000	***	4,284		

* Parklands — see Table 5
• In-place density estimated to be 1.8 tons per cubic yard; resources in all other sub-sectors calculated using a density of 1.5 tons per cubic yard
** Proprietary
*** See Table 6 for combined reserves total for the San Joaquin and Kings rivers

ceiving bed load recharge and the deposits are not being replenished. Another important point is that once a pit is abandoned, and allowed to refill with water, it is not economically feasible (today) to re-open the pit and resume the mining of any remaining gravel. This fact should be considered before closing down operations at one site and permitting another.

PARKLANDS

In the Fresno P-C Region two parks have been sectorized. China Creek Park (Subsector K-31) constitutes 120 acres within the Kings River floodplain. It is currently unimproved land which serves as a wildlife sanctuary, though improvements are planned. Subsector S-20 consists of a portion of the Fresno County Park at Lost Lake. This area contains river and lake frontage, picnic tables, lawn and shade trees, and restrooms. Resource volumes calculated within these two subsectors are given in Table 5.

Other MRZ-2 Areas

Specific sites of current, on-going production of aggregate for use in other applications than PCC may also be classified MRZ-2. The production level for these sites must be significant enough to be reported to the U.S. Bureau of Mines. No such sites have been found in the Fresno P-C Region.

TABLE 4. Aggregate resources in the Kings River, Fresno County (Percentage of waste is assumed to be 15 and density 1.5 tons per cubic yard in all sub-sectors).

SECTOR	NONPERMITTED RESOURCES (tons)	PERMITTED RESOURCES (reserves) (tons)	TOTAL ACRES IN SECTOR	PRODUCTION-ZONE THICKNESS (feet)
K-1	27,200,000		237	60
K-2	15,100,000		129	60
K-3	33,000,000		287	60
K-4	15,000,000		137	60
K-5	61,600,000		462	70
K-6	23,200,000		198	60
K-7	3,500,000		27	80
K-8	29,600,000		192	80
K-9	15,700,000		105	80
K-10a	82,400,000	**	516	80
K-10b	19,200,000	**	118	80
K-11a	11,200,000		87	80
K-11b	13,700,000	**	106	80
K-12	195,500,000		1,190	80
K-13	48,900,000		410	60
K-14	27,900,000		540	30
K-15	38,600,000		637	30
K-16a	128,100,000		1,076	60
K-16b	5,800,000		49	60
K-17a	19,200,000		165	60
K-17b	65,600,000		562	60
K-17c	15,900,000		136	60
K-18	86,500,000	**	554	80
K-19	237,100,000		1,499	80
K-20	179,800,000		1,130	80
K-21	42,100,000		422	50
K-22	46,100,000		570	40
K-23	21,400,000		271	40
K-24a	8,300,000		84	50
K-24b	51,100,000		516	50
K-25	49,000,000		399	60
K-26	188,300,000		1,349	70
K-27	11,900,000		237	25
K-28	51,200,000		457	55
K-29	16,900,000		280	30
K-30	8,200,000		138	30
*K-31				80
K-32	5,300,000		49	60
TOTAL	1,899,100,000	***	15,321	

*Park lands — see Table 5
**Proprietary
***See Table 6 for combined reserves total for the San Joaquin and Kings rivers.

TABLE 5. Nonpermitted resources in parklands.

S-20 — Lost Lake County Park (Fresno County)	
Tons = 10,300,000	Acres = 158
assumptions: 1) suitable aggregate zone = 30 feet; 2) waste = 5%; 3) density = 1.5 tons/cubic yard)	
K-31 — China Creek Park (Fresno County)	
Tons = 18,300,000	Acres = 120
assumptions: 1) suitable aggregate zone = 80 feet; 2) waste = 15%; 3) density = 1.5 tons/cubic yard)	
TOTAL TONS = 28,600,000	
TOTAL ACRES = 278	

TABLE 6. Summary of PCC-Grade aggregate resources compared with the estimated 50-year demand (all aggregate types): Fresno P-C Region.

Nonpermitted Resources	
San Joaquin River	
Fresno County	70,300,000
Madera County	52,200,000
Kings River	1,899,100,000 tons
Permitted Resources (Reserves)	
San Joaquin and Kings rivers	119,300,000 tons
TOTAL	2,140,900,000 tons
Resources (nonpermitted) in Parklands (Sectors S-20 and K-31)	28,600,000 tons
GRAND TOTAL	2,169,500,000 tons
50-year demand	268,400,000 tons

ESTIMATED 50-YEAR CONSUMPTION OF AGGREGATE

Basis of 50-Year Forecasts

The State Mining and Geology Board, as specified in CDMG Special Publication 51 in the section entitled "Guidelines for Classification and Designation of Mineral Lands," (CDMG, 1983) requires that mineral land classification reports for regions containing construction materials classified as MRZ-2 include "An estimate of the total quantity of each such construction material that will be needed to supply the requirements of both the county and the marketing region in which it occurs for the next 50 years. The marketing region is defined as the area within which such material is usually mined and marketed. The amount of each construction material mineral resource needed for the next 50 years shall be projected using past consumption rates adjusted for anticipated changes in market conditions and mining technology." In the "Guidelines" the Board also specifies that these estimates be reviewed periodically (every 10 years or less).

Fifty-year forecasts of PCC-grade aggregate needs in the Fresno P-C Region were made on the basis of reported aggregate production records during the years 1960-1983. For the purpose of this study, P-C region boundaries were defined to ensure that nearly all PCC-grade aggregate produced in the Fresno area will be consumed in the study area,[1] and that imports of PCC-aggregate from outside the study area are insignificant.

[1]Nearly 95 percent of all aggregate produced in the Fresno P-C Region is consumed within the P-C region boundaries.

Correlations Between Aggregate Production and Consumption

Past studies of aggregate marketing regions in California have shown that there is a strong correlation between the amount of aggregate produced and the population in a given aggregate production-consumption region. On this basis, aggregate production and population figures in the Fresno P-C Region were correlated for the years 1960 through 1983. Correlations between the annual aggregate production records and the population statistics were used to obtain per capita consumption rates of aggregate in the study area. The historical aggregate production data in the study area was obtained from mining records of the U.S. Department of the Interior, Bureau of Mines (1960 to 1983). The historical population data for the Fresno area were taken from the 1980 census data, obtained from Fresno and Madera counties.

The average per capita consumption rate in the Fresno P-C Region is 7 tons of aggregate per year over the period from 1960 to 1983 (see Table 7 and Figure 5). Due to the erratic variations in aggregate production from year to year (see Figure 6), a three-year moving average of the annual aggregate production was used in conjunction with population statistics (for purposes of curve smoothing) to compute the per capita consumption rates for the P-C region. The moderately high consumption rates in the Fresno area are characteristic of aggregate marketing regions in which the overall population density is relatively low and the rate of urban development is high. A moderately high consumption rate probably will be maintained within the Fresno

P-C Region until the onset of urban maturity, then it will decrease and eventually drop to a general maintenance level. Urban maturity is the point in the development of an area at which construction materials are used primarily to maintain what has already been developed, rather than to provide for further development.

Projected Population and Per Capita Consumption through the Year 2034

A simple analysis of the historical aggregate production and population statistics was conducted to forecast basic trends in the per capita consumption rate of aggregate within the Fresno area through the year 2034. The total aggregate needs of the study area through the year 2034 were calculated on the basis of two factors: (1) a projected average annual per capita consumption rate of 7 tons (the average per capita consumption rate for the years 1960 to 1983); and (2) the projected population of the region for future years through the year 2034. Population projections for the years 1980 to 2020 (Figure 7) were obtained from the California Department of Finance (1983). This data was extrapolated by DMG for the study area on a straight line basis through the year 2034 to provide the 50-year population projection as specified under the SMARA guidelines. The results of these calculations (Table 8) reveal that an estimated 268 million tons of aggregate will be needed to satisfy the projected future demand for this construction material in the Fresno P-C Region through the year 2034. Of this total, 134 million tons must be of PCC grade.

Factors Affecting Per Capita Consumption Rates

The wide variations from year to year in the per capita consumption rate (Table 7) (4.97 to 8.44 tons per year) are probably reflections of changes in urban growth rates with time, and the construction of major facilities (for example, freeways). In part, these variations also result from incomplete and inaccurate production records supplied to the U.S. Bureau of Mines. Certainly the economic climate is a powerful variable that influences the annual per capita consumption rates for aggregate. Very high interest rates, for example, such as existed in California during the 1980 to 1982 period, tend to lower the amount of new construction in an area and consequently lower the demand for aggregate.

At some point in the future, the average annual per capita consumption rate of 7 tons for the Fresno P-C Region will probably decrease with the onset of urban maturity and then stabilize at a lower rate. However, should unforeseen events occur, such as massive urban renewal, disaster reconstruction, or a major recession, the per capita consumption rate could change radically.

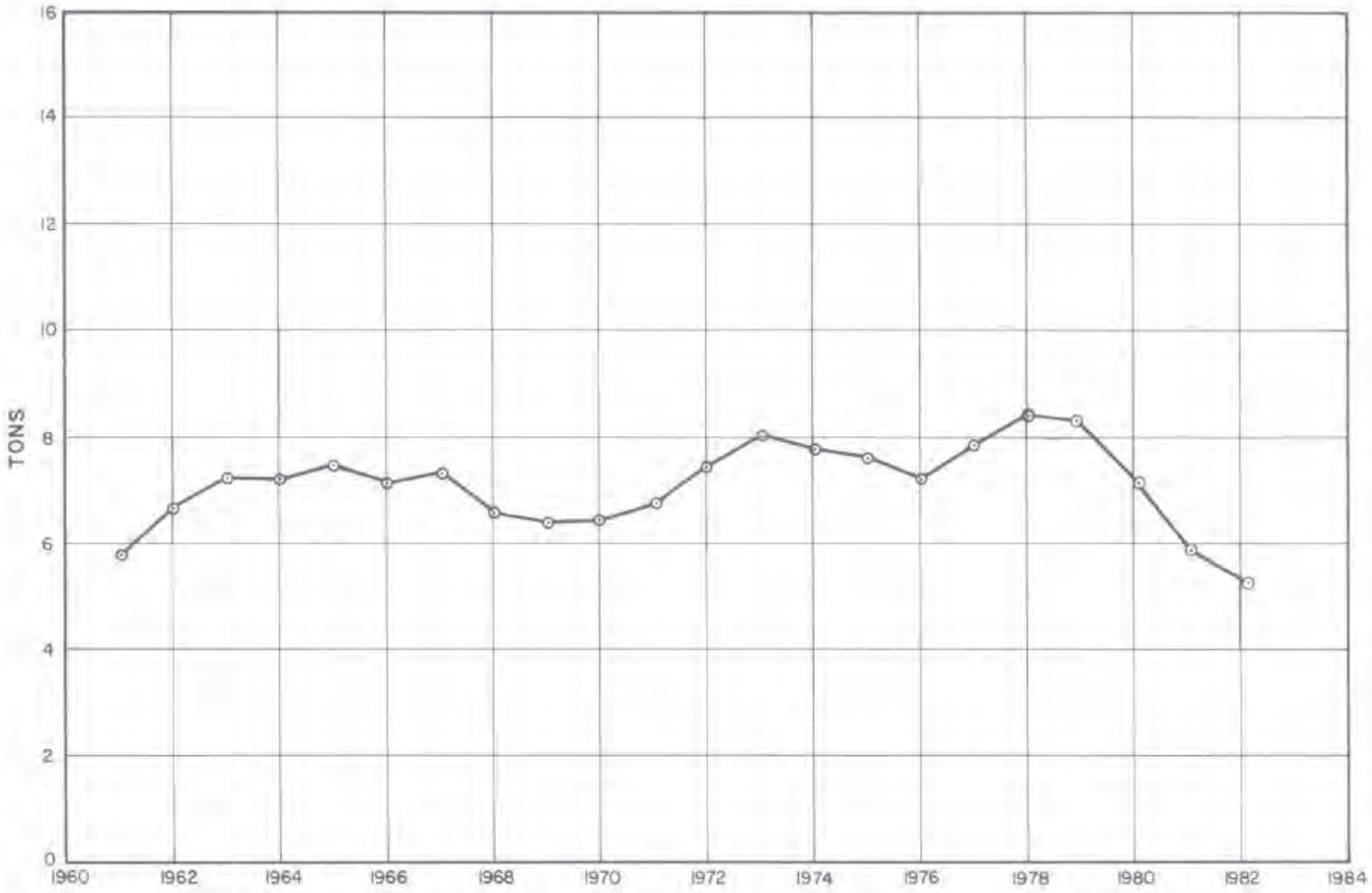


Figure 5. Annual per capita consumption of aggregate in the Fresno P-C Region. Based on population and 3 year averages of production, as shown on Figure 6.

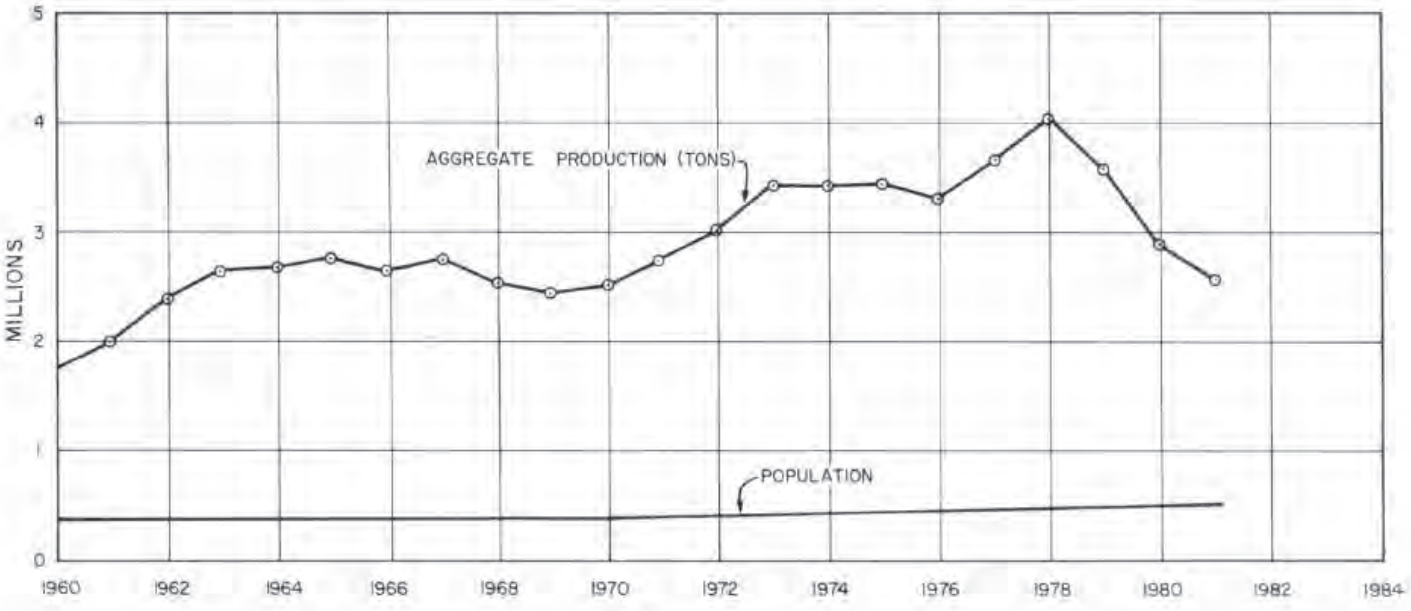


Figure 6. Fresno P-C Region: Population and aggregate production records for years 1960-83. Annual aggregate production has been smoothed through use of a 3-year rolling average.

TABLE 7 — Population, aggregate consumption and per capita consumption in the Fresno P-C Region during the period 1960-1983.

YEAR	POPULATION	AGGREGATE CONSUMPTION (rounded to nearest 1,000 tons)	3-YEAR AVERAGE OF CONSUMPTION (tons)	ANNUAL PER CAPITA CONSUMPTION (tons)
1960	351,400	1,774,000		
1961	355,600	2,017,000	2,051,000	5.77
1962	359,900	2,362,000	2,334,000	6.60
1963	364,100	2,623,000	2,529,000	6.95
1964	368,400	2,602,000	2,527,000	6.86
1965	372,600	2,356,000	2,720,000	7.30
1966	376,900	3,202,000	2,656,000	7.05
1967	381,100	2,409,000	2,777,000	7.29
1968	385,400	2,720,000	2,536,000	6.58
1969	389,600	2,480,000	2,473,000	6.35
1970	393,900	2,218,000	2,533,000	6.43
1971	404,100	2,900,000	2,718,000	6.73
1972	414,200	3,036,000	3,092,000	7.47
1973	424,400	3,339,000	3,405,000	8.02
1974	434,500	3,840,000	3,403,000	7.83
1975	444,700	3,031,000	3,413,000	7.68
1976	454,900	3,369,000	3,306,000	7.27
1977	465,000	3,517,000	3,679,000	7.91
1978	475,200	4,150,000	4,012,000	8.44
1979	485,300	4,368,000	4,077,000	8.40
1980	495,500	3,714,000	3,573,000	7.21
1981	505,600	2,636,000	2,902,000	5.74
1982	515,800	2,356,000	2,563,000	4.97
1983	526,000	2,695,000		

Average annual per capita consumption for 1961-1982 is 7.04 tons per person per year.
Calculations may not replicate precisely due to rounding.

Comparison of the 50-Year Aggregate Demand with Current Reserves

The total PCC-grade aggregate reserves for the Fresno P-C Region were estimated to be 119.3 million tons (this figure does not reflect reserve depletion by any producers since December 1984). At the average rate of past aggregate consumption in the region (7 tons per person annually), these reserves are theoretically sufficient to satisfy the total aggregate demands of the P-C region to mid-2010.

According to U.S. Bureau of Mines aggregate production statistics for the years 1960 to 1983 and information from aggregate operators in the P-C region, roughly 50 percent of the total aggregate consumed in the study region has been PCC-grade. If the region continues to require the same percentage of PCC-grade aggregate, the total amount of PCC-grade aggregate that would be needed to supply the Fresno area through the year 2034 is estimated to be 134 million tons. Thus, in addition to the current reserves, 14.7 million tons of PCC-grade aggregate will be needed to supply the projected needs for this commodity in the Fresno P-C Region for the next 50 years.

TABLE 8. Projected aggregate consumption through the year 2034 for the Fresno P-C Region. Five-year per capita consumption = 35.2 tons/person (One-year per capita consumption = 7.0 tons/person).

YEARS	*AVERAGE POPULATION (millions)	AGGREGATE CONSUMPTION ALL AGGREGATE (million tons)	AGGREGATE** CONSUMPTION PCC AGGREGATE (million tons)
1985-1989	.576	20.3	10.2
1990-1994	.625	22.0	11.0
1995-1999	.670	23.6	11.8
2000-2004	.710	25.0	12.5
2005-2009	.747	26.3	13.2
2010-2014	.785	27.6	13.8
2015-2019	.822	28.9	14.4
2020-2024	.860	30.3	15.1
2025-2029	.898	31.6	15.8
2030-2034	.931	32.8	16.4
TOTAL		268.4	134.2

*Population projections for the years 1985-2020 were obtained from the California Department of Finance Report 83-P-3. Population projections for the years 2021-2034 were linearly projected from data in Report 83-P-3.

**This estimate is based on the fact that approximately 50 percent of the aggregate consumed from 1960 to 1980 was PCC quality.

ALTERNATIVE SOURCES OF AGGREGATE

Potential sources of aggregate, in addition to the deposits classified MRZ-2, exist within the Fresno P-C Region. These potential sources lie within areas that are classified MRZ-3 and include areas underlain by Quaternary alluvial deposits, Tertiary sedimentary and volcanic rocks, and pre-Cretaceous intrusive and metamorphic basement rocks.

Potential Alluvial PCC-Grade Aggregate

Alluvium classified MRZ-3 includes Quaternary stream channels and alluvial fans built by the San Joaquin and Kings rivers prior to Recent time. The modern rivers have dissected these deposits — forming the bluffs along both channels — while developing their current grade and course. These deposits were probably built over a period of one million years or more, in response to the glaciation of the Sierra Nevada Mountains (Marchand, 1976). The source rocks and the energy of the depositional environment may have varied as the drainage basin developed and evolved. Such changes will cause variability in the hardness, lithic and mineralogic composition, grain size and shape, and sorting of the alluvium. Furthermore, the difference in composition and age will cause variances in the degree of weathering of the alluvium. Thus, though sand and gravel exist within these units, their suitability as concrete aggregate is questionable and variable. None of this material is known to have been used for PCC in the Fresno area. However, beds in the Modesto and Riverbank formations have been utilized for PCC aggregate in Sacramento. As is obvious from Plate 2, a tremendous volume of material is included in these older deposits. Much of this volume consists of sand that may be coarse enough for PCC-grade aggregate. Proper testing and beneficiating may prove that suitable aggregate is available from these formations in the Fresno area.

Part of the Fresno P-C Region classified MRZ-3 is underlain by an unnamed Tertiary gravel unit which marks the course of the San Joaquin River in Miocene time, about 5 to 23 million years ago (Marchand, 1976). It crops out intermittently along the eastern side of the P-C region from approximately one mile north of Dry Creek south to Copper Avenue (on the Friant quadrangle), and south of China Garden (on the Daulton quadrangle).

The gravel also crops out on the west side of Little Table Mountain and east of Highway 41, between Road 204 and Avenue 12. This might provide a suitable source of sand and gravel or sand and crushed rock, but because of its age, its durability may be low. It is in part tuffaceous, so careful site-specific evaluation is required.

A second late Tertiary unit, mapped as the North Merced Gravel (Marchand and Allwardt, 1978), may also provide suitable aggregate. It is a Pliocene or Pleistocene deposit of lag gravels on an erosion surface and is found on the northern and western slopes of Little Table Mountain. Thickness of the deposit is unknown, as is rock quality. Neither this nor the previously discussed Tertiary gravel have been historically mined, so data to evaluate their suitability as PCC-grade aggregate is lacking.

Potential Crushed Rock Aggregate

It is important to note that crushed rock may be significant in this area for the future. Sand sources are abundant within and adjacent to the Fresno P-C Region in both active streams and in the bluffs and fans. However, the coarse aggregate fraction is in much shorter supply. As the gravel supplies are depleted, the more abundant sand could be mixed with crushed rock. Basement rocks of the Sierra Nevada crop out along the eastern side of the P-C region, adjacent to the Friant Kern and Madera canals. Within the P-C region the basement rock consists of granodiorite and metasedimentary rocks (Matthews and Burnett, 1965) which may be a suitable source for crushed rock aggregate. Metavolcanics, meta-gabbro, granite, tonalite, and diorite can be found within 10 miles of the P-C region, and could represent additional exploration targets for quarry sites.

Another source of crushed rock is the oversized cobbles and boulders of the Kings River. This material is concentrated upstream from a point below Avocado Lake. It is a potentially important alternate source of PCC-grade aggregate because blasting will not be required to diminish the rock.

Potential Sources of PCC-Grade Aggregate Outside the P-C Region

PCC-grade aggregate could be obtained for use in the Fresno P-C Region from active resource areas outside the P-C region. The closest of these resource areas, which are 50 miles from downtown Fresno, are shown on Table 9. The additional transport costs (see Table 2) incurred by bringing in aggregate from these other sites would substantially increase the price of construction materials for the Fresno consumer. Utilization of these deposits by the Fresno market could cause supply problems in the urbanizing areas they already serve.

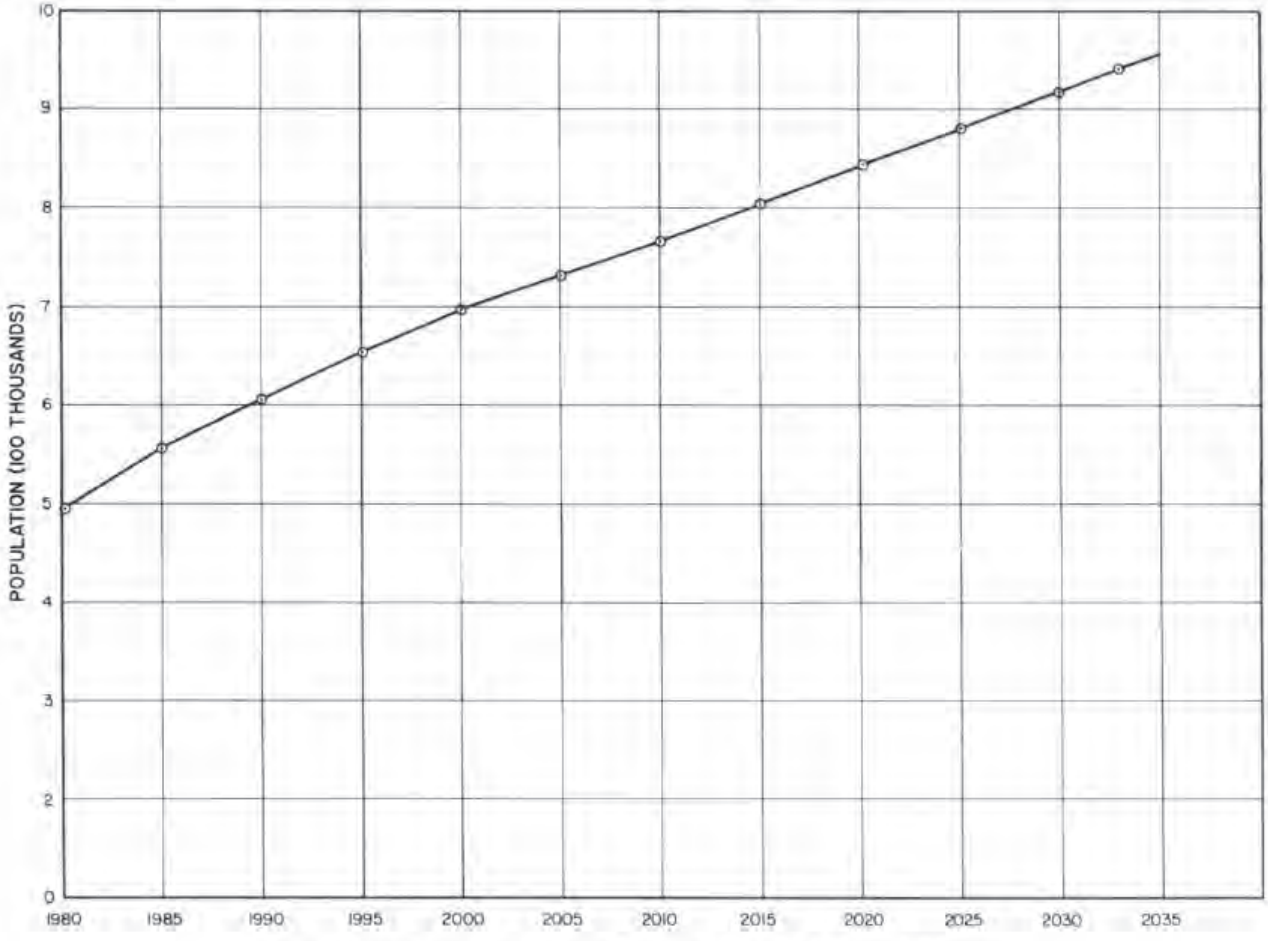


Figure 7. Projected population (50 years from date of study) of the Fresno P-C Region.

TABLE 9. Transport distance from the active deposits nearest the Fresno P-C Region.

AREA	COUNTY	*DISTANCE FROM DOWNTOWN FRESNO	INCREASE IN HAUL DISTANCE OVER LOCAL DEPOSITS	ADDITIONAL COST PER TON FOR TRANSPORT
Mariposa Creek	Merced	50	40	$3.68
Kaweah River	Tulare	50	40	$3.68
Coalinga	Fresno	60	50	$4.53
Los Banos	Merced	70	60	$5.95
Merced River	Merced	80	70	$6.34

*Rounded to nearest ten miles; measured along major roads.

CONCLUSIONS

Within the Fresno P-C Region, two sectors, subdivided into 65 subsectors, have been identified that contain in excess of 2.1 billion tons of aggregate resources.

Based upon available production data and population projections, the Fresno P-C Region will need 268.4 million tons of aggregate during the next 50 years. Of this projected demand, approximately 50 percent (approximately 134 million tons) must be suitable for Portland cement concrete. The approximately 119 million tons of aggregate reserves determined to exist within the P-C region amount to only 44 percent of the projected demand over the next 50 years. Unless new resources are permitted for mining, or alternative resources are utilized, existing reserves will be depleted during the year 2010. If a major earthquake were to affect the P-C region and necessitate reconstruction, the depletion date of existing reserves will arrive before 2010.

ACKNOWLEDGMENTS

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APPENDIX

Interim Criteria for Sectorization of MRZ-2 Areas for Aggregate

The purpose of sectorizing MRZ-2 areas is to provide a semi-quantified estimate of construction aggregate resources which are likely to be available to satisfy society's needs during the next 50 years. This estimate, when compared to DMG projected needs for the next half century, provides the context for communities to plan for future resource availability in their land-use policies. The determination of sectors is intended for the use of the State Mining and Geology Board in identifying areas that are candidates for designation under SMARA. The development of sectors provides a perception of future mineral resource availability in the face of future needs and also portrays where these available minerals are generally located. This information is distributed by the Board to all affected lead agencies to provide them with the data necessary to plan for future resource availability in their land-use policies.

Areas within MRZ-2 classifications are sectorized if they have current land uses which are similar to those in areas which have undergone mineral extraction in the past. Areas within MRZ-2 classifications which have generally not been available for surface mining in the past for specified social or economic reasons are not sectorized. Since such areas are unlikely to be used for surface mining during the foreseeable future, their inclusion in estimates of future resource availability would be misleading.

The estimation of future mineral resource availability in sectors is not a precise analysis, but rather is the best general estimate which can be made with the data presently available. Areas within and without sectors can be used for mining or other land uses at the discretion of the local governments which are charged with responsibility for making land-use decisions. Establishment of sectors in no way infringes on this authority. Rather, it provides a perception of future mineral resource availabilities in the face of future needs and also portrays where these available minerals are generally located.

The following criteria were used by DMG in identifying mineral resource areas which are available for future use. These criteria, in conjunction with the geologic and geometric characteristics of specific mineral deposits, were used in sectorizing MRZ-2 areas. Use of these criteria assures that sectors contain geologically homogenous mineral deposits which, based upon current land use, will be available for future use.

The following specific land uses are considered to be generally incompatible with mining and have been excluded from sectorized lands. Mineral resource areas containing land uses not specifically listed will be considered for sectorization. The criteria are to be applied only to lands classified MRZ-2.

There are two general categories of exclusion: (I.) Economic Exclusion, and (II.) Social Exclusion.

I. *Economic Exclusion*
Specific excluded land uses are:

1. Residential areas
2. Commercial areas with land improvements (buildings)
3. Industrial areas (buildings and adjacent needed storage and parking facilities)
4. Major public or private engineering projects, including:

   a. canals
   b. freeways
   c. bridges
   d. airports and associated developments such as parking lots
   e. dams
   f. railroads
   g. major pipelines
   h. major power transmission lines

II. *Social Exclusion*
Specific excluded land uses are:

1. Cemeteries,
2. Geologic scientific zones,
3. Public parks, developed historical sites and structures, and public recreation areas of all types,*
4. Public or private schools, institutions, hospitals, and prisons, including adjacent grounds and related structures,
5. Military bases and reservations.

---

* *NOTE:* Since the development of these interim criteria, a policy change regarding parklands has occurred. Parklands are now sectorized if they are not excluded on the basis of economic criteria. Sectorized parklands are, however, treated separately in the classification reports, and their mineral resources are not mixed with those occurring on other types of land.

MAP SHEET 52

(UPDATED 2018)

AGGREGATE SUSTAINABILITY IN CALIFORNIA

2018

CALIFORNIA GEOLOGICAL SURVEY
Department of Conservation

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MAP SHEET 52

(UPDATED 2018)

AGGREGATE SUSTAINABILITY IN CALIFORNIA

By

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2018

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INTRODUCTION

Sand, gravel, and crushed stone are "construction materials." These commodities, collectively referred to as aggregate, provide the bulk and strength to Portland Cement Concrete (PCC), Asphaltic Concrete (AC, commonly called "black top"), plaster, and stucco. Aggregate is also used as road base, subbase, railroad ballast, and fill. Aggregate normally provides 80 to 100 percent of the material volume in the above uses.

The building and paving industries in California consume large quantities of aggregate and future demand for this commodity is expected to increase throughout California. Aggregate materials are essential to modern society, both to maintain the existing infrastructure and to provide for new construction. Therefore, aggregate materials are a resource of great importance to the economy of any area. Because aggregate is a low unit-value, high-bulk-weight commodity, it must be obtained from nearby sources to minimize economic and environmental costs associated with transportation. If nearby sources do not exist, then transportation costs can quickly exceed the value of the aggregate. Transporting aggregate from distant sources results in increased construction costs, fuel consumption, greenhouse gas emissions, air pollution, traffic congestion, and road maintenance.

To give an idea of the scale of these impacts, from 1987 to 2016, California consumed an average of about 180 million tons of construction aggregate (all grades) per year. Moving in 25 ton truckloads that is 7.2 million truck trips per year. With an average 25-mile haul (50-mile round trip) that amounts to 360 million truck miles traveled, more than 51 million gallons of diesel fuel used, and more than 570,000 tons of carbon dioxide emissions produced annually. If the haul distance is doubled to 50 miles (100-mile round trip) the numbers double to 720 million truck miles traveled, more than 102 million gallons of diesel fuel used, and over 1.1 million tons of carbon dioxide emissions produced.

Land-use planners and decision makers in California are faced with balancing a wide variety of needs in planning for a sustainable future for their communities and regions. Mining is often seen as a controversial land use during the permitting process. However, there are benefits to having local sources of construction aggregate. Increasingly, as existing permitted aggregate supplies are depleted, local land-use decisions regarding aggregate resources can have regional impacts that go beyond local jurisdictional boundaries.

These factors, universal need, increasing demand, the economic and environmental costs of transportation, and multiple land-use pressures make information about the availability and demand for aggregate valuable to land-use planners and decision makers charged with planning for a sustainable future for California's citizens.

California Geological Survey (CGS) Map Sheet 52 and this accompanying report provide general information about the current availability of, and future demand for, California's permitted aggregate reserves. Map Sheet 52 was originally published in 2002 (Kohler, 2002) and subsequently updated in 2006 (Kohler, 2006) and 2012 (Clinkenbeard, 2012). Map Sheet 52 (2018) is an update of the version published in 2012.

Map Sheet 52 updates data from 49 reports compiled by the CGS for more than 30 aggregate study areas throughout the state (see Appendix). These study areas cover about 30 percent of the state and provide aggregate for about 85 percent of California's population. This report is divided into three parts:

- Part I - provides data sources and methods used to derive the information presented.
- Part II - compares the updated 2018 Map Sheet 52 to the prior (2012) map.
- Part III - an overview of construction aggregate.

All aggregate data and any reference to "aggregate" in this report and on the map, pertain to "construction aggregate," defined as alluvial sand and gravel or crushed stone that meets standard specifications for use in PCC or AC unless otherwise noted.

The estimates of permitted resources, aggregate demand, and years of permitted reserves remaining on Map Sheet 52 (2018) and in this report, are based on conditions as of January 1, 2017 and do not reflect changes, such as production, mine closures, or new or expanded permits, that may have occurred since that time. Although the statewide and regional information presented on the map and in this report may be useful to decision-makers, it should not be used as a basis for local land-use decisions. The more detailed information on the location and estimated amounts of permitted and non-permitted resources, and future regional demands contained in each of the aggregate studies employed in the compilation of Map Sheet 52 should be used for local land-use and decision-making purposes.

PART I: DESCRIPTION OF MAP SHEET 52, AGGREGATE SUSTAINABILITY IN CALIFORNIA

Map Sheet 52 is a statewide map showing a compilation of data about aggregate availability collected over a period of about 40 years and updated to January 1, 2017. The purpose of the map is to compare projected aggregate demand for the next 50 years with currently permitted aggregate reserves in various regions of the state. The map also shows the projected years of permitted reserves remaining and highlights regions where less than 10 years of permitted aggregate supply remain. The following sections describe data sources and methodology used in the development of the map.

Mineral Land Classification Reports and Aggregate Studies

Aggregate reserves and projected aggregate demand shown on Map Sheet 52 are updated from mineral land classification reports published by CGS between 1979 and 2017 (see Appendix). They were prepared in response to California's Surface Mining and Reclamation Act of 1975 (SMARA) that requires the State Geologist to classify land based on the known or inferred mineral resource potential of that land. SMARA, its regulations and guidelines, are described in Special Publication 51 (State Mining and Geology Board, 2000). The regulations and guidelines can be found on the State Mining and Geology Board website at http://www.conservation.ca.gov/smgb.

The Mineral Land Classification process identifies lands that contain economically significant mineral deposits. The primary goal of mineral land classification is to ensure that the mineral resource potential of lands is recognized and considered in land-use planning. The classification process includes an assessment of the quantity, quality, and extent of aggregate deposits in a study area.

Mineral land classification reports may be specific to aggregate resources, may contain information about both aggregate and other mineral resources, or they may only contain information on minerals other than aggregate. Reports that focus on aggregate include aggregate resource classification and mapping, estimates of permitted and non-permitted aggregate resources, projected 50-year demand for aggregate resources, and an estimate of when the permitted reserves will be depleted. Map Sheet 52 is a statewide updated summary of 50-year demands and permitted resources for all regional SMARA classification reports pertaining to construction aggregate.

Mineral land classification studies for aggregate may use either a Production-Consumption (P-C) region or a county as the study area boundary. A P-C region is one or more aggregate production districts (a group of producing aggregate mines) and the market area they serve. P-C regions sometimes cross county boundaries. Mineral land classification reports include information from one or more P-C regions, or from a county. For ease in discussion, the area covered by each P-C region or county aggregate study is referred to as an "aggregate study area." SMARA guidelines recommend that the State Geologist periodically review the mineral land classification in defined study regions to determine if new classifications are necessary. The projected 50-year forecast of aggregate demand in the region may also be revised.

The index map of aggregate studies shown in the lower left-hand corner of Map Sheet 52 shows the latest reports that cover an aggregate study area. Earlier reports covering the same areas or portions of areas are referenced in the Appendix with an asterisk ("*"). Original mineral land classification reports and update reports are listed in the Appendix and can be found on the CGS Information Warehouse at http://maps.conservation.ca.gov/cgs/informationwarehouse/.

Fifty-Year Aggregate Demand Forecast

The fifty-year aggregate demand forecast for each of the aggregate study areas is presented on Map Sheet 52 as a pie chart (See *Fifty-Year Aggregate Demand Compared to Permitted Aggregate Reserves* section), and is presented in Table 1 of this report. The demand information may be new, or updated from previously published mineral land classification reports. The demand forecast information depicted on Map Sheet 52 is for the period January 1, 2017 through December 2066.

The aggregate study areas with the greatest projected future demand for aggregate are the South San Francisco Bay and Temescal Valley-Orange County areas. Each is expected to require more than a billion tons of aggregate by the end of 2066. Other areas with projected high demands are Western San Diego County, San Gabriel Valley, San Bernardino, Sacramento County, and Palmdale. Each of these areas is projected to need more than 500 million tons of aggregate in the next 50 years. Aggregate study areas having smaller demands generally are in rural, less populated areas. The aggregate study areas of El Dorado County, Glenn County, Nevada County, Shasta County, and Tehama County are all projected to require less than 100 million tons of aggregate over the next 50 years.

Methodology

The steps used for forecasting California's 50-year aggregate needs using the per capita consumption model are:

1. Collecting yearly historical production and population data.

2. Dividing yearly aggregate production by the population for that same year to determine annual historical per capita consumption.

3. Determining the average of the annual historical per capita consumption values for the range of years being used.

4. Projecting yearly population for a 50-year period from the beginning of 2017 through 2066.

5. Multiplying each year of projected population by the average historical per capita consumption and adding the results for each year to obtain the 50-year aggregate demand.

Table 1. Comparison of 50-Year Demand to Permitted Aggregate Reserves for Aggregate Study Areas as of January 1, 2017.

AGGREGATE STUDY AREA[1]	50-Year Demand (million tons)	Permitted Aggregate Reserves (million tons)	Permitted Aggregate Reserves Compared to 50-Year Demand (percent)	Projected Years Remaining
Bakersfield P-C Region	338	1,708	505	More than 50
Barstow-Victorville P-C Region	163	117	72	31 to 40
Claremont-Upland P-C Region	202	90	45	21 to 30
El Dorado County	82	15	18	11 to 20
Fresno P-C Region	305	556	182	More than 50
Glenn County	41	22	54	21 to 30
Merced County	154	61	40	21 to 30
Monterey Bay P-C Region	333	297	89	41 to 50
Nevada County	41	52	127	More than 50
North San Francisco Bay P-C Region	492	263	53	21 to 30
Palmdale P-C Region	569	163	29	11 to 20
Palm Springs P-C Region	238	163	68	31 to 40
Placer County	188	387	206	More than 50
Sacramento County	724	327	45	21 to 30
Sacramento-Fairfield P-C Region	295	109	37	21 to 30
San Bernardino P-C Region	939	156	17	11 to 20
San Fernando Valley/ Saugus-Newhall[2]	**387**	**17**	**4**	**10 or fewer**
San Gabriel Valley P-C Region	751	297	40	21 to 30
San Luis Obispo-Santa Barbara P-C Region	226	58	26	11 to 20
Shasta County	82	49	60	31 to 40
South San Francisco Bay P-C Region	1,320	506	38	21 to 30
Stanislaus County	160	39	24	11 to 20
Stockton-Lodi P-C Region	409	203	50	21 to 30
Tehama County	49	30	61	31 to 40
Temescal Valley-Orange County[2]	1,079	862	80	41 to 50
Tulare County	130	53	41	21 to 30
Ventura County[2]	241	84	35	11 to 20
Western San Diego County P-C Region	763	265	35	11 to 20
Yuba City-Marysville P-C Region	344	679	197	More than 50
Total	11,045	7,628	69	

[1] Aggregate study areas follow either a Production-Consumption (P-C) region boundary or a county boundary. A P-C region includes one or more aggregate production districts and the market area that those districts serve. Aggregate resources are evaluated within the boundaries of the P-C Region. County studies evaluate all aggregate resources within the county boundary.

[2] Two P-C regions have been combined into one study area.

Bold = study area with ten or fewer years of permitted reserves.

For this update, the range of years of historical production and population data used were generally from 1980-2016.

The per capita consumption model has proved to be effective for projecting aggregate demand in major metropolitan areas. However, the per capita model may not work well in county aggregate studies or in P-C regions that import or export a large percentage of aggregate resulting in a low correlation between P-C region production and population. In such areas, projections may be made based on historical production or, multiple projections based on differing assumptions may be used to better characterize a range of future demand.

For regions that export large amounts of aggregate to neighboring P-C regions, projections are based on an historical production model where 50-year aggregate demand is determined by extending a best-fit line of historical aggregate production data for a county or region. This model was used to project Yuba City-Marysville's 50-year demand because the region exports about 70 percent of its aggregate into neighboring areas such as Sacramento County and Placer County. The 50-year demand for Glenn and Tehama counties, the Palmdale P-C Region, and the Temescal Valley-Orange County area was also projected using this method.

Permitted Aggregate Reserves

Approximately 7.6 billion tons of permitted aggregate reserves lie within the aggregate study areas shown on Map Sheet 52. Permitted aggregate reserves are aggregate deposits that have been determined to be acceptable for commercial use, exist within properties owned or leased by aggregate producing companies, and have permits allowing mining of aggregate material. A "permit" is a legal authorization or approval by a lead agency, the absence of which would preclude mining operations. Although some permitted reserves face legal challenges, these reserves are included in this study pending resolution of those challenges.

In California, mining permits usually are issued by local lead agencies (county or city governments). Map Sheet 52 shows permitted aggregate reserves as a percentage of the 50-year demand on each pie chart (See *Fifty-Year Aggregate Demand Compared to Permitted Aggregate Reserves* section). Beneath the study area name located next to its corresponding pie chart is the permitted resource in tons along with the 50-year demand. These figures are also given in Table 1.

Permitted aggregate resource calculations shown on the map and in Table 1 initially were determined from information provided in reclamation plans, mining plans, and use permits issued by the lead agencies. When information was inadequate to make reliable independent calculations, CGS staff used resource estimates provided by mine operators or owners. These data were checked against rough calculations made by CGS staff, and any major discrepancies were discussed with the mine operators or owners. Permitted reserve calculations have been updated to account for production from 2010-2016 and are current as of the beginning of 2017.

Fifty-Year Aggregate Demand Compared to Permitted Aggregate Reserves

Fifty-year aggregate demand compared to the currently permitted aggregate reserves is represented by a pie chart for each aggregate study area on Map Sheet 52. Each pie chart is in the approximate center of the aggregate study area it represents. There are four different sizes of charts, each representing a 50-year demand range. The smallest pie chart represents 50-year demands of less than 200 million tons, while the largest chart represents demands of over 800 million tons. The 50-year demand (in tons) is shown on the map with the amount of permitted reserves beneath the study area name located next to its corresponding pie chart (permitted reserves, left / 50-year demand, right). The whole pie represents the total 50-year aggregate demand for a particular aggregate study area. The blue portion of the pie represents the permitted aggregate resource (shown as a percentage of the 50-year demand) while the purple-colored portion of the pie represents that portion of the 50-year demand that will not be met by the currently permitted reserves. For example, if the blue portion is 25 percent and the purple portion is 75 percent of a pie chart that represents a total demand of 400 million tons, the permitted reserves are 100 million tons, and the region will need an additional 300 million tons of aggregate to supply the area for the next 50 years. The pie representing the Bakersfield aggregate study area is completely colored blue, showing permitted aggregate reserves are equal to or greater than the area's 50-year aggregate demand. Detailed examples are provided in the legend of Map Sheet 52.

Except for the Bakersfield P-C Region, Fresno P-C Region, Nevada County, Placer County, and the Yuba City-Marysville P-C Region, all the aggregate study areas have less permitted aggregate reserves than they are projected to need for the next 50 years. Fifteen of the aggregate study areas shown on the map have less than half of the permitted reserves they are projected to need in the next 50 years.

Estimates of Years of Permitted Reserves Remaining

The right-hand column of Table 1 indicates the projected years of permitted reserves remaining for the various aggregate study areas. Calculations of depletion years are made by comparing the currently permitted reserves to the projected annual aggregate consumption in the study area on a year-by-year basis. This is not the same as dividing the total projected 50-year demand for aggregate by 50 because, as population increases, so does the projected annual consumption of aggregate for a study area. Data are presented as ranges; 10 or fewer, 11-20, 21-30, 31-40, 41-50, and more than 50 years. This information is included on Map Sheet 52 beneath the study area name along with the permitted reserves and the projected 50-year demand. These estimates are based on conditions as of January 1, 2017 and do not reflect changes, such as new or expanded permits, that may have occurred since that time.

Only one of the aggregate study areas in Table 1, the San Fernando Valley-Saugus Newhall area, is projected to have less than 10 years of permitted aggregate reserves remaining as of January 1, 2017.

Seven of the aggregate study areas in Table 1 have between 11 and 20 years of permitted aggregate reserves remaining, ten have between 21 and 30 years of permitted aggregate reserves remaining, four have 31 to 40 years remaining, two have 41 to 50 years, and five have more than 50 years of permitted reserves remaining.

These numbers are estimates and the actual lifespan of existing permitted reserves in a study area can be influenced by many factors. In periods of high economic growth, demand may increase, shortening the life of permitted reserves. Large projects, such as the construction or maintenance of major infrastructure, or rebuilding after a disaster such as an earthquake could also deplete permitted reserves more rapidly. Increased demand from neighboring regions with dwindling or depleted permitted reserves may also accelerate the depletion of permitted reserves in a study area. Conversely, a slow economy may reduce demand for a period of time, extending the life of permitted reserves, or new or expanded permits may be granted in a study area, increasing the permitted reserves and the lifespan of permitted reserves in that area.

Non-Permitted Aggregate Resources

Non-permitted aggregate resources are deposits that may meet specifications for construction aggregate, are recoverable with existing technology, have no land use overlying them that is incompatible with mining, and currently are not permitted for mining. While not shown on Map Sheet 52, non-permitted aggregate resources are identified and discussed in each of the mineral land classification reports used to compile the map (See Appendix).

There are approximately 74 billion tons of non-permitted construction aggregate resources in the aggregate study areas shown on Map Sheet 52. While this number seems large, it is unlikely that all of these resources will ever be mined because of social, environmental, or economic factors. The location of aggregate resources too close to urban or environmentally sensitive areas can limit or prevent their development. Resources may also be located too far from a potential market to be economic. Despite such possible constraints, non-permitted aggregate resources are the most likely future sources of construction aggregate potentially available to meet California's continuing demand. Factors used to calculate non-permitted resource amounts and to determine the aerial extent of these resources, are given in each of the mineral land classification reports listed in the Appendix.

Aggregate Production Areas and Districts

Aggregate production areas are shown on Map Sheet 52 by five different sizes of triangle. A triangle may represent one or more active aggregate mines. The relative size of each symbol corresponds to the amount of yearly production for each mine or group of mines. Yearly production was based on data from the Department of Conservation's Division of Mine Reclamation (DMR) records for the calendar year 2016.

The smallest triangle represents an area that produced less than 0.5 million tons of aggregate in 2016. These triangles often represent a single mine operation and many are in rural parts of the state. The largest triangle represents aggregate mining districts

with production of more than 5 million tons in 2016. Only two aggregate production districts fall into this category – the Temescal Valley District in western Riverside County and the San Gabriel Valley District in Los Angeles County.

PART II: COMPARISONS BETWEEN THE PRIOR (2012) AND THE UPDATED (2018) MAP SHEET 52

The prior version of Map Sheet 52 was published in 2012. Permitted aggregate resource data for that map were current as of January 1, 2011. Work conducted for that study took place during 2011/2012. The latest aggregate production and location data available for the prior map were from 2010 records. The aggregate demand projections for the prior map were based on California Department of Finance (DOF) county population projections from the 2010 U.S. census. Fifty-year aggregate demand from January 1, 2011 through the year 2060 was determined for the included study areas.

This updated Map Sheet 52 was completed and published in 2018. Permitted aggregate resource data for the updated map is current as of January 1, 2017. All work conducted for the updated study took place during 2017/2018. The latest aggregate production and location data available for the updated map are from 2016 records. The aggregate demand projections for the updated map were based on DOF county population estimates and projections for 2010 to 2060 (DOF, 2018). Fifty-year aggregate demand from January 1, 2017 through the year 2066 was determined for the included study areas.

Changes have occurred in both aggregate supplies (permitted aggregate reserves) and in 50-year aggregate demand since Map Sheet 52 (2012) was completed. Changes in permitted aggregate reserves are shown in Table 2. Changes in 50-year demand are shown in Table 3.

Aggregate Study Area Changes

Six aggregate study areas on the original (2002) Map Sheet 52 were modified for the 2006 map, resulting in three fewer study areas. They included the Southern California P-C regions of Orange County, Temescal Valley, San Fernando Valley, Saugus-Newhall, Western Ventura County, and Simi Valley. These regions were combined into three regions when they began to run out of permitted reserves and became dependent on aggregate sources from neighboring regions. The importation of aggregate from neighboring regions typically results in longer haul distances, higher costs, and increased carbon dioxide emissions, air pollution, traffic congestion, and highway maintenance. The shift in supply area also results in more rapid depletion of permitted reserves in neighboring regions.

In the 2006 and 2012 versions of Map Sheet 52, information for eastern and western Merced County and northern and southern Tulare county were reported. This was because separate market regions existed in those study areas. While those separate market regions may still exist, in this update, information is reported for Merced and Tulare counties and not for the eastern and western or northern and southern areas, respectively.

Table 2. Comparison of Permitted Aggregate Reserves Between Map Sheet 52, 2012 and Map Sheet 52, 2018.

AGGREGATE STUDY AREA	Map Sheet 52, 2012 Permitted Aggregate Reserves as of 1/1/11 (million tons)	Map Sheet 52, 2018 Permitted Aggregate Reserves as of 1/1/17 (million tons)	Percent Difference
Bakersfield P-C Region	143	1,708	1,094
Barstow Victorville P-C Region	124	117	-6
Claremont-Upland P-C Region	109	90	-17
El Dorado County	18	15	-17
Fresno P-C Region	46	556	1,109
Glenn County	33	22	-33
Merced County**	N/A**	61	N/A**
Monterey Bay P-C Region	323	297	-8
Nevada County	26	52	100
North San Francisco Bay P-C Region	110	263	139
Palmdale P-C Region	152	163	7
Palm Springs P-C Region	152	163	7
Placer County	152	387	155
Sacramento County	42	327	679
Sacramento-Fairfield P-C Region	128	109	-15
San Bernardino P-C Region	241	156	-35
San Fernando Valley/Saugus-Newhall*	77	17	-78
San Gabriel Valley P-C Region	322	297	-8
San Luis Obispo-Santa Barbara P-C Region	75	58	-23
Shasta County	52	49	-6
South San Francisco Bay P-C Region	404	506	25
Stanislaus County	45	39	-13
Stockton Lodi P-C Region	232	203	-13
Tehama County	32	30	-6
Temescal Valley-Orange County*	297	862	190
Tulare County**	N/A**	53	N/A**
Ventura County (combined Western Ventura County and Simi Valley P-C Region)*	96	84	-13
Western San Diego County P-C Region	167	265	59
Yuba City-Marysville P-C Region	392	679	73
Total	4,067	7,628	88

* Two P-C Regions have been combined into one study area.
** In Map Sheet 52 (2012) separate values for east and west Merced County and north and south Tulare County were presented. In this update, information is given only for the counties as a whole and not the parts.

Table 3. Comparison of 50-Year Demand Between Map Sheet 52, 2012 and Map Sheet 52, 2018.

AGGREGATE STUDY AREA	Map Sheet 52, 2012 50-Year Demand as of 1/1/11 (million tons)	Map Sheet 52, 2018 50-Year Demand as of 1/1/17 (million tons)	Percent Difference
Bakersfield P-C Region	438	338	-23
Barstow-Victorville P-C Region	159	163	3
Claremont-Upland P-C Region	203	202	0
El Dorado County	76	82	8
Fresno P-C Region	435	305	-30
Glenn County	59	41	-31
Merced County**	N/A**	154	N/A**
Monterey Bay P-C Region	346	333	-4
Nevada County	100	41	-59
North San Francisco Bay P-C Region	521	492	-6
Palmdale P-C Region	577	569	-1
Placer County	151	238	58
Palm Springs P-C Region	295	188	-36
Sacramento County	670	724	8
Sacramento-Fairfield P-C Region	196	295	51
San Bernardino P-C Region	993	939	-5
San Fernando Valley/Saugus-Newhall*	476	387	-19
San Gabriel Valley P-C Region	809	751	-7
San Luis Obispo-Santa Barbara P-C Region	240	226	-6
Shasta County	93	82	-12
South San Francisco Bay P-C Region	1,381	1,320	-4
Stanislaus County	214	160	-25
Stockton Lodi P-C Region	436	409	-6
Tehama County	62	49	-21
Temescal Valley-Orange County*	1,077	1,079	0
Tulare County **	N/A**	130	N/A**
Ventura County (combined Western Ventura County and Simi Valley P-C Regions)*	298	241	-19
Western San Diego County P-C Region	1,014	763	-25
Yuba City-Marysville P-C Region	403	344	-15
Total	12,047	11,045	-8

* Two P-C Regions have been combined into one study area.
** In Map Sheet 52 (2012) separate values for east and west Merced County and north and south Tulare County were presented. In this update, information is given only for the counties as a whole and not the parts.

No additional study areas have been combined in this update. It is likely that in some future update the San Fernando Valley-Saugus Newhall aggregate study area and the Palmdale study area may be combined as permitted reserves in the San Fernando Valley-Saugus Newhall aggregate study area are depleted. In addition, a study of the Greater Sacramento Area currently nearing completion will likely result in the combination of several previously existing study areas.

Changes in Permitted Aggregate Reserves

Fifteen of the study areas shown on the updated map experienced a decrease in permitted aggregate reserves since the 2012 map was completed (See Table 2). Most of these decreases likely represent aggregate production within those study areas since the last update of Map Sheet 52.

A large part of the reduction in the San Fernando Valley-Saugus Newhall study area is due to the subtraction of the 56 million tons of permitted aggregate reserves previously associated with the CEMEX Soledad Canyon Sand and Gravel Mining Project. In 2015, the Bureau of Land Management withdrew the contracts that would have allowed mining. The issue is currently under appeal with the Interior Board of Land Appeals. If, at a future date, the contracts are restored then the permitted reserves will be restored.

Twelve of the study areas shown on the updated map had increases in permitted aggregate reserves. Most of these increases are because of newly permitted or expanded mining operations within the various study areas. An expansion may increase the footprint of the mine or increase permitted mining depth. Some of these increases may be the result of recalculation of the permitted aggregate reserves in a study area.

Total permitted reserves for all the included study areas increased to 7,628 million tons from 4,067 million tons – an apparent increase of 3,561 million tons. The actual increase was likely slightly more because of production since 2010. Approximately two-thirds of the increase is due to permitting activities in the Bakersfield, Fresno, and Sacramento study areas.

Changes in Fifty-Year Demand

Of the study areas shown on the updated Map Sheet 52, five had increases in 50-year demand, two had less than a one percent change, and 20 showed decreases in projected 50-year demand (See Table 3). The large number of study areas with decreasing 50-year demand is likely due in part to incorporation of lower per capita consumption rates caused by the slow recovery of the construction industry in California in the years following the economic recession of 2007-2009.

Comparison of Areas with Less than 10-Years of Permitted Aggregate Reserves

The 2018 Map Sheet 52 shows only one aggregate study area with less than a 10-year supply of permitted aggregate reserves – San Fernando Valley-Saugus Newhall.

Compared to the 2012 version of the map, which showed four aggregate study areas with less than a 10-year supply of aggregate – Sacramento County and the Fresno, San Fernando Valley-Saugus Newhall, and Western San Diego P-C regions.

PART III: OVERVIEW OF CONSTRUCTION AGGREGATE

Construction aggregate was the leading non-fuel mineral commodity produced in California in 2016. Valued at $1.42 billion, aggregate made up about 42 percent of California's $3.4 billion non-fuel mineral production in 2016.

Aggregate Quality and Use

Aggregate normally makes up 80 to 100 percent of the material volume in PCC and AC and provides the bulk and strength to these materials. Rarely, even from the highest-grade deposits, is in-place aggregate physically or chemically suited for every type of aggregate use. Every potential deposit must be tested to determine how much of the material can meet specifications for a particular use, and what processing is required. Specifications for PCC, AC, and various other uses of aggregate have been established by several agencies, such as the U.S. Bureau of Reclamation, the U.S. Army Corps of Engineers, and the California Department of Transportation to ensure that aggregate is satisfactory for specific uses. These agencies and other major consumers test aggregate using standard procedures of the American Society for Testing Materials (ASTM), the American Association of State Highway Officials, and other organizations.

Most PCC and AC aggregate specifications have been established to ensure the manufacture of strong, durable structures capable of withstanding the physical and chemical effects of weathering and use. For example, specifications for PCC and concrete products prohibit or limit the use of rock materials containing mineral substances such as gypsum, pyrite, zeolite, opal, chalcedony, chert, siliceous shale, volcanic glass, and some high-silica volcanic rocks. Gypsum retards the setting time of portland cement; pyrite dissociates to yield sulfuric acid and an iron oxide stain; and other substances contain silica in a form that reacts with alkali substances in the cement, resulting in cracks and "pop-outs."

Specifications also call for precise particle-size distribution for the various uses of aggregate that is commonly classified into two general sizes: coarse and fine. Coarse aggregate is rock retained on a 3/8-inch or a #4 U.S. sieve. Fine aggregate passes a 3/8-inch sieve and is retained on a #200 U.S. sieve (a sieve with 200 weaves per inch). For some uses, such as asphalt paving, particle shape is specified. Aggregate material used with bituminous binder (asphalt) to form sealing coats on road surfaces shall consist of at least 90 percent by weight of crushed particles. Crushed stone is preferable to natural gravel in AC because asphalt adheres better to broken surfaces than to rounded surfaces and the interlocking of angular particles strengthens the AC and road base.

The material specifications for PCC and AC aggregate are more restrictive than specifications for other applications such as Class II base, subbase, and fill. These restrictive specifications make deposits acceptable for use as PCC or AC aggregate the scarcest and most valuable aggregate resources. Aggregate produced from such deposits can be, and commonly is, used in applications other than concrete. PCC- and AC-grade aggregate deposits are of major importance when planning for future

availability of aggregate commodities because of their versatility, value, and relative scarcity.

Factors Affecting Aggregate Deposit Quality

The major factors that affect the quality of construction aggregate are the rock type and the degree of weathering of the deposit. Rock type determines the hardness, durability, and potential chemical reactivity of the rock when mixed with cement to make concrete. In alluvial sand and gravel deposits, rock type is variable and reflects the rocks present in the drainage basin of the stream or river. In crushed stone deposits, rock type is typically less variable, although in some types of deposits, such as sandstones or volcanic rocks, there may be significant variability of rock type. Rock type may also influence aggregate shape. For example, some metamorphic rocks such as slates tend to break into thin platy fragments that are unsuitable for many aggregate uses, while many volcanic and granitic rocks break into blocky fragments more suited to a wide variety of aggregate uses. Deposit type also affects aggregate shape. For example, in alluvial sand and gravel deposits, the natural abrasive action of the stream rounds the edges of rock particles, in contrast to the sharp edges of particles from crushed stone deposits.

Weathering is the in-place physical or chemical decay of rock materials at or near the Earth's surface. Weathering commonly decreases the physical strength of the rock and may make the material unsuitable for high strength and durability uses. Weathering may also alter the chemical composition of the aggregate, making it less suitable for some aggregate uses. If weathering is severe enough, the material may not be suitable for use as PCC or AC aggregate. Typically, the older a deposit is, the more likely it has been subjected to weathering. The severity of weathering commonly increases with increasing age of the deposit.

Comparison of Alluvial Sand and Gravel to Crushed Stone Aggregate

The preferred use of one aggregate material over another in construction practices depends not only on specification standards, but also on economic considerations. Alluvial gravel is typically preferred to crushed stone for PCC aggregate because the rounded particles of alluvial sand and gravel result in a wet mix that is easier to work than a mix made of angular fragments. Also, crushed stone is less desirable in applications where the concrete is placed by pumping because sharp edges will increase wear and damage to the pumping equipment. The workability of a mix consisting of portland cement with crushed stone aggregate can be improved by adding more sand and water, but more cement must then be added to the mix to meet concrete durability standards. This results in a more expensive concrete mix and a higher cost to the consumer.

In addition, aggregate from a crushed stone deposit is typically more expensive than that from an alluvial deposit due to the additional costs associated with the ripping, drilling and blasting necessary to remove material from most quarries and the additional crushing required to produce the various sizes of aggregate. Manufacturing sand by crushing is costlier than mining and processing naturally occurring sand. Although more care is required in pouring and placing a wet mix containing crushed stone, PCC made with this aggregate is as satisfactory as that made with alluvial sand and gravel of comparable

rock quality. Owing to environmental concerns and regulatory constraints in many areas of the state, it is likely that extraction of sand and gravel resources from instream and floodplain areas will become less common in the future. If this trend continues, crushed stone may become increasingly important to the California market.

Aggregate Price

The price of aggregate throughout California varies considerably depending on location, quality, and supply and demand. The highest quality aggregate, and typically most costly, is that which meets the specifications for use in PCC or AC. All prices discussed in this section are for PCC/AC-grade aggregate at the plant site or FOB (freight on board). Transportation cost, which adds to the final cost of aggregate, is discussed in the next section.

Regional variations make it difficult to estimate the average price of PCC-grade aggregate for the state. Over the last decade, prices have varied from more than $20 per ton in areas with depleting or depleted aggregate supplies and high demands such as San Diego and parts of the Bay Area, to $9 to $12 per ton in areas such as Yuba City-Marysville with abundant aggregate supplies and low to moderate demands. In many areas of the state it is likely that prices fall between these two endmembers.

Transportation and Increasing Haul Distances

Transportation plays a major role in the cost of aggregate to the consumer. Aggregate is a low-unit-value, high-bulk-weight commodity, and it must be obtained from nearby sources to minimize both the dollar cost to the aggregate consumer and other environmental and economic costs associated with transportation. If nearby sources do not exist, then transportation costs may significantly increase the cost of the aggregate by the time it reaches the consumer.

This makes the mining of aggregate much more competitive than most other mined commodities. The location, distance to market, and access to major transportation routes greatly influence the economic feasibility of an aggregate mine.

Most aggregate in California moves to its final point of use by truck. Trucking is typically charged at an hourly rate and rates may vary in different regions of the state. The typical distance traveled per hour may also vary, being greater in less congested or more rural areas, and less in densely populated urban areas. Other factors that affect hauling rates include fuel costs, toll bridges and toll roads, road conditions, and terrain. Transportation cost is the principal constraint defining the market area for an aggregate mining operation and the cost of transporting aggregate over long distances can equal or exceed the base cost of the aggregate.

Throughout California, aggregate haul distances have gradually increased as more local sources of aggregate diminish. Consequently, older P-C regions, most of which were established in the late 1970s, have changed considerably since their boundaries were drawn. This is especially evident in Los Angeles, Orange, and Ventura counties where aggregate shortages have led to the merging of six P-C regions shown on the original

(2002) map into three regions for the updated maps. In some parts of the state, one-way haul distances that were 20-30 miles decades ago are now sometimes 100 miles or more. Increased aggregate haul distances not only increase the cost of aggregate to the consumer, but also increase environmental and societal impacts such as increased fuel consumption, carbon dioxide (CO_2) emissions, air pollution, traffic congestion, and road maintenance.

Imported Aggregate

In some regions, local aggregate production is sufficient to meet the local demand, but in others, there is more demand than can be met by local production leading to a shortfall that is typically met by importing construction aggregate from neighboring aggregate producing regions.

There are both advantages and disadvantages to importing construction aggregate. Imports can provide needed aggregate in areas with depleted reserves/resources and can supply specific types of aggregate that are in short supply in the region. However, imported aggregate is often more expensive because of additional transportation costs. Increased costs for aggregate leads to more expensive construction projects in both the public and private sectors. Importing aggregate from neighboring regions also leads to more rapid depletion of reserves/resources in those regions, potentially contributing to price increases or aggregate shortages in those regions.

In addition to the greater economic costs, there are often increased environmental and societal costs associated with the import of aggregate when compared to local production. The environmental impacts include higher emissions of greenhouse gases, such as CO_2, and air pollution. The societal impacts include increased traffic congestion and road wear and maintenance due to increased truck traffic. In the case of imports, these environmental and societal impacts occur both within the importing region and in the neighboring regions that supply the material and through which the material is transported.

Currently almost all aggregate produced or imported into California is transported to its final point of use by truck. In discussions of aggregate import, other modes of transportation such as rail, barge, or ship are often mentioned as alternative methods of moving aggregate. In 2011, the San Diego Association of Governments (SANDAG) Service Bureau published the San Diego Region Aggregate Supply Study (SANDAG Service Bureau, 2011). This study included an evaluation of fuel use and CO_2 emissions for several scenarios involving different transport options for importing aggregate into the San Diego area. While the published study is specific to the San Diego region, it provides an interesting analysis of the impacts of importing construction aggregate. The following discussion is adapted from Special Report 240 (Gius, Busch, and Miller, 2017).

The SANDAG study looked at the impacts based on various combinations of transport options for the following five scenarios:

- In region production
- Import by truck from neighboring regions
- Import by rail/truck from San Bernardino County
- Import by barge/truck from Baja California, Mexico
- Import by ship/truck from British Columbia, Canada.

Fuel consumption, CO_2 emissions, and some other pollutant emissions (nitrogen oxides (NO_x) and particulate matter (PM)) were estimated based on round-trip travel, with aggregate transported to the point of use and the vehicle returning empty. For scenarios involving non-truck transport (rail, barge, and ship), delivery to the final point of use by truck was included. The transport scenarios and transport type and mileage considerations are presented in Table 4. More detail can be found in the SANDAG study (SANDAG Service Bureau, 2011).

Table 4. Summary of SANDAG Aggregate Transport Scenarios

SANDAG AGGREGATE TRANSPORT SCENARIOS	
TRANSPORT OPTION	**MILEAGE BY MODE**
Local: Truck	26 miles one way / 52 miles round trip
Import: Truck	100 miles one way / 200 miles round trip
Import: Rail + Truck	Rail: 200 miles one way / 400 miles round trip Truck: 20 miles one way / 40 miles round trip
Import: Barge + Truck	Barge: 70 miles one way / 140 miles round trip Truck: 20 miles one way / 40 miles round trip
Import: Ship + Truck	Ship: 1,540 miles one way / 3,080 miles round trip Truck: 20 miles one way / 40 miles round trip

Adapted from SANDAG Service Bureau, 2011

Transportation methods that move larger amounts of aggregate per load can be more efficient in terms of fuel consumption (gallons of fuel consumed per net ton-mile traveled) and CO_2, NO_x, and PM emissions (grams of CO_2, NO_x, and PM emitted per net ton-mile traveled). However, even though these transport options may be more efficient on a net ton-mile basis, the total fuel consumption and emissions are dependent on the distance traveled. If those distances are large, total fuel consumption and emissions may exceed those of less efficient transportation methods over shorter distances. This is demonstrated by SANDAG's findings. Even though transport by rail, barge, and ship

have lower fuel consumption and CO_2 emissions per net ton-mile than transport by truck (Table 5), the total fuel usage and CO_2 emissions for those transport scenarios are greater than in-region production with truck delivery because of the distances involved (Table 6).

Table 5. Fuel Consumption and CO_2 Emissions from Aggregate Transport with Payload

Mode	Payload	Fuel Consumption (gallons/net ton per mile)	CO_2 Emissions (grams/net ton per mile)
Truck	25 tons	0.0086	86.9
Rail	100 tons per hopper car	0.0021	21.4
Barge	1,500 tons	0.0068	69.6
Ship	72,786 tons	0.0004	5.3

Adapted from Tables 4-2 and 4-4, SANDAG Service Bureau, 2011

Table 6. Fuel Consumption and Emissions for Aggregate Transport Scenarios – Estimates per Million Tons of Aggregate Transported

Transport Option	Total Fuel Consumption (gallons)	Total CO_2 Emissions (metric tons)	Total NO_x Emissions (metric tons)	Total PM Emissions (metric tons)
Local: Truck	296,000	3,000	26.5	1.1
Import: Truck	1,138,000	11,537	102	4.4
Import: Rail + Truck	788,000	7,985	120.4	3.3
Import: Barge + Truck	804,000	8,210	147.1	5.1
Import: Ship + Truck	1,406,000	16,703	282.2	16.3

Adapted from SANDAG Service Bureau, 2011

Table 6 shows that, per million tons of aggregate transported, local production with transport by truck consumes less fuel and produces less CO_2, NOx, and PM than the other transport options investigated by SANDAG. Transport Option 2, import of one million tons of aggregate by truck from neighboring regions, consumes almost four times as much fuel and produces almost four times the emissions as the local production and delivery of a similar amount of aggregate. In addition, the impacts occur not only in the Western San Diego County P-C Region, but in neighboring regions through which the materials are transported.

While this analysis pertains to San Diego County, similar analyses, with appropriate parameters, could be done for other regions. What it does point out is that, even though some methods of transportation may be more efficient on a per ton-mile basis, if the transport distances are great enough, the overall impacts may be greater than those of local production.

Factors Affecting Aggregate Demand

Several factors may influence aggregate demand. In periods of high economic growth, demand may increase, depleting permitted reserves more rapidly than expected. Large projects, such as the construction or maintenance of major infrastructure, or rebuilding after a disaster such as an earthquake could also deplete permitted reserves more rapidly. Increased demand from neighboring regions with dwindling or depleted permitted reserves may also accelerate the depletion of permitted reserves in a study area. Conversely, a period of declining economy or of low economic growth, such as that during the recession of 2007 to 2009 and the subsequent slow economic recovery, can reduce demand for a period of time, extending the life of permitted reserves. In some cases, importation of aggregate from other areas may extend the life of a region's permitted reserves.

SUMMARY AND CONCLUSIONS

Aggregate is essential to the needs of modern society, providing material for the construction and maintenance of roadways, dams, canals, buildings, and other parts of California's infrastructure. Aggregate is also found in homes, schools, hospitals, and shopping centers.

In the 30-year period from 1987 to 2016, Californians consumed an average of about 180 million tons of construction aggregate (all grades) per year or about 5.3 tons per person per year. Demand for aggregate is expected to increase as the state's population continues to grow and infrastructure is maintained, improved, and expanded. For example, the Road Repair and Accountability Act of 2017 (SB1) will provide approximately 5 billion dollars annually for a variety of maintenance, rehabilitation, and other transportation related projects over the next decade. Because aggregate is a low unit-value, high-bulk-weight commodity, it must be obtained from nearby sources to minimize the dollar cost to the aggregate consumer and other environmental and economic costs associated with transportation.

Comparing regional needs to available reserves and resources demonstrates the important aggregate resource issues facing lead agencies in California. These issues include the need to plan carefully for the use of lands containing these resources and the need to consider the permitting of additional aggregate resources before currently permitted deposits are depleted.

Increasingly, as existing permitted aggregate supplies are depleted, local land-use decisions regarding aggregate resources are having regional impacts that go beyond local jurisdictional boundaries. Planning for future construction aggregate needs in our communities should take into consideration not only the needs of the community, but also the needs of the region and neighboring regions. Importing aggregate from neighboring regions leads to more rapid depletion of reserves/resources in those regions, potentially contributing to price increases or aggregate shortages in those regions.

In addition to the greater economic costs, there are often increased environmental and societal costs associated with the import of aggregate when compared to local production. The environmental impacts include higher emissions of greenhouse gases, such as CO_2, and air pollution. The societal impacts include increased traffic congestion and road maintenance due to increased truck traffic. In the case of imports, these environmental and societal impacts occur both within the importing region and in the neighboring regions that supply the material and through which the material is transported. Finally, reliance on imports places responsibility and authority for permitting related to the local aggregate supply in the hands of decision makers in other jurisdictions.

For more than 40 years, under SMARA, CGS has conducted on-going studies that identify and evaluate aggregate resources throughout the state. Map Sheet 52 (2018) is an updated summary of supply and demand data from these studies. The map presents a statewide overview of projected future aggregate needs and currently permitted reserves.

The following conclusions can be drawn from Map Sheet 52 (2018) and this accompanying report:

- In the next 50 years, the study areas identified on Map Sheet 52 (2018) will need approximately 11 billion tons of aggregate.
- The study areas shown on Map Sheet 52 currently have about 7.6 billion tons of permitted reserves, which is about 69 percent of the total projected 50-year aggregate demand identified for these study areas. This is about 10 percent of the total aggregate resources located within the study areas.
- One aggregate study area is projected to have 10 or fewer years of permitted aggregate reserves remaining as of January 2017 (San Fernando Valley / Saugus Newhall area).
- Seven aggregate study areas have between 11 and 20 years of aggregate reserves remaining.
- Ten aggregate study areas have between 21 and 30 years of aggregate reserves remaining.
- Four aggregate study areas have between 31 and 40 years of aggregate reserves remaining.
- Two aggregate study areas have between 41 and 50 years of aggregate reserves remaining.
- Five aggregate study areas (Bakersfield, Fresno, and Yuba City-Marysville P-C regions, and Nevada and Placer counties) have more than 50 years of aggregate reserves remaining.

The information presented on Map Sheet 52 (2018) and in the referenced reports is provided to assist land use planners and decision makers in identifying those areas containing construction aggregate resources, and to estimate potential future demand for these resources in different regions of the state. This information is intended to help planners and decision makers balance the need for construction aggregate with the many other competing land use issues in their jurisdictions, and to provide for adequate supplies of construction aggregate to meet future needs.

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California Department of Finance, Demographic Research Unit, *Total Estimated and Projected Population for California and Counties: July 1, 2010 to July 1, 2060 in 1-year increments.* January 2018.

APPENDIX: MINERAL LAND CLASSIFICATION REPORTS BY THE CALIFORNIA GEOLOGICAL SURVEY (Special Reports and Open-File Reports, with information on aggregate resources)

SPECIAL REPORTS

SR 132: Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the Yuba City-Marysville Production-Consumption Region. By Habel, R.S., and Campion, L.F., 1986.

*SR 143: Part I: Mineral Land Classification of the Greater Los Angeles Area: Description of the Mineral Land Classification Project of the Greater Los Angeles Area._By Anderson T. P., Loyd, R.C., Clark, W.B., Miller, R.M., Corbaley, R., Kohler, S.L., and Bushnell, M.M., 1979.

*SR 143: Part II: Mineral Land Classification of the Greater Los Angeles Area: Classification of Sand and Gravel Resource Areas, San Fernando Valley Production-Consumption Region. By Anderson T.P., Loyd, R.C., Clark, W.B., Miller, R.M., Corbaley, R., Kohler, S.L., and Bushnell, M.M., 1979.

*SR 143: Part III: Mineral Land Classification of the Greater Los Angeles Area: Classification of Sand and Gravel Resource Areas, Orange County-Temescal Valley Production-Consumption Region. By Miller, R.V., and Corbaley, R., 1981.

*SR 143: Part IV: Mineral Land Classification of the Greater Los Angeles Area: Classification of Sand and Gravel Resource Areas, San Gabriel Valley Production-Consumption Region. By Kohler, S.L., 1982.

*SR 143: Part V: Mineral Land Classification of the Greater Los Angeles Area: Classification of Sand and Gravel Resource Areas, Saugus-Newhall Production-Consumption Region and Palmdale Production-Consumption Region. By Joseph, S.E, Miller, R.V., Tan, S.S., and Goodman, R.W., 1987.

*SR 143: Part VI: Mineral Land Classification of the Greater Los Angeles Area: Classification of Sand and Gravel Resource Areas, Claremont-Upland Production-Consumption Region. By Cole, J.W., 1987.

*SR 143: Part VII: Mineral Land Classification of the Greater Los Angeles Area: Classification of Sand and Gravel Resource Areas, San Bernardino Production-Consumption Region. By Miller, R.V., 1987.

*SR 145: Part I: Mineral Land Classification of Ventura County: Description of the Mineral Land Classification Project of Ventura County. By Anderson, T.P., Loyd, R.C., Kiessling, E.W., Kohler, S.L., and Miller, R.V., 1981.

*SR 145: Part II: Mineral Land Classification of Ventura County: Classification of the Sand, Gravel, and Crushed Rock Resource Areas, Simi Production-Consumption Region. By Anderson, T.P., Loyd, R.C., Kiessling, E.W., Kohler, S.L., and Miller, R.V., 1981.

*SR 145: Part III: Mineral Land Classification of Ventura County: Classification of the Sand and Gravel, and Crushed Rock Resource Areas, Western Ventura County Production-Consumption Region. By Anderson, T.P., Loyd, R.C., Kiessling, E.W., Kohler, S.L., and Miller, R. V., 1981.

*SR 146: Part I: Mineral Land Classification: Project Description: Mineral Land Classification for Construction Aggregate in the San Francisco-Monterey Bay Area. By Stinson, M.C., Manson, M.W., and Plappert, J.J., 1987.

*SR 146: Part II: Mineral Land Classification: Aggregate Materials in the South San Francisco Bay Production-Consumption Region. By Stinson, M.C., Manson, M.W., and Plappert, J.J., 1987.

*SR 146: Part III: Mineral Land Classification: Aggregate Materials in the North San Francisco Bay Production-Consumption Region. By Stinson, M.C., Manson, M.W., and Plappert, J.J., 1987.

*SR 146: Part IV: Mineral Land Classification: Aggregate Materials in the Monterey Bay Production-Consumption Region. By Stinson, M.C., Manson, M.W., and Plappert, J.J., 1987.

*SR 147: Mineral Land Classification: Aggregate Materials in the Bakersfield Production-Consumption Region. By Cole, J.W., 1988.

*SR 153: Mineral Land Classification: Aggregate Materials in the Western San Diego County Production-Consumption Region. By Kohler, S.L., and Miller, R.V., 1982.

SR 156: Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the Sacramento-Fairfield Production-Consumption Region. By Dupras, D.L., 1988.

*SR 158: Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region. By Cole, J.W., and Fuller, D.R., 1986.

*SR 159: Mineral Land Classification: Aggregate Materials in the Palm Springs Production-Consumption Region. By Miller, R.V., 1987.

*SR 160: Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the Stockton-Lodi Production-Consumption Region. By Jensen, L.S., and Silva, M.A., 1989.

*SR 162: Mineral Land Classification: Portland Cement Concrete Aggregate and Active Mines of All Other Mineral Commodities in the San Luis Obispo-Santa Barbara Production-Consumption Region. By Miller, R.V., Cole, J.W., and Clinkenbeard, J.P., 1989.

SR 164: Mineral Land Classification of Nevada County, California. By Loyd, R.C., and Clinkenbeard, J.P., 1990.

*SR 165: Mineral Land Classification of the Temescal Valley Area, Riverside County, California. By Miller, R.V., Shumway, D.O., and Hill, R.L., 1991.

SR 173: Mineral Land Classification of Stanislaus County, California. By Higgins, C.T., and Dupras, D.L., 1993.

SR 198: Update of Mineral Land Classification for Portland Cement Concrete-Grade Aggregate in the Palm Springs Production-Consumption Region, Riverside County, California. Busch, L.L., 2007.

SR 199: Update of Mineral Land Classification for Portland Cement Concrete-Grade Aggregate in the Stockton-Lodi Production-Consumption Region, San Joaquin and Stanislaus Counties, California. Smith, J.D. and Clinkenbeard J.P., 2012.

SR202 Update of Mineral Land Classification for Portland Cement Concrete-Grade Aggregate in the Claremont-Upland Production-Consumption Region, Los Angeles and San Bernardino Counties, California. Miller, R.V. and Busch, L.L., 2007.

SR 205 Update of Mineral Land Classification of Aggregate Resources in the North San Francisco Bay P-C Region: Sonoma, Napa, and Marin Counties and Southwestern Solano County, California. Miller, R.V. and Busch, L.L., 2013

SR 206 Update of Mineral Land Classification for Portland Cement Concrete-Grade Aggregate in the San Bernardino Production-Consumption Region, San Bernardino and Riverside Counties, California. Miller, R.V. and Busch, L.L., 2008.

SR 209 Update of Mineral Land Classification for Portland Cement Concrete-Grade Aggregate in the San Gabriel Valley Production-Consumption Region, Los Angeles County, California. Kohler, S.L., 2010.

SR 210 Update of Mineral Land Classification: Aggregate Materials in the Bakersfield Production-Consumption Region, Kern County, California. Busch, L.L., 2009.

SR 215 Update of Mineral Land Classification: Aggregate Materials in the San Luis Obispo-Santa Barbara Production-Consumption Region, California. Busch, L.L. and Miller, R.V., 2011.

SR 231 Update of Mineral Land Classification for Portland Cement Concrete-Grade Aggregate in the Temescal Valley Production Area, Riverside County, California. Miller, R.V. and Busch, L.L., 2014.

SR 240 Update of Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the Western San Diego County Production-Consumption Region, California. Gius, F.W., Busch, L.L., and Miller, R.V. 2017.

* These Mineral Land Classification reports have been updated and are not shown on the index map (lower left-hand corner of Map Sheet 52).

OPEN-FILE REPORTS

OFR 92-06: Mineral Land Classification of Concrete Aggregate Resources in the Barstow-Victorville Area. By Miller, R.V., 1993.

OFR 93-10: Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties, California: Part I - Ventura County. By Miller, R.V., 1993.

OFR 94-14: Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties, California: Part II - Los Angeles County. By Miller, R.V., 1994.

OFR 94-15: Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties, California: Part III - Orange County. By Miller, R.V., 1995.

OFR 95-10: Mineral Land Classification of Placer County, California. By Loyd, R.C., 1995.

OFR 96-03: Update of Mineral Land Classification: Aggregate Materials in the South San Francisco Bay Production-Consumption Region. By Kohler-Antablin, S.L., 1996.

*OFR 96-04: Update of Mineral Land Classification: Aggregate Materials in the Western San Diego County Production-Consumption Region. By Miller, R.V., 1996.

OFR 97-01: Mineral Land Classification of Concrete Aggregate Resources in the Tulare County Production-Consumption Region, California. By Taylor, G.C., 1997.

OFR 97-02: Mineral Land Classification of Concrete-Grade Aggregate Resources in Glenn County, California. By Shumway, D.O., 1997.

OFR 97-03: Mineral Land Classification of Alluvial Sand and Gravel, Crushed Stone, Volcanic Cinders, Limestone, and Diatomite within Shasta County, California. By Dupras, D.L, 1997.

OFR 99-01: Update of Mineral Land Classification: Aggregate Materials in the Monterey Bay Production-Consumption Region, California. By Kohler-Antablin, S.L., 1999.

OFR 99-02: Update of Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region, California. By Youngs, L.G. and Miller, R.V., 1999.

OFR 99-08: Mineral Land Classification of Merced County, California. By Clinkenbeard, J.P., 1999.

OFR 99-09: Mineral Land Classification: Portland Cement Concrete-Grade Aggregate and Clay Resources in Sacramento County, California. By Dupras, D.L., 1999.

OFR 2000-03: Mineral Land Classification of El Dorado County, California. By Busch, L. L., 2001

OFR 2000-18: Mineral Land Classification of Concrete-Grade Aggregate Resources in Tehama County, California. By Foster, B.D., 2001

* These Mineral Land Classification reports have been updated and are not shown on the index map (lower left-hand corner of Map Sheet 52).

From:	David H. Weibel
To:	Randall , David A.
Cc:	Kevin P. Bundy; Carmen J. Borg; Shanthi Chackalackal; sweaver@riverparkway.org
Subject:	Comments on CEMEX Project, Email 1 of 2
Date:	Monday, March 10, 2025 5:08:53 PM
Attachments:	image001.png SJRPCT Comment Letter re Rockfield Quarry Modification Project - 3-10-25.pdf

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Attached are comments by the San Joaquin River Parkway & Conservation Trust, Inc. regarding the Rockfield Quarry Modification Project.

This is the first of two e-mails on this subject; the second will follow shortly.

Please confirm receipt of this e-mail via return message.

Thank you,

David Weibel
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March 10, 2025

Via E-Mail

David Randall, Senior Planner
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Works and Planning Development Services
and Capital Projects Division 2220 Tulare
Street, Sixth Floor Fresno, CA 93721
E-Mail: drandall@fresnocountyca.gov

Re: Rockfield Quarry Modification Project Environmental Impact Report No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667; SCH# 2020060123

Dear Mr. Randall:

This firm represents the San Joaquin River Parkway & Conservation Trust, Inc. ("the Trust") in connection with the proposed Rockfield Quarry Modification Project ("Project"). We submit these comments to inform the County that this draft Environmental Impact Report ("DEIR"), is inadequate under the California Environmental Quality Act ("CEQA"), Public Resources Code § 21000 et seq., and the CEQA Guidelines, California Code of Regulations, title 14, § 15000 et seq. ("CEQA Guidelines"). Comment 58-1

The Project as proposed will have significant, adverse impacts on both the natural and the human environment in Fresno County. These impacts include, but are not limited to, potentially devastating effects on: local hydrology and water quality, habitat and movement corridors for both terrestrial and aquatic wildlife, local traffic, air quality, and noise. But none of these impacts or the inconsistencies of the Project can be discerned from reading the DEIR. With regard to each of CEQA's substantive requirements—a complete and stable project description, a thorough analysis of significant impacts, identification of feasible and enforceable mitigation measures, an analysis of a reasonable range of alternatives—the DEIR falls woefully short. As a result, the DEIR fails to meet CEQA's fundamental purpose of providing disclosure to the public of the Project's environmental effects. The County and the applicant need to start over—beginning with Comment 58-2 Comment 58-3

revised Project objectives that allow for consideration of a reasonable range of alternatives that would be consistent with the General Plan—and prepare and recirculate a new, legally adequate DEIR. Comment 58-3 Cont.

This letter is submitted along with the reports prepared by Greg Kamman, Hydrogeologist with CBEC Eco Engineering, attached as Exhibit A ("CBEC Report"); Jeff Davis, Biologist with Colibri Environmental, attached as Exhibit B ("Colibri Report"); and Jeremy Decker, Acoustical Engineer with Salter and Associates attached as Exhibit C ("Salter Report"). We respectfully refer the County to the aforementioned attached reports, both here and throughout these comments, for further detail and discussion of the DEIR's inadequacies. We request that the County reply to each of the comments in this letter and to each of the comments in the attached reports. Comment 58-4

I. Introduction and Background

The Project site is located within Fresno County's jurisdiction on land designated as 'Agricultural' and falls within the San Joaquin River Corridor Overlay, which allows agricultural activities with incidental homesites, sand and gravel extraction, various recreational activities, wildlife habitat areas, and uses which serve the San Joaquin River Parkway. Fresno County General Plan at 2-25 and DEIR at 2-2. The Project site is zoned AE-20 Exclusive Agriculture, 20-acre minimum parcel size, which allows "surface mining" operations but not hard rock mining. We note that County General Plan Table LU-1 at p. 2-25 similarly allows "Surface Mining Operations" in AE and other agricultural zones, but omits any reference to hard rock mining. Comment 58-5

The proposed Project includes: two Conditional Use Permits (one to expand surface mining and processing for another 30 years and one to allow hard rock mining over a period of 100 years; approval of a Surface Mining and Reclamation Plan (SMRP) and the associated Financial Assurance Mechanism (FAM), a Landscape Plan (for revegetation), right-of-way permits; and a host of discretionary permits from resource agencies. DEIR at 2-52 and 2-53. The Project would expand extraction of material by almost double (from the current 1.4 million tons per year to 3 million tons) and would allow a total extraction of approximately 300 million tons of material from the plant and quarry sites over a period of 100 years. DEIR at ES-4 and 2-5. Comment 58-6

The project site has been mined by various companies for many decades. The community anticipated that operations would be completed sometime between 2005 and 2008 and the site restored in accordance with the Project Reclamation Plan. Instead, the County granted several extensions and operations continue today. Now, CEMEX proposes to extend and expand operations for *another* 100 years. The proposed Project Comment 58-7 Comment 58-8

would result in an enormous increase in the amount of material to be excavated and would include a substantial change from mining alluvial sands and gravel (i.e., surface mining) to hard rock mining (blasting for granite). CEMEX proposes to mine to a depth of 600 feet, which will result in much worse impacts to both human residents and wildlife and to the river and riparian ecosystems as a whole. As discussed throughout this letter, the DEIR fails to adequately evaluate the project's impacts, fails to identify feasible mitigation measures, and presents an inadequate alternatives analysis.

Comment 58-8 Cont.

Comment 58-9

The DEIR for the proposed Project suffers from several major problems. First, the DEIR generally downplays the importance of the Project site as part of the San Joaquin River Restoration Program and the site's location adjacent to conserved lands including Ledger Island to the west, Lost Lake County Park to the north, and Ball Ranch and Sumner Peck Ranch to the south. As discussed in detail below, the Project's expansion of operations, especially the change to allow hard rock mining, has the potential to result in significant, long-term impacts to both people and wildlife, yet the DEIR fails to conduct a thorough analysis of impacts to these areas.

Comment 58-10

This Project will have serious long-term consequences, not only for area residents, but for the hydrology of the river and the ecology of the region. Those consequences include, but are not limited to: potentially devastating effects related to changes in drainage patterns and river flow; impacts to water quality; impacts to groundwater recharge and groundwater quality; impacts to recreational use in adjacent areas, impacts to multiple sensitive species and their habitats; visual impacts; increased truck traffic; increased noise; and increased air pollution. Moreover, as the DEIR acknowledges, the Project would result in significant, unmitigable impacts to visual resources. DEIR at ES-9.

Comment 58-11

In addition, as discussed in more detail below, the DEIR presents overly narrow project objectives that preclude uses other than the project being proposed, as well as an incomplete description of the project setting and of the project itself. It also substantially understates the severity and extent of a range of environmental impacts and fails to provide adequate mitigation. These inadequacies require that the DEIR be revised and recirculated so that the public and decision-makers are provided with a proper analysis of the Project's significant environmental impacts and feasible mitigation for those impacts. *See* CEQA Guidelines § 15002(a)(1) (listing as one of the "basic purposes" of CEQA to "[i]nform governmental decision makers and the public about the potential, significant environmental effects of proposed activities").

Comment 58-12

To ensure that the public and the County's decision-makers have adequate information to consider the effects of the proposed Project—as well as to comply with the

Comment 58-13

law—the County must require revisions in the Project to make it compliant with the General Plan and other applicable plans, then prepare and recirculate a revised DEIR that properly describes the Project, analyzes its impacts, and considers meaningful alternatives and mitigation measures that would help ameliorate those impacts.

Comment 58-13 Cont.

II. The DEIR's Flawed Description of the Existing Setting and the Project Does Not Permit Meaningful Public Review of the Project.

Comment 58-14

A. Project Setting

Accurate and complete information pertaining to the setting of the project and surrounding uses is critical to an evaluation of a project's impact on the environment. *San Joaquin Raptor/Wildlife Center v. Stanislaus County*, 27 Cal.App.4th 713, 728 (1994); *see also Friends of the Eel River v. Sonoma County Water Agency*, 108 Cal.App.4th 859, 875 (2003) (incomplete description of the Project's environmental setting fails to set the stage for a discussion of significant effects). Here, the DEIR's deficiencies in describing the Project's setting undermine its adequacy as an informational document.

The DEIR fails to present important contextual information related to biological and hydrological resources on the Project site. For instance, as described by American Rivers:

> [T]he health of the San Joaquin River has suffered the impacts of hundreds of dams, levees stretching thousands of miles, and countless water diversions. More than 95 percent of floodplain and freshwater tidal marsh habitat has been converted to development or agriculture. Once-iconic salmon runs teeter on the brink of extinction. The problems are so acute that American Rivers named the San Joaquin River one of America's Most Endangered Rivers® in 2014. In 2016, it rose to the No. 2 position on the list.[1]

The majority of the proposed Project site is located in the flood plain for the San Joaquin River. The plant site is located approximately 2,800 feet from the River and encroaches on the San Joaquin River Willow Unit of the San Joaquin River Ecological Reserve managed by the CA Department of Fish and Wildlife. The Plant site is

Comment 58-15

[1] American Rivers, San Joaquin River, at https://www.americanrivers.org/river/sacramento-and-san-joaquin-rivers/ (attached as Ex. D).

surrounded by the Willow Unit, which is adjacent to Ball Ranch, conservation lands owned by the State of California San Joaquin River Conservancy (SJR Conservancy) and operated by the Trust. The quarry site is adjacent to Lost Lake Recreation Area, which is land purchased by the Wildlife Conservation Board[2] and operated by the County; and Sumner Peck Ranch, which is owned by the SJR Parkway & Conservation Trust, Inc. Ledger Island, which is also owned by the SJR Conservancy, is located immediately to the southwest of the quarry site.

Comment 58-15 Cont.

Furthermore, the Project site is located within Reach 1A of the San Joaquin River Restoration Program ("SJR Restoration Program"), which is a comprehensive, long-term effort to "restore flows to the San Joaquin River from Friant Dam to the confluence of the Merced River and restore a self-sustaining Chinook salmon fishery in the river while reducing or avoiding adverse water supply impacts from Restoration Flows."[3] The restoration came out of a legal settlement following an 18-year lawsuit and was signed into federal law as the SJR Restoration Act in 2009. Pub. L. 111-11, 123 Stat. 1349 (Mar. 30, 2009). Both the Federal and State Governments have invested substantial effort and funds to establish and maintain the Restoration Program, and the result is a successful fishery for a species widely protected under laws including the federal Endangered Species Act (ESA).[4]

Comment 58-16

Despite the importance of the SJR Restoration Program, the DEIR mentions it only twice. It is mentioned once in an isolated sentence about the reintroduction of Chinook salmon under the program (DEIR at 4.4-63), and in another instance where the DEIR evaluates the Project's consistency with SJR Parkway Master Plan Policies. DEIR 4.11-46. In both cases, the DEIR fails to provide any context about the importance of the habitat areas in and around the River to the success of the Restoration Program. The DEIR also fails to disclose that under the federal ESA, San Joaquin River Spring-Run Chinook are listed as an experimental population. *See* 78 Fed. Reg. 79622 (Dec. 13,

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[2] The Wildlife Conservation Board is a state grant-making agency dedicated to safeguarding California's spectacular biological diversity and wild spaces for the benefit of present and future generations. Cal. Wildlife Conservation Board, About WCB, at https://wcb.ca.gov/About.

[3] *See* San Joaquin River Restoration Program, Annual Report (2007) (attached as Ex. E); *see also generally* San Joaquin River Restoration Program, at https://www.restoresjr.net/.

[4] *See, e.g.*, 64 Fed. Reg. 50394 (Sept. 16, 1999) (listing Central Valley Spring-Run Chinook salmon as threatened under the federal ESA); Cal. Dept. of Fish & Wildlife, Chinook Salmon, at https://wildlife.ca.gov/Conservation/Fishes/Chinook-Salmon (attached as Ex. F).

2013). Finally, the DEIR does not mention steelhead at all, even though San Joaquin River steelhead are listed as threatened in the Project area. 50 C.F.R. § 223.102(a)(16); 71 Fed. Reg. 834 (Jan. 5, 2006). Comment 58-16 Cont.

Perhaps most egregiously, the DEIR fails to adequately describe the existing hydrologic setting of the site and the vicinity. Specifically, the DEIR fails to accurately describe baseline groundwater conditions especially at the quarry site. Kamman Report at 1. This is important information from which to establish a baseline. As explained in the Kamman report, without a proper description of baseline conditions, the DEIR is unable to provide an adequate analysis of Project-related increases or decreases in groundwater recharge relative to existing conditions. *Id.* A revised analysis must include a Hydrology and Water Quality section that adequately describes the hydrologic and hydraulic setting. Comment 58-17

B. Project Description

Under CEQA, the inclusion in the EIR of a clear and comprehensive description of the proposed project is critical to meaningful public review. *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 193 ("*Inyo II*"). The court in *Inyo II* explained why a thorough project description is necessary: Comment 58-18

> A curtailed or distorted project description may stultify the objectives of the reporting process. Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost, consider mitigation measures, assess the advantage of terminating the proposal (i.e., the "no project" alternative) and weigh other alternatives in the balance.

Id. at 192-93. Thus, "[a]n accurate, stable and finite project description is the sine qua non of an informative and legally sufficient EIR." *Santiago County Water District v. County of Orange* (1981) 118 Cal.App.3d 818, 830.

Here, the DEIR lacks sufficient detail on specific activities needed to mine and process the aggregate material. The DEIR references these activities at only the most general level. *See e.g.*, DEIR at 2-36 ("The hardrock would then be mined in approximately 50-foot-high benches by drilling and blasting of the hardrock material to a depth of approximately 600 feet bgs using a drill rig and truck with blasting supplies" but provides no information on the amount of area to be disturbed each day); at 2-39 ("If necessary, secondary breakage of oversize material within the quarry pit would be accomplished by conventional methods including, but not limited to, drop ball or hydraulic breaker," but provides no information on either one of these types of equipment

or the process involved with each); at 2-42 ("The estimated borehole depth at the Quarry Site quarry would be approximately 50 feet. Boreholes would be drilled using a percussion drill rig" but provides no information on the length of time the drilling process to prepare for each blast day would take). Comment 58-18 Cont.

These gaps in the project description are important because they implicate other inadequate analysis in the DEIR. For example, the amount of daily ground disturbance implicates the air quality analysis; and the use of drop balls or hydraulic breakers and the amount of time required for drilling boreholes in preparation for each blast implicate the noise analysis. On the latter point, the DEIR states that blasting would occur up to twice a week, but if drilling boreholes for explosives took a day to complete, receptors would suffer increased noise from drilling and blasting four days a week. Therefore, the DEIR fails to give the reader a clear sense of what these activities entail and how these activities would affect particulate matter emissions and noise impacts to nearby receptors. Comment 58-19

Moreover, the DEIR indicates that the Project has a lighting design, but fails to provide it. DEIR at 2-40. Instead, it states only that "[H]igh pressure sodium and/or cut-off fixtures (or equivalent International Dark-Sky Association [IDA]-approved fixtures) would be used instead of mercury-vapor fixtures," and that illumination would be confined to the Quarry Site. *Id.* If the Project has a lighting design, it should have been disclosed as part of this DEIR so that the public and decision-makers can understand the planned illumination for the Quarry Site. Lighting on the site would affect light and glare experienced by nearby residents, yet these impacts cannot be properly evaluated because the lighting design has not been included. Comment 58-20

III. The DEIR Fails to Analyze and Mitigate the Project's Significant Environmental Impacts. Comment 58-21

CEQA requires that an EIR be detailed, complete, and reflect a good faith effort at full disclosure. CEQA Guidelines § 15151. The document should provide a sufficient degree of analysis to inform the public about the proposed project's adverse environmental impacts and to allow decision-makers to make intelligent judgments. *Id.* Consistent with this requirement, an EIR must contain "extensive, detailed evaluations of the impacts of the proposed plans on the environment in its current state" in order to serve its function as an "informative document." *Environmental Planning and Information Council of Western El Dorado County v. County of El Dorado*, 131

Cal.App.3d 350, 358 (1982) (finding an EIR for a general plan amendment inadequate where the document did not make clear the effect on the physical environment). Comment 58-21 Cont.

Meaningful analysis of impacts effectuates one of CEQA's fundamental purposes: to "inform the public and responsible officials of the environmental consequences of their decisions before they are made." *Laurel Heights Improvement Ass'n v. Regents of the University of California*, 6 Cal.4th 1112, 1123 (1993) (*Laurel Heights II*). To accomplish this purpose, an EIR must contain facts and analysis, not just an agency's bare conclusions. *Citizens of Goleta Valley v. Board of Supervisors*, 52 Cal.3d 553, 568 (1990). Nor may an agency defer its assessment of important environmental impacts until after the project is approved. *Sundstrom v. County of Mendocino*, 202 Cal.App.3d 296, 306-07 (1988). An EIR's conclusions must be supported by substantial evidence. *Laurel Heights Improvement Ass'n v. Regents of the University of California*, 47 Cal.3d 376, 409 (1988) (*Laurel Heights I*). Comment 58-22

CEQA does not allow a lead agency to defer critical studies regarding environmental impacts until after project approval. *See Sundstrom*, 202 Cal.App.3d 296. Nor may a lead agency satisfy CEQA by approving a project subject to conditions requiring the applicant to prepare future studies and mitigation measures, because in so doing the agency would be improperly delegating its legal responsibility to assess a project's environmental impact. *Id.* at 307. In contrast, CEQA requires the lead agency itself to prepare or contract for the preparation of impact assessments (citing CEQA § 21082.1) that reflect the agency's "independent judgement." *Id.* The fundamental concern underlying *Sundstrom* was that even if the required conditions of project approval had been adequate, the need for post-approval studies demonstrated the inadequacy of the County's environmental review prior to project approval. *Id.*

Finally, the DEIR may not avoid conducting a thorough analysis of the Project's impacts under the assumption that such impacts would be temporary. CEQA requires analysis of temporary or short-term impacts. CEQA Guidelines § 15126.2(a) (agency must analyze both short- and long-term impacts). CEQA defines a "significant effect on the environment" as "a substantial or potentially substantial adverse change in the environment." Pub. Resources Code § 21068. The CEQA Guidelines expand on the statute and define "significant effect on the environment" as:

> a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance.

CEQA Guidelines § 15382. As a leading CEQA treatise explains,

Comment 58-22 Cont.

> An effect on the environment need not be "momentous" or "important" to meet the CEQA test for significance. . The term "significant" covers a spectrum ranging from "not trivial" through "appreciable" to "important" and even "momentous." See *No Oil, Inc. v City of Los Angeles* (1974) 13 Cal.3d 68, 83. An agency has discretion to find a project's impacts insignificant on the basis of the scale of the project, particularly when the project's impacts are indirect and cannot reliably be predicted. *Save the Plastic Bag Coalition v City of Manhattan Beach* (2011) 52 Cal.4th 155. An effect need not be either long term or permanent to be significant, but duration is a factor that may affect the significance of an environmental impact. *Running Fence Corp. v Superior Court* (1975) 51 Cal.App.3d 400, 416.

1 Kostka and Zischke, Practice Under the California Environmental Quality Act (Cont.Ed.Bar 2024) §6.44. As documented below, the Rockfield Modification Project fails to identify, analyze, or support with substantial evidence its conclusions regarding the Project's significant environmental impacts.

Comment 58-23

A. The DEIR's Evaluation of Hydrology and Water Quality Impacts is Inadequate.

The DEIR's analysis of the Project's impacts to hydrology, water quality, and flooding is inadequate because it: (a) presents an inaccurate hydraulic analysis; (b) presents an inaccurate estimate of impacts on groundwater resources; (c) fails to analyze downstream impacts; (d) fails to support its conclusions with the necessary facts and analysis; and (e) fails to identify mitigation capable of minimizing the Project's significant environmental impacts.

Comment 58-24

Greg Kamman, Senior Ecohydrologist with CBEC Eco Engineering, reviewed the Rockfield Modification Project DEIR hydrology and water quality analysis and the document's hydrological appendices. His report (CBEC Report), attached as Appendix A, provides a detailed evaluation of the DEIR's Hydrology and Water Quality section. We summarize some of the most critical points of that report below.

Comment 58-25

1. The DEIR Presents an Inaccurate Hydraulic Analysis of the Project's Flood Impacts.

As explained in the CBEC Report, the DEIR fails to accurately analyze the Project's potential impacts related to flooding. CBEC Report at 2. The DEIR's analysis of Project-related flood impacts used the Federal Emergency Management Agency ("FEMA")100 -year flow rate estimate to conclude that that existing floodplain does not encroach into the Quarry site or the western portion of the Plant site. *Id.* However, the DEIR's approach to the analysis failed to account for the long-term climate change effects on the River flood flow rates at both sites. *Id.* When the analysis is conducted using more recent data models by the California Department of Water Resources ("DWR") that include climate change information, the result indicates drastically higher 100-year flow rates.

The related DWR report discussed in the CBEC Report[5] states that under climate change, peak flows in the snow-dominated upper San Joaquin River watershed will shift to earlier in the winter and spring. CBEC Report at 2. This change in peak flows will result in high flow events (like the 100-year flow) that cannot be fully contained by Lake Millerton and will be released downstream. *Id.* Specifically, future (year 2072) 100-year flow rates will increase to 126,800 cubic feet per second because of climate change[6]. This is a flow rate that is 179% of the FEMA estimate used in the DEIR. *Id*.

According to the CBEC Report, an increase of flow rate of this magnitude would encroach into and inundate both the Quarry and Plant sites. CBEC Report at 2. Importantly, the estimated increase in 100-yr flood flow rates under climate conditions represents a condition only halfway through the life of the Project. *Id.* In fact, 100-year flood flow rates are likely to continue to rise even further through the second 50 years of proposed Project operations. *Id.* Therefore, the DEIR's analysis of flood hazards evaluating the potential impacts from encroachment of the Project site into the floodplain is erroneous.

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[5] Nemeth, K., Tjernell, K.A., and Lippner, G. (2021). *Revised Draft Central Valley Flood Protection Plan Conservation Strategy 2022 Update*. California Department of Water Resources.

[6] The related DWR report states that under climate change, peak flows in the snow-dominated upper San Joaquin River watershed will shift to earlier in the winter and spring and high flow events like the 100-year flow cannot be fully contained by Lake Millerton and will be released downstream. CBEC Report at 2.

Comment 58-26

2. The DEIR's Analysis of Groundwater-Surface Water Interaction at the Project Site Is Inaccurate and Unsupported.

As the DEIR explains, understanding the interaction between groundwater on the site and surface water during different river stages[7] is important because when the water level in the river is high enough that the water surface is above the adjacent groundwater table surface, there is seepage of water from the river into groundwater flowing towards the quarry. DEIR Appendix G-5 at 20-21 and CBEC Report at 3. The DEIR's analysis inappropriately uses stream gage data from below Friant Dam, which is located 4.0 miles and 6.5 miles from the Quarry site and Plant sites respectively, to compare river stages to on-site groundwater levels. CBEC Report at 3. As explained in the CBEC Report, extrapolating data from these distances results is an invalid comparison because of differences in channel geometry and water flow between the sites. *Id.* Instead, to make an accurate comparison between river water levels and groundwater levels at the Quarry and Plant Sites, the DEIR should have included monitoring of channel geometry and flow differences immediately adjacent to the project sites. The DEIR concludes that there is no correlation between river stage and pond water levels at the Quarry site location; however, this conclusion is unsupported. *Id.*

Until the analysis is revised to correct the aforementioned flaws, the DEIR's conclusions regarding the interaction between groundwater and surface water, and the corresponding potential for river water to seep into the Quarry site, are unsupported and the DEIR is inadequate under CEQA.

Comment 58-27

3. The DEIR Fails to Provide Evidence to Support Mitigation Measures Related to Lowering Groundwater Levels.

The DEIR purportedly analyzes the groundwater drawdown that would occur in the areas surrounding the Quarry Site due to dewatering of the quarry pit. DEIR Impact 4.10-10 at 4.10-105. The DEIR indicates that because the alluvium has already been removed from the Quarry site, no further effects related to dewatering (such as seepage of alluvial groundwater into the mining pit) can occur. *Id.* As explained in the CBEC report, this statement is incorrect because alluvial groundwater in off-site areas adjacent to and surrounding the Quarry site would still seep into the mining pit. CBEC Report at 4.

Nonetheless, the DEIR concludes that impacts to groundwater supplies related to the development of a large cone of depression radiating around the site due to pit dewatering and groundwater seepage into the Quarry site mining pit would be potentially

[7] The water level in the River, in this case, above the alluvium on the river bed.

Comment 58-27 Cont.

significant. DEIR at 4.10-107 and 4.10-108. In addition, the DEIR concludes that potential impacts to the groundwater supply wells will occur "due to the local decrease in static groundwater levels as a result of the flow of groundwater to the proposed quarry pit." *Id*.

To mitigate these impacts of lowered groundwater levels in the cone of depression and increased groundwater seeping into the mining areas, the DEIR proposes Mitigation Measure 4.10-10a, which prescribes preparation of a Groundwater Adaptive Management Program. *Id.* The project includes recharge trenches along portions of the outer edge of the mining pit. As described in the CBEC report, water from mine pit dewatering would be discharged into the recharge trenches and various recharge ponds with the idea that 50% of the water delivered to the recharge trenches would recharge the underlying groundwater and reduce the amount of drawdown by fifty percent, reducing the amount of groundwater level decline around the pits to less than significant levels. CBEC Report at 4.

The DEIR does not substantiate the benefits and effectiveness of the recharge trenches. *Id*. As explained in the CBEC Report, the DEIR presents no data or analysis to support the claim that 50% of the water delivered to the trenches will recharge the underlying groundwater and the amount of drawdown would be reduced by fifty percent. *Id*. Even if the fifty percent estimate of trench infiltration to recharge the underlying groundwater was accurate, which has not been demonstrated, the drawdown effects would not be fully mitigated. *Id*. The DEIR fails to evaluate how the residual drawdown (after assumed benefits of the recharge trenches) would impact surrounding Groundwater Dependent Ecosystems ("GDE") or increased groundwater flow gradients between the San Joaquin River and mining sites. *Id*.

In sum, the DEIR must revise the necessary analyses as described in the CBEC Report to accurately disclose Project-related impacts to groundwater systems, and substantiate with data and/or analysis the benefits of the recharge trenches. Without this information the DEIR's analysis of the Project's impact related to on-site groundwater impacts is inadequate. As to downstream impacts, the DEIR's analysis is wholly inadequate. A revised DEIR must include an analysis of the aforementioned significant impacts and identify feasible, effective mitigation or alternatives to avoid or minimize the impacts.

Comment 58-28

4. The DEIR's analysis of potential impacts on Groundwater Dependent Ecosystems Is Inadequate.

As discussed above, in the CBEC report, and further in sections III.B.2(a) and III.B.3 below, the DEIR's incomplete analysis of potential impacts to groundwater dependent ecosystems ("GDEs") is a glaring flaw. CBEC at 5. The DEIR presents contradictory information regarding the effects of dewatering on groundwater supplies and GDEs. In one instance the DEIR erroneously claims that the effects of dewatering would be the same as effects already occurring because alluvium on the Quarry Site has already been removed. *Id*. and DEIR at 4.4-56.

As discussed above and in more detail in the CBEC Report, this statement in the DEIR is incorrect. *Id*. The GDEs located adjacent to the river and north of the Quarry site are rooted in alluvium with rooting depths of less than 30 feet below ground service. *Id*. Far from being identical to current conditions, lowering the alluvium groundwater levels, dewatering remaining alluvium, and ending operation of the infiltration trenches after mining is completed would result in effects that are significantly different. *Id*. The effects would be complete dewatering of the alluvium and associated GDE rooting zone adjacent to the river and north of the quarry. *Id*. This would result in potential adverse impacts on the GDE after, and possibly during, mining operations.

The CBEC Report shows that the DEIR itself presents evidence to support a conclusion that impacts to GDEs would be significant and would threaten the viability and sustainability of existing and future GDEs. A revised DEIR must correct these errors and identify mitigations or alternatives to avoid these significant impacts.

Comment 58-29

5. The DEIR Fails to Conduct A Quantitative Analysis of Streamflow Depletions From the San Joaquin River.

The DEIR at 4.10-114 and 4.10-115 presents an incomplete and inadequate analysis of the Project's potential to interfere with groundwater recharge at both mining sites such that the Project would conflict with the requirements of the California Sustainable Groundwater Management Act (SGMA) and sustainable management of the Basin. It claims that related impacts at both sites would be less than significant. However, as explained in detail in the CBEC Report, the DEIR itself presents findings and conclusions that show this conclusion to be inconsistent. CBEC Report at 7 and 8.

The DEIR shows that the San Joaquin River and groundwater in the alluvium, weathered rock and hard rock beneath and adjacent to the river are in hydraulic connection. CBEC Report at 7. For example, as discussed in detail in the CBEC Report

Comment 58-29 Cont.

and above, the DEIR indicates that mining operations in the Quarry and Plant Sites will increase the water table flow gradients moving from the river towards the mining pits. DEIR at 4.10-114. The result of an increased groundwater hydraulic gradient causing an increased rate of groundwater flow holds true for any saturated aquifer material, whether it is alluvium, weathered rock or fractured hard rock. CBEC Report at 7 and 8. Therefore, when groundwater that is in hydraulic connection to the San Joaquin River experiences an increase in hydraulic gradient toward the Quarry or Plant Sites, there will be an increase in the rate of depletion of water from the river into the groundwater system. *Id.*

Similarly, the DEIR acknowledges that San Joaquin River flows will be depleted due to mining operation. CBEC Report at 8 and DEIR Appendix G-3 at 48 (acknowledging that groundwater and river water are connected so that river water would enter the reclamation pond or mining pit). Therefore, the DEIR fails to demonstrate that it complies with SGMA requirements regarding interconnected surface water depletions because it presents no data or analyses that: a) identify potential unreasonable impacts to beneficial uses of surface water; b) quantify the amount of depletions; or c) develop mitigations for any potential undesirable results due to Project depletions of San Joaquin River flow.

Comment 58-30

B. The DEIR's Evaluation of Biological Resources Is Inadequate.

The DEIR's treatment of biological impacts suffers from substantial deficiencies and fails to meet CEQA's well established standards for impacts analysis. The document's analysis both understates the severity of the potential harm to biological resources within and adjacent to the proposed Project site and neglects to identify sufficient mitigation to minimize these impacts. Given that analysis and mitigation of such impacts are at the heart of CEQA, the DEIR will not comply with these laws until these serious deficiencies are remedied. *See Sundstrom v. County of Mendocino*, 202 Cal.App.3d 296, 311 (1988) ("CEQA places the burden of environmental investigation on government rather than the public.").

As discussed above, the proposed Project site is surrounded by conserved lands that protect habitat important to biodiversity and long-term sustainability of river and adjacent lands ecosystems. Furthermore, the Project site is located in Reach 1 of the San Joaquin River Restoration Program.[8] The Project will result in significant direct and indirect impacts to sensitive habitats, especially adjacent to the Quarry site and downstream. *Id*.

[8] *See* Ex. E (San Joaquin River Restoration Program Annual Report) at 3 (Fig. 1).

Comment 58-30 Cont.

Given the importance of the affected biological resources, one would expect the DEIR's analysis to provide careful and thorough evaluation of the Project's potential impacts. Unfortunately, the DEIR's analysis is nowhere close to meeting CEQA's well-established standards for evaluating biological resource impacts. As detailed in the attached Colibri Report, and summarized below, the DEIR presents a cursory and incomplete evaluation and lacks evidence for its conclusions. The DEIR downplays the Project Site's importance to the ecological health of the region; is based on an inadequate search radius for records of special-status species; inadequately analyzes impacts to sensitive species such as burrowing owl, Swainson's hawk, tricolored blackbird, and western red bat; fails to analyze impacts to sensitive species from blasting and fugitive dust emissions; neglects to analyze impacts to riparian areas and downstream habitats; and proposes vaguely defined mitigation measures that do not address all the impacts to species that the Project will cause.

Under CEQA, decision-makers and the public must be given sufficient information about impacts and mitigation to be able to evaluate the impacts of a proposed project for themselves. *See* Pub. Res. Code 21061. Furthermore, analysis of impacts cannot be deferred to a later date but must be performed prior to project approval. *Sundstrom,* 202 Cal. App. 3d at 307 ("By deferring environmental assessment to a future date, the conditions run counter to that policy of CEQA which requires environmental review at the earliest feasible stage in the planning process."). Accordingly, a revised DEIR must fully analyze and disclose these impacts and propose and evaluate feasible mitigation measures for each significant impact.

The report prepared by Colibri provides detailed comments on the DEIR's biological resources analysis. *See* Colibri Report attached as Appendix B. The discussion below highlights the most egregious deficiencies.

Comment 58-31

1. The DEIR's Description of the Existing Biological Setting Is Incomplete and Misleading.

An EIR's description of a project's environmental setting crucially provides "the baseline physical conditions by which a Lead Agency determines whether an impact is significant." CEQA Guidelines § 15125(a). Here, the DEIR fails to accurately portray the site's underlying environmental conditions and therefore undercuts the legitimacy of the environmental impact analysis. Specifically, the DEIR lacks sufficient information regarding the biological resources at the Project site. It therefore fails to provide important contextual information and lacks a sufficient baseline for determining impacts.

Comment 58-31 Cont.

As discussed in section I above, the DEIR dismisses the site's location adjacent to conserved lands and wildlife corridors. As explained in the attached Colibri Report, the Project site is located near conserved lands that play a key role in promoting biodiversity and the long-term sustainability of ecosystems in the area. Federally designated Critical Habitat for California tiger salamander, succulent owl's clover, and San Joaquin Valley Orcutt grass are located across the San Joaquin River from the Plant Site and Quarry Site, and Critical Habitat for California tiger salamander is located roughly 2.0 miles northeast of the eastern boundary of the project sites. DEIR at 4.4-37. Moreover, the San Joaquin River corridor—a significant wildlife movement corridor that provides critical natural areas—encompasses the western boundary of the Quarry Site and is roughly 0.6 miles west of the Plant Site. Little Dry Creek, which includes a riparian corridor with a connection to the San Joaquin River, is located approximately 0.1 mile north of the Plant Site. *Id.* at 4.4-18-19. These areas are likely to be impacted by the Project. As explained in the attached CBEC and Colibri Reports, mining to 600 feet below ground surface at the Quarry Site adjacent to the San Joaquin River may impact river flows, leading to adverse impacts to sensitive species like Chinook salmon. Colibri Report at 6. And common sense dictates that fugitive dust emissions from blasting—which results in a significant amount of particulate matter—would be highly likely to carry to off-site areas, including these conserved lands and wildlife corridors, on windy days. The DEIR ignores this latter impact entirely.

Comment 58-32

Notwithstanding the acknowledged rich array of biological resources on and adjacent to the Project site, the DEIR fails to sufficiently describe these resources because it relies on insufficient biological surveys. In some cases, surveys are impermissibly deferred until after Project approval. It seems, for example, that the County did not conduct surveys for western pond turtle or western spadefoot. Rather, the DEIR merely notes that western spadefoot and western pond turtle were not observed on-site during a habitat assessment conducted *six years* ago, and relies on unsubstantiated presumptions to conclude that the species are unlikely to occur on the Project Site. DEIR at 4.4-35. Even though silt ponds are located on the Plant Site and pits that accumulate water are located on the Quarry Site, creating potential habitat for western pond turtle and western spadefoot, the DEIR presumes that western pond turtle and western spadefoot are unlikely to occur on the sites because the level of disturbance throughout the sites "severely limits movement opportunities" for spadefoot and pond turtle. *Id.* at 4.4-35, 3.3-36. This conclusory statement is no substitute for the analysis required under CEQA. Simply presuming the absence of western spadefoot and western pond turtle without conducting surveys constitutes deferred analysis, which is impermissible. *Sundstrom,* 202 Cal. App. 3d at 307. A revised DEIR must properly analyze whether western pond turtle

and western spadefoot are present and in what numbers, and determine whether the project will result in permanent loss of habitat for these species. Comment 58-32 Cont.

The DEIR's description of the existing setting also mischaracterizes jurisdictional waters on the Project Site. The DEIR does not characterize the wash water conveyance ditch at the Plant Site at a stream. But as explained in the Colibri Report, the California Department of Fish and Wildlife generally considers a stream to be any feature with a bed, channel, and banks that conveys water and supports stream dependent life, regardless of the origins and use of that feature. The wash water conveyance ditch meets those criteria, and therefore likely qualifies as a stream—meaning that diverting or obstructing its natural flow, altering its bed, channel, or bank, or depositing any materials into the ditch is subject to the provisions of California Fish and Game Code Section 1600 et seq. Colibri Report at 3. By neglecting to characterize the conveyance ditch as a stream—and consequently failing to consider the impacts associated with the removal of the wash water conveyance ditch at the Plant Site—the DEIR fails to adequately portray the existing setting at the Plant Site. Comment 58-33

Moreover, the entire DEIR relies on outdated record searches and an inadequate search radius for records of special-status species. *See* Colibri Report at 3. The record searches cited in the DEIR were conducted in 2019—*six years* ago—meaning that any records added since 2019 were not considered. *Id.* Moreover, as the Colibri Report explains, the industry standard for EIR-level record searches is a nine-quadrangle search radius, including the topographic quadrangle containing the project site and the eight surrounding quadrangles. But the County only searched *four* quadrangles when preparing the DEIR. The DEIR's reliance on this insufficient, sub-standard search radius means that special-status species that may occur on or near the project site were almost certainly overlooked, and potential impacts to them were not considered. *Id.* Comment 58-34

These errors result in a DEIR that does not accurately reflect the existing setting. Searching the California Natural Diversity Database today and extending the search radius to encompass nine quadrangles, for example, reveals several species not addressed in the DEIR that may occur on or near the Project Site, including California glossy snake, western mastiff bat, pallid bat, spotted bat, and Townsend's big-eared bat. *Id.* A revised DEIR must conduct a new record search using more up-to-date data and, at minimum, a nine-quadrangle search radius. Comment 58-35

Because the DEIR does not provide an accurate description of the existing physical conditions on the Project site, it is incapable of adequately evaluating the Project's impact on sensitive biological resources.

Comment 58-36

2. Analysis of Significant Impacts on Biological Resources Is Incomplete and Cursory.

In some instances, the DEIR determines that the Project may have significant impacts, but then fails to determine the extent and severity of those impacts. Merely stating that an impact will occur is insufficient; an EIR must also provide "information about how adverse the adverse impact will be." *Santiago County Water District v. County of Orange*, 118 Cal. App. 3d 818, 831 (1981). This information, of course, must be accurate and consist of more than mere conclusions or speculation. *Id*. The DEIR's analysis of impacts to biological resources fails to fulfill this mandate in several instances.

(a) Failure to Disclose The Extent and Severity of Impacts to Sensitive Wildlife

For example, the DEIR concludes that construction of the Project has the potential to result in significant adverse impacts to a host of sensitive animal species, several of which are state-listed as threatened or proposed for federal listing. Nonetheless, the document fails to explain the actual and specific consequences to these species. *See, e.g.*, DEIR at 4.4-48. These sensitive species include burrowing owl, western pond turtle,[9] western spadefoot,[10] Swainson's hawk,[11] bald eagle,[12] and osprey. *Id.* Further, the DEIR notes that "[a]bundant nesting habitat for raptor species" is found along the San Joaquin River west of the project site and along Little Dry Creek north of the Plant site, and that ground disturbances and noise impacts from mining could thus disturb nesting birds on or near the sites. *Id.*, at 4.4-49. Despite this disclosure, the DEIR fails to discuss the specific consequences to nesting birds. *Id.*, at 4.4-49. The DEIR provides insufficient information

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[9] The U.S. Fish & Wildlife Service has proposed to list both the northwestern and southwestern pond turtle as "threatened" under the federal ESA. 88 Fed. Reg. 68370 (Oct. 3, 2023).

[10] The U.S. Fish & Wildlife Service has proposed to list both the northern and southern distinct population segments of the western spadefoot as "threatened" under the Federal ESA. 88 Fed. Reg. 84252 (Dec. 5, 2023).

[11] Swainson's hawk is listed as "threatened" under the California ESA. Cal. Dept. of Fish & Wildlife, Cal. Natural Diversity Database Special Animals List 18 (Jan. 2025), available at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline (attached as Ex. G).

[12] Bald eagle is a fully protected species under California law and listed as endangered under the California ESA. *Id.* at 18.

regarding the number of individuals of each species that will be affected or the degree to which the populations will be impacted.

Comment 58-36 Cont.

Moreover, the DEIR fails to adequately assess impacts to several listed species that have the potential to be harmed by the project. Tricolored blackbirds (a state-listed threatened species)[13] have over a dozen breeding season occurrence records within two miles of the project site and potential nesting habitat in the southeastern portion of the Plant Site, but the DEIR ignores possible significant indirect impacts due to activities like blasting, excavating, trenching, or use of heavy equipment. Colibri Report at 5. These activities could cause tricolored blackbird nests to fail, constituting a significant impact. *Id.* Western red bats, a sensitive species, have a moderate potential to occur on the project site, DEIR at Appendix C, Table C-1, yet the DEIR fails entirely to address the potential effects of the project on this species—including likely significant impacts from blasting given the western red bat's sensitivity to noise and vibration. Because bats are acoustic predators, noise from blasting could compromise their ability to effectively forage. Colibri Report at 5.

Comment 58-37

Swainson's hawks have more than four dozen breeding season occurrence records within two miles of the Project Site and numerous potential nest trees within half a mile of the Project Site, yet the DEIR fails to address potential indirect effects of the Project on nesting Swainson's hawks. *Id* at 4. Noise and dust from blasting and other Project activity could cause Swainson's hawks' nests to fail, constituting a significant impact. *Id.* Similarly, the DEIR neglects to address potential indirect impacts to burrowing owls that could result from the Project. Noise and dust from blasting, excavating, scraping, or use of heavy equipment could cause burrowing owl nests to fail and/or substantially modify their habitat, constituting a significant impact. *Id.* The DEIR also presumes Sanford's arrowhead, a California Rare Plant, to be absent—even though this species occurs in aquatic habitats like those in the southeastern portion of the Plant Site, and could be present. *Id.* at 6.

Comment 58-38

As explained in the attached CBEC Report, the DEIR also fails to adequately consider potentially significant impacts to species in groundwater dependent ecosystems that will result from the Project's interference with groundwater levels. CBEC Report at 5. Although groundwater dependent ecosystems are located near the Project Site, the DEIR contains no quantitative analysis of potential impacts to these ecosystems. *Id.* Groundwater dependent ecosystems are rooted in the alluvium extending outside the Project boundary. The Project may result in lowering the alluvium groundwater levels and dewatering remaining alluvium—which would totally dewater the alluvium and

Comment 58-39

[13] *Id.* at 22.

associated groundwater dependent ecosystem rooting zone adjacent to the San Joaquin River and north of the Quarry Site. This would result in potentially significant adverse impacts to groundwater dependent ecosystems, and the species that inhabit them, after—and possibly during—mining operations. *Id.* The DEIR fails to analyze these impacts.

Comment 58-39 Cont.

A revised DEIR must properly document the biological resources on site and thoroughly evaluate the Project's impacts to both on- and off-site biological resources.

(b) Failure to Analyze and Mitigate Impacts from Blasting and Fugitive Dust Emissions

Comment 58-40

The DEIR fails to analyze, let alone mitigate, impacts on sensitive wildlife and vegetation from dust emissions generated during blasting, aside from a cursory analysis of potential impacts to riparian habitats. DEIR at 4.4-57. The DEIR concludes that project operations associated with mining, processing, and reclamation activities would emit criteria air pollutants "from construction equipment and from mobile equipment and motor vehicles associated with excavation and blasting, and operation of an aggregate plant, ready-mix concrete plant, asphalt plant, and portable recycle plant on the Plant Site and Quarry Site." *Id.* at 4.3-57. However, the DEIR fails to consider particulate matter impacts of blasting on species—even though it admits in later sections that the generation of dust resulting from blasting would cause fine materials and dust to settle on vegetation, thereby indirectly harming habitats. *Id.* at 4.4-58. To address blasting impacts the DEIR proposes a Fugitive Dust Control Plan (Mitigation Measure 4.3-2), which prescribes upgrades to off-road engines, use of chemical dust suppressants, and daily application of water to stockpiles, but does not include any mitigation measures aimed at protecting sensitive wildlife and vegetation. *Id.*at 4.3-62

As the Colibri Report illustrates, fugitive dust emissions from the Project may adversely impact plants, and animals that depend on those plants, because fugitive dust may make plants unsuitable as habitat for insects and birds. Blasting results in a significant amount of particulate matter and would certainly carry to off-site areas on windy days. Blasting could thus harm or substantially modify the habitat of sensitive species like Swainson's hawks, tricolored blackbirds, burrowing owls, and western red bats, resulting in potentially significant impacts. Colibri Report at 4-6. The DEIR fails to address these impacts entirely (although it does admit, in its discussion of Project alternatives, that the no project alternative would "not create any new impacts to wildlife or associated habitat" because there would be "no expansion of mining operation and no blasting." DEIR at 6-14).

The DEIR *does* conclude that the generation of dust by blasting could indirectly impact riparian habitats when fine materials and dust settle on vegetation. DEIR at 4.4-58. To address this, the DEIR proposes the Fugitive Dust Control Plan, which would require upgrades to off-road engines and would require that stockpiles be controlled through the application of dust suppressants. But as discussed further below, the Fugitive Dust Control Plan does not ensure that dust control measures will be properly implemented, let alone effective to reduce impacts to less-than-significant levels. A revised DEIR must include the prescribed analysis and identify feasible mitigation measures that ensure minimization of impacts. Comment 58-41

In addition to inadequately analyzing the impacts of fugitive dust emissions, the DEIR fails to fully analyze the impacts of noise and vibration on wildlife. As described in the attached Salter Report, aside from its analysis of impacts to fish, the DEIR includes virtually no noise or vibration thresholds, analysis, or mitigation for wildlife in areas near the Project Site. Salter Report at 2. Although the DEIR concludes that "[g]round disturbance and noise impacts from mining could disturb nesting birds located on or near the project sites," DEIR at 4.4-49, and that mining could "result in potential adverse impacts to special-status species in the riparian habitat surrounding the project sites" due to substantial disturbances caused by noise and vibration, *Id.* at 4.4-52, it provides insufficient substantive analysis. Salter Report at 10. The County did not measure existing ambient noise levels in the neighboring wildlife areas; nor did it predict Project operational noise levels for these areas. Absent such analysis, the potential noise increase and ensuing impacts to wildlife cannot be evaluated adequately. *Id.* Indeed, the DEIR completely omits any analysis of blasting impacts on wildlife and other nearby riparian habitat. Because the DEIR's analysis of noise and vibration impacts is so deficient, impacts to wildlife remain largely unknown. *Id.* And since there are no noise and vibration mitigation measures that control operational noise or blasting vibration—such as stopping blasting during times when birds are nesting near the Project Site—noise and vibration from the Project will likely disrupt nearby wildlife. *Id.* Comment 58-42

(c) Failure to Disclose Impacts to Special Status Species After Reclamation of the Site. Comment 58-43

The DEIR's analysis of impacts to special-status plant and wildlife species after mining and reclamation are complete suffers from similar deficiencies. The DEIR concludes that there would be no significant impacts once reclamation is complete because "all activities would cease, and all equipment would be removed," sources of lighting, noise, and vibration would be removed, and the area would be reverted to open space. DEIR at 4.4-53. However, the current reclamation plan in place for completion of alluvial mining and the sites does not match the proposed one. The existing reclamation

plan would leave a large, but comparatively shallow (approximately 20 feet deep) lake at the Quarry site; the proposed reclamation plan would leave an 108-acre, 600-foot-deep pit with a water surface elevation of approximately 500 feet below the surrounding grade. *Id.* at 4.4-53-54. Compared to the proposed reclamation plan, the existing reclamation plan would offer better opportunities for aquatic plant and animal life, as habitat value is often inversely related to water depth. Colibri Report at 6. But the DEIR ignores likely impacts to wildlife that would result from the creation of the 600-foot-deep pit and fails to analyze the impacts of the proposed reclamation plan compared to the existing plan. Similarly, the DEIR notes that the formation of quarry pit ponds that would cover the majority of the Plant and Quarry Sites would constitute an "irreversible" environmental change that would preclude future land uses, but fails to analyze whether this change would result in impacts to sensitive species or their habitats. *Id.* at 7-3.

Comment 58-43 Cont.

3. The DEIR Fails to Adequately Evaluate the Project's Adverse Impacts on On-Site and Downstream Habitat Areas.

Comment 58-44

As described in both the CBEC and the Colibri Reports, the Project's effects on site hydrology would result in water stress to existing riparian habitat areas on-site and downstream of the Project site. The Project would result in myriad changes including a substantial loss of groundwater due to increased evapotranspiration from large numbers of wetland and riparian plants proposed as part of the revegetation plan and increased evaporation in ponded areas. In addition, changes in Project site topography, hydraulics, and flow that will redirect flood waters have the potential to impact existing riparian areas on-site and sensitive habitat downstream. CBEC Report at 5 and Colibri Report at 6. The DEIR fails to evaluate these impacts.

Comment 58-45

The San Joaquin River to the west of the project site supports a Great Valley Mixed Riparian Forest, and riparian habitat is also located just north of the Plant Site and south of Little Dry Creek. DEIR at 4.4-55, The DEIR notes that pumping of quarry pits on the project sites and the ensuing formation of a quarry pit pond on the Plant Site and quarry pit lake on the Quarry Site "would result in decreased groundwater levels in the areas surrounding the project sites," which could lead to adverse impacts to riparian habitat should plant species lose access to groundwater or river flow water important to their survival. *Id.* at 4.4-55. Mulefat and sandbar willow, for instance, are groundwater dependent species that have been identified within 500 feet of the Plant Site. *Id.* at 4.4-11. As explained in the attached CBEC Report, the Project will interfere with groundwater dependent ecosystems, resulting in potentially significant impacts on these ecosystems after, and possibly during, mining operations. CBEC Report at 5.

Comment 58-46

Moreover, blasting at the Quarry Site could impact riparian habitat by destabilizing the San Joaquin River bank, or by generating projectiles that could damage riparian habitat. *Id.* at 4.4-57. To address this, the DEIR proposes Mitigation Measure 4.10-1, which would implement blasting protocols that would require blasting to begin at the center of the Quarry Site so that "monitoring of groundborne vibration can occur and be used to verify that predicted maximum ground vibrations are consistent with actual ground vibration measurements and allow for adjustments in blasting design to occur based on the monitoring results." *Id.* If it is determined that blasting is causing instability (of the river bank), a "corrective action plan must be developed that identifies changes to the blasting program to prevent future exceedances." *Id.* at 4.4-58. The blasting protocol would also require the development of an annual Blasting Plan submitted to the county each year for review. *Id.* These mitigation measures are both vague and impermissibly deferred. Indeed, these measures would allow significant impacts to occur before any steps are taken to avoid or minimize impacts; corrective action would be taken only after the damage is already done. CEQA prohibits a delay in implementation of mitigation until after a significant impact occurs. *See King and Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814, 860, 862; *POET, LLC v. State Air Resources Bd.* (2013) 218 Cal.App.4th 681, 738, 740. Compounding the problem, the DEIR fails to articulate exactly *what* corrective action must be taken if significant impacts occur. This is also unlawful. *See, e.g.*, *California Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173, 195-96; *Preserve Wild Santee v. City of Santee* (2012) 210 Cal.App.4th 260, 280-81.

Comment 58-47

The DEIR also reaches unsupported and unreasonable conclusions about impacts to on-site and downstream wildlife from mining operations and blasting. For instance, it concludes that the project's interference with native resident or migratory fish or wildlife species movement, corridors, or nursery sites would be less than significant, DEIR at 4.4-63, but justifies this conclusion by discussing post-operating conditions; the DEIR claims that mining operations on the Plant Site will not compromise wildlife movement, in part, because "[u]pon completion of mining and reclamation, the final reclaimed use on the site would be open space." *Id.* But the Project envisions operation for a period of 100 years. *Id.* at ES-4 and 2-5. That reclamation would take place at the end of this period does not mean that there will not be significant impacts in the interim. Disruption of the site over a 100-year period will cause significant impacts, even if the site will one day be

reclaimed. The DEIR may not just ignore a century of adverse impacts to wildlife simply because the Project Site will be converted to open space thereafter.[14]

Comment 58-47 Cont.

Furthermore, the DEIR's discussion of impacts to special-status wildlife species in riparian habitat surrounding the Plant and Quarry sites during mining operations is devoid of any real analysis. Without providing a single citation to back its claims, the DEIR asserts that "wildlife is often observed to habituate well to daily recurring activities and noise associated with the operations," DEIR at 4.4-52. The DEIR provides several examples of species habituating—again, without offering any citations to substantiate these claims. *Id.* at 4.4-52-53. Many of these examples, including the primary example offered, Cajon Creek Conservation Bank, were projects involving alluvial surface mining without blasting, and are therefore not reflective of whether species exposed to blasting on the Quarry Site are likely to habituate or not. *Id.* The DEIR's conclusion that impacts to special-status wildlife species in riparian habitat surrounding the Plant and Quarry sites during mining operations will be less than significant lacks any basis.

Comment 58-48

In addition, as discussed above, the Project proposes to excavate hard rock to a depth of 600 feet, leaving a large pit even after reclamation has taken place. As described in the attached CBEC report, groundwater in the alluvium beneath off-site areas will likely flow into the Quarry Site pit, resulting in potential groundwater contamination as well as potentially significant impacts to neighboring groundwater dependent ecosystems. CBEC Report at 4. The DEIR ignores these impacts to water quality and to downstream aquatic habitats. *Id.*

Comment 58-49

4. The Project's Approach to Mitigation of Impacts on Biological Resources is Inadequate.

Comment 58-50

The DEIR not only fails to adequately analyze potentially significant impacts on biological resources on-site and off-site in the adjacent wildlife refuges due to project-related hydrologic changes, fugitive dust emissions, and direct impacts from removal of habitat, but also fails to provide adequate mitigation to address all of the ways that biological resources will be impacted. An EIR is inadequate if it fails to suggest mitigation measures, or if its suggested mitigation measures are so undefined that it is impossible to evaluate their effectiveness. *San Franciscans for Reasonable Growth v. City and County of San Francisco* (1984) 151 Cal.App.3d 61 at 79. The County may not use the inadequacy of its impacts review to avoid mitigation: "The agency should not be

[14] Nor is there any guarantee that the site actually will be reclaimed even after another century of operation. As discussed above, the site would have been reclaimed decades ago had the County not repeatedly extended the expiration of existing permits.

allowed to hide behind its own failure to collect data." *Sundstrom*, 202 Cal.App.3d at 306. The formulation of mitigation measures may not properly be deferred until after Project approval; rather, "[m]itigation measures must be fully enforceable through permit conditions, agreements, or legally binding instruments." CEQA Guidelines § 15126.4(a). Here, the DEIR's identification and analysis of mitigation measures, like its analysis of biological impacts, are legally inadequate.

Comment 58-50 Cont.

The DEIR concludes that the project could result in significant impacts to special-status species—including burrowing owls, western pond turtles, western spadefoot, Swainson's hawks, bald eagles, and ospreys—on the Plant Site or Quarry Site during mining operations, DEIR at 4.4-48-49, and that ground disturbance and noise impacts from mining could disturb nesting birds on or near the sites. *Id.* at 4.4-49. But the mitigation measures it proposes, which involve conducting preclearance surveys and relocating any members of these species found on the Project Site, fail to mitigate potential irreversible impacts to these species' habitat. *Id.* at 4.4-50 to 4.4-52, 4.4-57 to 4.4-58. Activities such as mining operations, blasting, and the creation of the 600-foot deep pit could result in the irrevocable destruction of habitat. Even if sensitive species are relocated, loss of their habitat is nevertheless an impact that requires evaluation and mitigation. A revised DEIR should include mitigation measures that adequately address potential irreversible harms to species habitat.

The DEIR's biological mitigation measures are inadequate for additional reasons. For example, the measures calling for relocation of burrowing owls, western pond turtles, and spadefoot (4.4-1a and 4.4-1b) fail to discuss any potential adverse impacts on these species resulting from capture and relocation. An EIR must evaluate whether mitigation measures may cause significant environmental impacts of their own (CEQA Guidelines § 15126.4(a)(1)(D)), but this EIR fails to do so. Nor do these measures cite any evidence that suitable habitat is available in areas where relocation would be feasible and the relocated species would not be further disturbed.

Comment 58-51

Measure 4.4-1c for nesting birds is also arbitrary, inadequate and inconsistent. Although the measure contemplates that a buffer zone of 300 to 500 feet may be necessary to protect nests from disturbance, it would require surveys only within 50 feet of "the immediate area of the mining phase where construction is to be initiated." DEIR at 4.4-50. Nests outside this 50-foot buffer, but within the 300- to 500-foot radius where nest protection is necessary, would receive no protection at all. This arbitrary limitation on survey distance is unlawful. *See Sierra Watch v. County of Placer* (2021) 69 Cal.App.5th 86, 106-07.

Comment 58-52

Comment 58-53

C. The DEIR's Analysis of Project-Related Air Quality Impacts Is Inadequate.

The DEIR's analysis of Project-related air quality impacts contains numerous deficiencies that must be remedied in order for the public and decision-makers to fully understand the Project's impacts. Specifically, the evaluation of the Project's air quality impacts must be revised to address: (1) inadequate analysis of direct and indirect impacts of fugitive dust emissions, (2) an insufficient mitigation plan for particulate matter emissions; and (3) deficient analysis and mitigation of project-related public health impacts. These issues, and other deficiencies, are discussed in greater detail below.

1. The DEIR Fails to Adequately Evaluate the Project's Direct and Indirect Impacts Resulting from Particulate Matter Emissions.

The DEIR concludes that Project-related particulate matter emissions (specifically fugitive dust emissions) would be significant. DEIR at 4.3-60. However, the DEIR fails to provide adequate details about dust-producing elements of the Project. As a result, readers of the evaluation cannot know whether all direct impacts were evaluated. For example, the DEIR fails to provide information about the area that would be disturbed at both sites each day; the anticipated size, number, and location of stockpiles; and how material would be transported to avoid fugitive dust emissions. This information is important for readers to understand the daily volume of exposed material and how handling of the material may or may not result in additional pollutant emissions.

Comment 58-54

Similarly, the DEIR states that if topsoil or overburden stockpiles are expected to remain *longer than one year*, the stockpiles would be protected from wind and erosion with planted grasses. DEIR at 2-29, 2-36 (for both the Plant and Quarry sites; emphasis added). This suggests that unused stockpiles could be subject to uncontrolled wind erosion for up to 12 months before being seeded, which could generate substantial dust emissions that were not accounted for in the DEIR analysis.

Comment 58-55

In addition, the DEIR fails to adequately evaluate the indirect impacts related to Project-related fugitive dust. Specifically, as discussed above and in the attached Colibri Report, the DEIR ignores potential impacts of particulate matter on adjacent wildlife and plant habitats. *See* Colibri Report at 3. The DEIR fails to evaluate the effects of fugitive dust drifting into immediately proximate ecological reserves and other open space.

A revised analysis must properly evaluate the Project's particulate emissions, disclose the corrected emissions of particulate matter, and identify feasible, effective mitigation to minimize the impacts.

Comment 58-56

2. The DEIR's Proposed Mitigation for Significant Project-Related Particulate Matter Emissions Is Insufficient.

The DEIR proposes Mitigation Measure 4.3-2 to address the Project's significant impact due to particulate matter emissions. DEIR at 4.3-62. However, as presented, the measure fails to ensure that impacts will be minimized to a less-than-significant level. The measure indicates that a Fugitive Dust Control Plan will be prepared sometime in the future. The deferred plan would include three elements. However, the measure is generic, vague, and fails to provide any mitigation at all for several potential sources of particulate pollution. As discussed above, the DEIR fails to address fugitive dust control in the mining pit area. DEIR at ES-13 and 4.3-62. During dry weather conditions, wind erosion and excavation equipment operation would generate a substantial amount of fugitive dust emissions if not properly controlled. Blasting also produces large amounts of particulate matter, and yet the mitigation measure fails to address these emissions. Finally, although the measure provides for controlling unpaved roads with dust suppressants, it fails to specify how often or under what conditions.

Comment 58-57

In addition, the DEIR fails to evaluate the effectiveness of the control measures proposed in the Fugitive Dust Control Plan. Measures to mitigate the substantial amount of particulate matter that would result from this Project should be specific and substantially more stringent. For example, the measures should include periodic air monitoring by a third party (when triggered by complaints), and should include specific information about how unpaved roads, stockpiles, and disturbed areas would be stabilized to prevent wind erosion.

Comment 58-58

As discussed above, impacts from these fugitive dust emissions are not only harmful to people but can also impact animals and plants on adjacent sites. See Colibri Report at 3. The County must identify effective, enforceable measures that will minimize impacts to the sensitive plant and animal communities on- and off-site as well as sensitive receptors in adjacent residential areas.

Comment 58-59

3. The DEIR's Health Risk Assessment Lacks Substantial Evidence to Support Conclusions.

The DEIR presents a Health Risk Assessment evaluating cancer risk from exposure to Project-generated toxic air contaminants (TACs) of concern, including diesel particulate matter, silica dust and trace heavy metals. DEIR at Appendix D-1. However, giving that the Project more than doubles production from the mines, it is unclear how the evaluation concludes there would be a net reduction in cancer risk at the maximum exposed individual sensitive receptor (or MEIR). Specifically, the DEIR identifies an

Comment 58-59 Cont.

unmitigated cancer risk of 281 in a million. DEIR Table 4.3-24 at p. 4.3-63. However, the DEIR then claims that the cancer risk after implementation of mitigation measures would be reduced to less than zero. DEIR at Table 4.3-25 at p. 4.3-64. This seems to suggest that the mitigation causes a beneficial net reduction relative to baseline conditions, but the DEIR fails to explain how the analysis arrives at this confounding conclusion.

Comment 58-60

Furthermore, the health risk analysis assumptions are unclear. For example, it is unclear what baseline health risk scenario is assumed for the existing condition. The DEIR, at Appendix D, indicates that baseline data is based on data in Appendix G to Appendix D1. A review of that data, however, fails to clarify the baseline assumptions.

A revised DEIR must clearly state the baseline health risk scenario and how it was derived, and must include an apples-to-apples comparison between the existing conditions and the proposed net change for to project operations. The assumptions must also be clearly articulated so that the public and decisionmakers can understand the basis for the analysis

Comment 58-61

D. The DEIR's Noise Analysis Is Inadequate.

1. The DEIR Uses Inappropriate Thresholds of Significance to Evaluate Blasting-Related Impacts on People.

The Project proposes frequent blasting (once or twice a week) for a period of approximately 70 years during the hard rock mining phase. DEIR at 2-42 and 2-43. Blast waves, or pressure waves, are also referred to as airblast. Salter Report at 3 through 7.

The DEIR acknowledges that the nearest sensitive receptors to the Project site are located approximately 250 feet from the noisiest operations at the Quarry site. DEIR at 4.13-59. While the DEIR purports to evaluate the impacts of blasting on nearby residents, it fails to actually do so. DEIR at 4.13-65. As further explained in the Salter Report, the DEIR's thresholds of significance for blasting-related impacts are based on U.S. Bureau of Mines thresholds that focus only on building damage resulting from blast waves, not on the potential for human disturbance. Salter at 3; DEIR at 4.13-65. As the Salter Report shows, human disturbance from vibration and "airblast" can occur at levels far below those that may cause structural damage. Indeed, multiple agencies in the United States and elsewhere have established standards addressing blasting impacts on people that are different from, and far more stringent than, thresholds for assessing the potential for structural damage. Salter at 3. By using a structural damage threshold to assess the potential for human disturbance, the DEIR effectively omits any analysis of potential vibration and airblast impacts on people.

Comment 58-61 Cont.

Given that the DEIR's thresholds of significance for the project's ground-borne vibration and airblast impacts only address structural damage, it follows that the analysis of this impact is also limited only to structural damage. This approach does not comport with CEQA. People can perceive levels of motion and sound that are well below (by a factor of 100 to 1000 or more) those levels that could cause damage to the average structure.[15] People can detect the effects of airblast from a distance up to 2,000 feet. Salter at 8. The DEIR's analysis is therefore incomplete and inadequate.

Under CEQA, the public has a right to know just how disruptive noise and vibration from the Project's operations will be. California courts are clear on this subject. A DEIR may not "travel the legally impermissible easy road to CEQA compliance . . . [by] simply labeling the effect 'significant' without accompanying analysis . . . ." *Berkeley Keep Jets Over the Bay Com. v. Board of Port Cmrs.*, 91 Cal.App.4th 1344, 1371 (2001). Rather, "a more detailed analysis of how adverse the impact will be is required." *Galante Vineyards v. Monterey Peninsula Water Management Dist.*, 60 Cal.App.4th 1109, 1123 (1997).

The revised DEIR must use thresholds of significance that account for effects on people (not just structures) to evaluate and disclose the full extent and severity of the Project's blasting impacts on adjacent sensitive receptors. Absent identification of applicable thresholds, the DEIR's conclusions regarding the significance of human disturbance impacts fail to inform the public and lack evidentiary support.

Comment 58-62

2. The DEIR Fails to Adequately Analyze the Project's Impacts Related to Nighttime Noise and Extended Operational Hours.

The DEIR analysis indicates that operational noise at night is projected to exceed thresholds of significance, resulting in significant impacts. DEIR Tables 4.13-16 and 4.13-17, DEIR 4.13-57 through 4.13-60). Making things worse, the Project site would extend operational hours (DEIR at 4.1-62 and 4.1-63) to allow loading/unloading and aggregate trucking to regularly occur between the hours of 4 a.m. and 9 p.m. under the proposed project, compared to existing conditions where the earliest operations begin between 4 a.m. and 6 a.m. seasonally, and end at 6:00 p.m. year-round. As the Salter Report explains, extended operations before 6 a.m. and after 7 p.m. come with increased risk and potential for sleep and speech disturbance for the nearby sensitive receivers. Salter at 10. The DEIR omits analysis of these impacts. A revised DEIR should include

[15] See Wesley L. Bender, Understanding Blast Vibration and Airblast, Their Causes, and Their Damage Potential at 9 (2019), available at http://www.iseegoldenwest.org/articles/Blast%20Effects.pdf (attached as Exhibit H).

an analysis of nighttime noise and the potential for sleep disturbance at nighttime hours (4 a.m. to 7 a.m.). The sleep disturbance study should evaluate both average and single-event maximum noise (i.e., Leq/L50 and Lmax noise levels) from processing, truck loading, and truck pass-by noise. Salter at 10.

Comment 58-62 Cont.

3. The DEIR Proposes Inadequate Mitigation and Fails to Provide Evidence That The Proposed Measures Will Reduce Noise to Less Than Significant Levels.

Comment 58-63

Notwithstanding the DEIR's deficient noise impact analysis, the document recognizes the need to mitigate for the Project's significant noise impacts. DEIR at ES-45 to ES-49; 4.13-58; and 4.13-61 and 4.13-62. Specifically, the DEIR concludes that changes in ambient noise levels at both the Plant Site and at the Quarry site, would be potentially significant during both stages of production. *Id.* The DEIR identifies two mitigation measures that it claims will reduce impacts to less-than-significant levels. *Id.*

Under CEQA, "[m]itigation measures must be fully enforceable through permit conditions, agreements, or legally binding instruments." CEQA Guidelines § 15126.4(a). Here, the DEIR's identification and analysis of mitigation measures are legally inadequate. The identified mitigation measures for the significant noise impacts at both sites include a laundry list of elements. DEIR at ES-45 and ES-46; 4.13-58; and 4.13-61 and 4.13-62. The measures provide that the facility operator "shall implement one or more of the following measures…" so that the operator can choose to implement measures at their discretion. *Id*. The measures include no performance standards to ensure that the combination of elements implemented would control noise to any particular level. *Id.* Without such standards, the measure is not enforceable and the DEIR cannot rely on either measure to conclude that noise would be reduced to less-than-significant levels. *See, e.g.*, *King and Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814, 872-79.

In addition, the DEIR fails to provide any analysis of the proposed mitigation measures' efficacy, and fails to provide evidence to support the conclusion that, with the mitigation, impacts would be reduced to less-than-significant levels. Instead, the DEIR defers analysis of the measures' efficacy until after project approval. Specifically, item 7 in Mitigation Measure 4.13-2 and item 12 in Mitigation Measure 4.13-3 call for noise monitoring to determine if the measures adequately lower noise levels. However, under well-established caselaw, when a lead agency relies on mitigation measures to find that project impacts will be reduced to a level of insignificance, there must be substantial evidence in the record demonstrating that the measures are feasible and will be effective. *Sacramento Old City Assn. v. City Council of Sacramento*, 229 Cal.App.3d 1011, 1027

Comment 58-64

(1991); *Kings County Farm Bureau v. City of Hanford*, 221 Cal.App.3d 692, 726-29 (1990). Because the DEIR defers analysis regarding the effectiveness of the proposed measures, there is no such evidence in the record for this Project.

Comment 58-64 Cont.

Furthermore, as discussed above, the DEIR's mitigation measure for blasting impacts is impermissibly deferred, overly vague, and insufficient to support a conclusion that impacts will be less than significant. In particular, the measure relies on inadequate monitoring of blasting to determine whether thresholds are exceeded and requires preparation of a "Corrective Action Plan" if they are. See DEIR at 4.10-91 (MM 4.10-1); DEIR Appendix H-6 ("Blasting Protocols"). This measure thus impermissibly defers both analysis and mitigation of significant impacts; indeed, the DEIR proposes to allow significant impacts to occur before mitigation is even proposed, much less implemented. Compounding the problem, the mitigation measure does not identify any specific measures that must be included in a "Corrective Action Plan." Mitigation measure 4.10-1 is mentioned several times in the DEIR as the basis for concluding numerous impacts are less than significant. These conclusions are without evidentiary support, and the DEIR's failure to identify and describe adequate mitigation renders the document inadequate as a matter of law.

Comment 58-65

4. The DEIR Fails to Analyze Noise Impacts on Area Recreational Users.

Comment 58-66

Finally, the DEIR completely ignores Project-related noise impacts to recreational users of the San Joaquin River (e.g., kayaking, canoeing) and of nearby Sumner Peck Ranch, Ball Ranch, and Lost Lake Recreation Area, the southern border of which is adjacent to the Quarry site. Sumner Peck Ranch is open to the public daily from 12-5 pm thanks to Solitary Cellars Winery, which offers an outdoor wine tasting area. Ball Ranch is also open to the public daily and is operated by the Trust under contract to the Conservancy. In addition to recreation, Lost Lake County Park is the location of many elementary school field trips during the school year. According to the County's website, "[T]he primitive nature study area and 38 acre lake make Lost Lake one of the most popular County parks."[16] Lost Lake Recreation Area provides multiple features and activities, such as group picnic areas, softball field, volleyball courts, hiking trails, nature study area and trail, bird watching, hiking, kayaking, canoeing, fishing, camping and

[16] *See* Fresno County, Lost Lake Recreation Area, at https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/resources-and-parks-division/parks/lost-lake-recreation-area (attached as Ex. I).

playgrounds, and serves various members of the community, including individuals, groups, students, scouts, and families. *Id.*

Comment 58-66 Cont.

It is therefore improper for the DEIR to omit any analysis of impacts to recreational River users and to users of the park. A project that calls for blasting and hard rock mining operations would clearly impact recreational users because it would interfere with their use and enjoyment of the area and may result in safety concerns. One of the purposes of open space and parks is to provide urban users access to spaces away from the noise of urban life. The noise associated with drilling, blasting, excavation, and aggregate processing activities for 100 years would result in the loss of connection to the natural environment. Industrial noise – like second-hand smoke – is indiscriminating; there would be no way to escape the noise except to leave the area altogether. The revised DEIR must address this serious impact.

IV. The DEIR Fails to Comply with CEQA's Mandate Regarding Alternatives Analysis.

Comment 58-67

Under CEQA, an EIR must consider a "reasonable range" of alternatives "that will foster informed decision making and public participation." CEQA Guidelines § 15126.6(a); *Laurel Heights I*, 47 Cal.3d at 404. ("An EIR's discussion of alternatives must contain analysis sufficient to allow informed decision making."). The discussion of alternatives must focus on alternatives that are capable of avoiding or substantially lessening any significant effects of the Project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly. CEQA Guidelines § 15126.6(b). In addition, a "lead agency may not give a project's purpose an artificially narrow definition," to shape this determination but rather must "structure its EIR alternative analysis around a reasonable definition of underlying purpose and need." *In re Bay-Delta etc.*, 43 Cal.4th 1143, 1166 (2008). In particular, using overly narrow objectives to dismiss reasonable and feasible alternatives constitutes prejudicial error. See *North Coast Rivers Alliance v. Kawamura*, 243 Cal.App.4th 647, 669-70 (2015) (where the lead agency's overly narrow project purpose caused it to "dismiss[] out of hand" a relevant alternative, this error "infected the entire EIR").

As a preliminary matter, the DEIR's failure to disclose the extent and severity of the Project's broad-ranging impacts necessarily distorts the document's analysis of Project alternatives. As a result, the alternatives are evaluated against an inaccurate representation of the Project's impacts. Proper identification and analysis of alternatives is impossible until Project impacts are fully disclosed.

Moreover, the DEIR's alternatives analysis fails to live up to CEQA standards because: 1) it defines the Project objectives too narrowly and 2) it fails to analyze a reasonable range of alternatives that could significantly reduce the Project's impacts.

Comment 58-67 Cont.

A. The DEIR Presents Overly Narrow Objectives.

Comment 58-68

An EIR violates CEQA if it defines project objectives so narrowly as to preclude any alternatives at all (*see North Coast Rivers Alliance v. Kawamura (2015) 243 Cal.App.4th 647, 667*), or proposes purported alternatives that conflict with project objectives only so they can be easily eliminated (*see Watsonville*, 183 Cal.App.4th at 1089).

As discussed above, the DEIR presents overly narrow and self-fulfilling project objectives. The DEIR characterizes the "overall goal" of the Project as "continu[ing] and expand[ing] existing mining and processing operations at the Plant Site and Quarry Site." DEIR at 6-3. Objectives 2 and 4 effectively circumscribe and mandate selection of the Project or an alternative that is substantively similar. In particular, Objective 2 requires the project to continue to use "known aggregate reserves from existing partially mined properties." *Id*. Objective 4 demands the Project "maintain a local source of construction aggregate with enough annual sales capacity (3.0 million tons [MT])." *Id.* These objectives leave no room for consideration of anything other than expansion of the existing operation, at the capacity proposed, at this location.

Indeed, the DEIR rejects the possibility of using alternative site locations because use of a different location would "result in eliminating aggregate production and reclamation impacts that would occur at the project site," "introduce new impacts to a site with no previous aggregate mining activity," and "restrict the full mineral development of the Quarry Site." *Id.* at 6-7. Similarly, the DEIR dismisses the reduced operational life alternative because it would restrict the full mineral development of the Project Site, *id.* at 6-8, and rejects reduced mining depth (200 feet) alternative because this option would require finding "another aggregate source to supply the County's and Fresno regional needs." *Id.* at 6-9.

Because the objectives leave no room to consider—and are used to justify dismissal without analysis of—relevant, feasible alternatives, they preclude consideration of a reasonable range of alternatives and violate CEQA. *North Coast Rivers Alliance v. Kawamura*, 243 Cal.App.4th 647 at 669-70 (2015). The County should withdraw the DEIR and proceed with analysis of a reasonable range of alternatives, and recirculate the EIR for a complete and adequate environmental review.

B. The DEIR Fails to Consider a Reasonable Range of Alternatives

Comment 58-69

The DEIR analyzes four alternatives to the Project, aside from the No Project Alternative. The alternatives presented are:

- Alternative 2: Reduced Mining Depth Alternative (400 feet);
- Alternative 3: Reduced Mining Depth Alternative (300 feet);
- Alternative 4: Reduced Mining Depth Alternative (300 feet) with Additional Setback (100 feet); and
- Alternative 5: Reduced Mining Depth Alternative (400 feet) with Reduced Annual Sales (2.5 MT/Y). DEIR at 6-10.

However, these alternatives do little to address the DEIR identified significant impacts to visual resources and safety impacts to pedestrians and bicyclists. Indeed, the DEIR concludes that adverse impacts to the scenic vista and degradation of the existing visual character in nonurbanized areas would be the same in Alternatives 2, 3, and 5 as in the Project. DEIR at 6-60.

Critically, each of these alternatives would still include blasting and hard rock mining and would still result in significant impacts that have not been disclosed. Specifically, Alternatives 2 through 5 would conduct hard rock mining with blasting to a reduced depth of 300 or 400 feet. DEIR at 6-10. Thus, Alternatives 2, 3, 4, and 5 would still continue mining operations for 86, 68, 63, and 86 years respectively. DEIR at 6-20, 6-30, 6-39, 6-52.

Furthermore, the alternatives presented fail to address the undisclosed significant impacts to people and sensitive habitat and species in the area associated with blasting and changes in hydrology. Therefore, the alternatives fail to reduce the Project's significant biological, hydrological, and noise impacts and fail to meet CEQA standards for alternatives analysis. CEQA Guidelines § 15126.6. Similarly, Alternative 4 would allow hard rock mining to a depth of 300 feet and increase the setback from the river by 100 feet. DEIR at 6-39.

Comment 58-70

The DEIR should have also considered other feasible alternatives that would actually *substantially lessen* the Project's multiple significant impacts. The document provides no reasonable explanation as to why additional alternatives that reduce the inevitable damage from the proposed Project were not proposed. In this case, where the proposed Project would result in many significant environmental impacts for 100 years, it is especially important that the DEIR analyze alternatives that could avoid or lessen those impacts. *See* CEQA Guidelines § 15126.6(c).

Comment 58-70 Cont.

As discussed above, the Project will result in significant impacts related to hydrology, biological resources, air quality, and noise. Given the site's location in close proximity to residences, immediately adjacent to a river that provides important aquatic and riparian habitat for multiple sensitive wildlife species, the DEIR should have considered additional alternatives that would reduce impacts to a substantive degree. For example, the DEIR should have analyzed a reduced extraction alternative that would allow further shallow mining of aggregate resources at the Plant and Quarry sites, but limit the operation to excavation of shallow sand and gravel resources only. Such an alternative would reduce impacts to groundwater resources, avoid changes to hydraulics and flood flows, avoid on-site and downstream impacts to habitat through changes in flow and water temperature, and avoid impacts to people and wildlife from blasting. Analysis of such an alternative would also reduce visual impacts and impacts to cyclists and pedestrians, which the current slate of alternatives fail to mitigate. DEIR at 6-60. A revised EIR should analyze these and other alternatives that will avoid or reduce the Project's impacts.

In short, the DEIR's alternatives analysis is riddled with flaws that improperly constrain to the County's consideration of project alternatives. Moreover, the DEIR fails to consider a reasonable range of alternatives that would "avoid or substantially lessen" the significant effects of the project. CEQA Guidelines § 15126.6.

Comment 58-71

V. The Project Is Inconsistent with the County's General Plan and Zoning Ordinance.

Neither the General Plan nor the Zoning Ordinance expressly allow hard rock mining and blasting in agricultural land use designations or the Exclusive Agriculture (AE) zone. The type of mining proposed in this Project is categorically different from the "surface mining" operations contemplated in the County's land use documents. The Project is therefore inconsistent with the General Plan and Zoning Ordinance.

As discussed above, General Plan Table LU-1 (at 2-25) allows "Surface Mining Operations" in AE and other agricultural zones, but does not expressly allow hard rock mining. The Zoning Ordinance similarly lists "Surface Mining Operations" as an allowable use in the AE zone (with a conditional use permit), but does not authorize hard rock mining. Zoning Ord. § 808.2.020, Table 2-2 (at 2-14).

In the AE zone, "[f]or land uses not listed in Table 2-2, the provisions of Section 802.1.020 (Rules of Interpretation) shall apply." *Id.*, § 808.2.020(D). Those "Rules of Interpretation" require specific findings regarding uses of land that are not specifically listed as allowable in particular zones. *See id.*, § 802.1.020(E). Among other things, the

Director has to make a determination that "[t]he characteristics of, and activities associated with, the proposed use are equivalent to those of one or more of the uses listed in the zone as allowable, and will not involve a greater level of activity, dust, intensity, noise, parking, population density, or traffic generation than the uses listed in the zone." *Id.*, § 802.1.020(E)(1)(a).

Comment 58-71 Cont.

Here, the Project will entail a fundamental shift from surface mining of aggregates to hard rock mining of granite. Hard rock mining involves regular blasting and entails a "greater level" of intensity, activity, dust, and noise than surface mining. These uses are not "equivalent" as required by the Zoning Ordinance.

Nor does hard rock mining fit within the definition of "surface mining" in the Zoning Ordinance: "All, or any part of, the process involved in the mining of minerals on mined lands by removing overburden and mining directly from the mineral deposits, open-pit mining of minerals naturally exposed, mining by the auger method, dredging and quarrying, or surface work incident to an underground mine." Zoning Ord. § 834.4.220. Nothing in this definition contemplates continuous, regular blasting and removal of materials from areas far deeper than those typically involved in surface mining operations. The proposed Project therefore cannot be found consistent with the General Plan or Zoning Ordinance.

Comment 58-72

VI. Conclusion

The Project will have a number of potentially significant impacts on the environment, including (but not limited to) impacts on groundwater resources, water quality, special status biological resources, noise, and air quality. Yet these impacts and others were not adequately analyzed and mitigated in the DEIR. As a result, the DEIR fails to serve as an adequate informational document and its conclusions are not supported by substantial evidence. For the foregoing reasons, the Trust urges the County to delay further consideration of the Project unless and until the County prepares and recirculates a revised DEIR that fully complies with CEQA and the CEQA Guidelines.

Comment 58-73

Very truly yours,

SHUTE, MIHALY & WEINBERGER LLP

Kevin P. Bundy

Shanthi M. Chackalackal

Carmen J. Borg, AICP
Urban Planner

Exhibits:

- Ex. A: CBEC Report **(Comment Letter #58A)**
- Ex. B: Colibri Report **(Comment Letter #58B)**
- Ex. C: Salter Report **(Comment Letter #58C)**
- Ex. D: American Rivers, San Joaquin River
- Ex. E: San Joaquin River Restoration Program, Annual Report
- Ex. F: Cal. Dept. of Fish &Wildlife, Chinook Salmon
- Ex. G: Cal. Dept. of Fish & Wildlife, Cal. Natural Diversity Database Special Animals List
- Ex. H: Wesley L. Bender, *Understanding Blast Vibration and Airblast, Their Causes, and Their Damage Potential*
- Ex. I: Fresno County, Lost Lake Recreation Area

cc: California Wildlife Conservation Board
San Joaquin River Conservancy
Julie Vance, CDFW regional director
Members of the Fresno County Planning Commission
Members of the Board of Supervisors

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EXHIBIT A

cbec
eco engineering
Hydrology | Hydraulics | Geomorphology | Design | Field Services

March 6, 2025

Ms. Carmen Borg
Shute, Mihaly & Weinberger LLP
396 Hayes Street
San Francisco, CA 94102-4421

Subject: Review of Draft Environmental Impact Report
CEMEX Rockfield Quarry Modification Project, Fresno County, California

Dear Ms. Borg:

Comment 58A-1

I am a hydrologist with thirty-five years of technical and consulting experience in the fields of geology, hydrology, and hydrogeology. I have been providing professional hydrology and geomorphology services in California since 1991 and routinely manage projects in the areas of surface- and groundwater hydrology, water supply, water quality assessments, water resources management, and geomorphology. Most of my work has been in the Central Valley and Coast Range watersheds of California. My areas of expertise include: characterizing and modeling watershed-scale hydrologic and geomorphic processes; evaluating surface- and ground-water resources/quality and their interaction; assessing hydrologic, geomorphic, and water quality responses to land-use changes in watersheds and causes of stream channel instability; assisting and leading in the development of CEQA environmental compliance documents and project environmental permits; and designing and implementing field investigations characterizing surface and subsurface hydrologic and water quality conditions. I earned a Master of Science degree in Geology, specializing in sedimentology and hydrogeology as well as an A.B. in Geology from Miami University, Oxford, Ohio. I am a Certified Hydrogeologist (CHG #360) and a registered Professional Geologist (PG #5737) in the state of California. A copy of my resume is attached.

I have been retained by Shute, Mihaly & Weinberger LLP (SMW) to review the Draft Environmental Impact Report (DEIR) for CEMEX Rockfield Quarry Modification Project located in Fresno County, California, and evaluate if the proposed project may impact surrounding properties and the environment. Specifically, I have reviewed the DEIR, supporting technical reports, and

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reports cited in this letter. Based on my review of these materials, it is my professional opinion that the DEIR is inadequate in evaluating the potential significant impacts of project actions on surface water and groundwater supply and associated biological resources dependent on that water. The rationale for this opinion is presented in the comments below.

Comment 58A-1 Cont.

1. No consideration of Climate Change in Flood Hazard Analysis

Comment 58A-2

The hydraulic modeling analysis of existing conditions presented in Appendix G-1 of the DEIR used FEMA's effective 100-year flow rate of 71,000 cubic feet per second (cfs) to determine if the flooding along the San Joaquin River would encroach into the Quarry Site. The results of the flood hazard analysis indicate that the existing conditions floodplain does not encroach into the Quarry Site. Using FEMA's water surface elevations and a 2018 topographic map, the flood hazard analysis also determined that the 100-yr event floodplain during a flow rate of 71,000 cfs does not encroach into the western portion of the Plant Site.

The flood hazard analysis does not consider or analyze the effects of long-term climate change on San Joaquin River flood flow rates at the Quarry and Plant Sites over the 100-year life of the project. A recent study completed by the California Department of Water Resources (DWR) (Nemeth et al., 2021) completed climate modeling analyses to inform the Central Valley Flood Protection Plan Conservation Strategy 2022 Update. An objective of these analyses is to identify current climate modeling data and results that can be used to assess the spectrum of changes in hydrologic and geomorphic processes that could impact Conservation Strategy's measurable objectives and target species. Appendix H of the Update report contains results of climate and hydrologic model analyses that quantify the changes in peak flood rates using regulated hydrology on the Upper San Joaquin River below Friant Dam for the year 2072. Results of these analyses indicate that future (2072) 100-year flow rates will increase to 126,800 cfs because of climate change[1], a flow rate that is 179% of the FEMA estimate used in the DEIR.

Based on my hydrologic and hydraulic modeling experience and review of the floodplain inundation maps and water surface elevations for the 100-year flow rate of 71,000 cfs presented in Appendix G-1 of the DEIR, it is my professional opinion that an increase in the flow rate to 126,800 cfs would encroach into and inundate both the Quarry and Plant Sites. It is also important to note that this estimated increase in 100-yr flood flow rates under climate conditions represents a condition halfway through the life of the Quarry Modification Project and 100-year flood flow rates would likely continue to increase through the second half of the project lifespan.

Given this new information developed by DWR and the lack of considering and analyzing the effects of climate change, it is my opinion that the DEIR has not completed a flood hazard analysis that evaluates the potential impacts from encroachment of the project into the floodplain.

[1] The report states that under climate change, peak flows in the snow-dominated upper San Joaquin River watershed will shift to earlier in the winter and spring and high flow events like the 100-year flow can't be fully contained by Lake Millerton and will be released downstream.

2. Inappropriate extrapolations of river level data below Friant to the Project sites

Comment 58A-3

With regards to groundwater-surface water interactions, page 20-21 in Appendix G-5 of the DEIR contains the following statement.

> *The stage data can also be used to identify conditions or periods when the water surface in the San Joaquin River is above the geologic contact between the alluvium and underlying weathered rock. This is an important relationship to understand because the alluvium has a much higher transmissivity (i.e., permeability) than the underlying weathered rock and hard rock. Thus, when the stage of the river is high enough that the water surface is above the base of the alluvium, there may be a higher potential for seepage of water from the river into the quarry.*

The stage data referred to in this paragraph was measured on the San Joaquin River at a stream gage located below Friant, which was then applied to the river adjacent to the project site. Extrapolating these data over 4.0- and 6.5-miles to the Quarry and Plant sites, respectively, is not a valid comparison as the stage at the below Friant gage can be totally different than in the river adjacent to the mining site due to differences in channel geometry and potential gains or losses in flow between sites. To make an accurate comparison between river levels and hydrogeologic conditions at the Project site, monitoring these variables needs to be completed at the sites being compared.

Similarly, in Figure 16 of Appendix G-5, a comparison of San Joaquin River water levels (stage) at the below Friant gage are compared to pond water levels in a former mining pond at the Beck Ranch to conclude there isn't any hydraulic connection between the pond and adjacent river. However, to make this comparison, the river stage datum is shifted by 290-feet to transpose these data approximately 4.0 miles downstream to the San Joaquin River adjacent to the pond site. Again, transposing stage data from one river location to another over this distance is fraught with potential uncertainties and errors.

The bed elevation of the channel adjacent to the pond appears to be derived from a 2-foot contour interval map for the project dated November 6, 2018. The mean daily flow rate on the San Joaquin River measured at the USGS stream gage below Friant (USGS gage No. 11251000) was 386 cfs on this date. This type of topographic mapping is not capable of capturing channel bed elevations submerged under water and thus does not accurately represent the channel bed surface elevation. Depending on local river channel geometry at the location adjacent to the Beck Ranch mining pond, the deepest part of the channel could feasibly be well below the 290-foot datum, and the stage levels could be lower than the bed of the pond. This would explain why there is no correlation between river stage and pond level at this location over the graphed period in Figure 16. It also means that it is quite feasible that Figure 16 does not support the conclusion that the pond and river are not in hydraulic connection, when in fact they could be.

Comment 58A-4

3. No quantitative analysis supports mitigation measures for lowering groundwater levels

In the description of Impact 4.10-10 on page 4.10-105[2], the DEIR states that because most of the upper alluvium has already been removed at the Quarry Site, there will be no groundwater seepage from the alluvium into the mining pit. This is incorrect as groundwater in the alluvium beneath off-site areas surrounding the site will still flow into the Quarry Site pit. Pumping water into the recharge trenches and ponds surrounding the Quarry and Plant Sites are stated to provide protection from this happening but the limited extent of these features may only prevent groundwater inflow in localized areas around the pits, especially the Quarry site. This is because the stated benefits of the recharge trenches are completely unfounded and based on speculation.

DEIR Appendices G-3 and G-4 present detailed analyses that quantify the amount of excavation dewatering required during mining operations of the Plant and Quarry sites, respectively. Based on the volume and rates of dewatering required, the appendices present calculations that estimate the amount of drawdown in alluvium and hard rock water table elevations radiating away from the mining pits (i.e., quantifying the distance and depth of the cone of depression created by mine dewatering). The dewatering of the mining pits will create a cone of depression in the groundwater surrounding the mining sites. These cones of depression will increase the groundwater flow gradients and flow rates towards and into the mining pits. To mitigate this increase of groundwater inflow into the mining areas, the DEIR proposes the installation of recharge trenches along selected sections of the mining pit perimeters. Water from mining pit dewatering would be discharged into the recharge trenches and various ponds with the idea that these features would recharge the underlying groundwater and reduce the amount of drawdown, reducing the rate and volume of groundwater inflow to the pits.

The DEIR states (page 41-42 of Appendix G-3 to the DEIR), "*Overall, operation of the recharge ditches would decrease the projected off-site drawdowns by fifty percent, as half of the pumped water would recharge the off-site groundwater*." The DEIR continues (page 42 of Appendix G-3), "*Operation of the recharge ditches would decrease the projected drawdowns to insignificant (less than one foot)*." Page 49 of Appendix G-5 states, "*Due to the recharge trenches along the west side of the quarry, groundwater levels in the alluvium and the weathered rock will be maintained consistent with existing conditions*." These statements lack factual basis. First, there are no data or analyses presented in the DEIR that substantiates the claims that the recharge ditches would decrease off-site drawdown by fifty percent or maintain groundwater levels consistent with existing conditions- these claims are based on speculation. The quantification of groundwater recharge through trench infiltration is controlled by many variables including but not limited to: the infiltration rate through the trench bed; hydraulic properties of underlying unsaturated soil; heterogeneities of the underlying medium; and distance between trench bed and underlying groundwater table. Quantifying the amount of trench recharge and how that recharge alters the underlying groundwater table level is complex and highly variable based on localized conditions. Second, even assuming the estimate of fifty percent of trench infiltration would recharge the underlying groundwater, that does not completely mitigate the drawdown effects on underlying groundwater. The DEIR does not evaluate how the residual drawdown (after assumed benefits of the recharge trenches) would impact surrounding Groundwater Dependent Ecosystems (GDE) or increased groundwater flow gradients between the San Joaquin River and mining sites.

[2] The statement that alluvium has been removed from the Quarry Site is contradicted elsewhere in the DEIR. Page 4.4-56 of the DEIR includes the statement, "*Since almost all (90%) of the alluvium has already been removed from the Quarry Site*". Page 4.10-37 of the DEIR includes the statement, "*In most of the Quarry Site, the alluvium has been removed by mining. Where present, alluvium on the Quarry Site is up to 60 feet thick*."

The assumed benefits of the recharge trenches weigh heavily in the DEIR's evaluation of potential impacts to surrounding water supply wells and mining pit water budgets. Given the benefits of recharge trenches have not been substantiated with data or technical analyses, it is my professional opinion that the DEIR has not provided the evidence necessary to reach valid conclusions pertaining to potential impacts to surrounding water supply wells, GDE, and streamflow depletions from the San Joaquin River.

Comment 58A-4 Cont.

4. No quantitative analysis of potential impacts on Groundwater Dependent Ecosystems

Comment 58A-5

Quarry Site

Section 5.0 b) (Evaluation of Potential Impacts) of the DEIR addresses the question, "*Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*" Page 56 of this Section includes the following statement.

> *On a more local basis, dewatering and subsequent reclamation of the Quarry Site would lower groundwater levels outside of the Project boundary. However, this effect would be focused primarily within the weathered rock and the hard rock. As discussed above, the alluvium has already been removed from most areas of the Quarry Site and the remaining alluvium is being dewatered. Thus, any effects on groundwater dependent ecosystems within the alluvium or river-flow dependent ecosystems adjacent to the Quarry Site along the river and north of the quarry due to the Project would be identical to those that are already occurring.*

This statement is contradictory. As demonstrated further below, the riparian vegetation that makes up the GDE adjacent to the river and north of the quarry are rooted in the alluvium that extends outside of the project boundary[3]. Lowering the alluvium groundwater levels, dewatering remaining alluvium, and terminating operation of the infiltration trenches after mining operations would result in effects that are **not identical** to those that are already occurring, but significantly different. The effects would be to totally dewater the alluvium and associated GDE rooting zone adjacent to the river and north of the quarry. This would result in potential adverse impacts on the GDE after, and possibly during, mining operations.

Figure 1 illustrates the location of potential GDE relative to the Quarry and Plant Sites. The GDEs mapped in **Figure 1** were taken from the North Kings Groundwater Sustainability Agency Groundwater Sustainability Plan (Provost & Pritchard, 2022). **Figure 2** depicts the post-reclamation grades and maps some individual trees that will be retained by the Project on the alluvial terrace between the Quarry Site and San Joaquin River. These trees constitute some of the riparian GDE mapped on **Figure 1** and are rooted in the underlying alluvium. **Figure 2** also indicates the location of the groundwater recharge trenches on the alluvial terrace above the river.

Figure 3 is a location map of groundwater wells completed in and around the Quarry Site and alignments of subsurface cross-sectional profiles A-A' and B-B'. Profile A-A' is provided in **Figure 4** and depicts the stratigraphy beneath the Quarry Site, well depths, and Hard Rock groundwater table elevational profile on October 1, 2018. Based on review of groundwater level measurements collected from wells screened in the alluvium and hard rock at MW-1, the water level in the alluvium generally ranges 3- to 6-feet higher than the hard rock at the Quarry Site, thus a water table profile for the

[3] These GSP "Potential GDE" were determined to have rooting depths of less than 30 feet below ground surface.

Comment 58A-5 Cont.

alluvium would be that much higher if plotted on **Figure 4**. Although not called out on **Figure 4**, the GDEs illustrated on **Figure 1** and **Figure 2** are located on the riverbank and upper alluvial terrace adjacent to the Northwest "Project Boundary" of profile A-A'. These GDEs are rooted within the alluvium and are fed by the alluvial groundwater.

As stated in the DEIR, "*dewatering and subsequent reclamation of the Quarry Site would lower groundwater levels outside of the Project boundary.*" **Figure 5** is another subsurface geologic profile along A-A' representative of post-reclamation conditions, which plots the range of hard rock groundwater table profiles. As depicted in this profile, the alluvium is completely dewatered beneath the GDEs and recharge trenches bordering the Northwest project boundary along the San Joaquin River. The DEIR also states (cite page/section), the post-reclamation pond level in the Quarry Site would remain approximately 500-feet below current grade, so the groundwater table profiles would remain at the levels depicted in **Figure 5**. Comparison of the groundwater table profiles presented in **Figure 4** and **Figure 5** indicates that, post-reclamation, the alluvium would be dewatered, which would likely result in significant adverse impacts to the GDE on the terrace and banks of the San Joaquin River.

Figure 6 presents a geologic cross-section and hard rock water table profile for section B-B', which would intersect the San Joaquin River just southwest of Well MW-2. As indicated in **Figure 1**, GDE are in the immediate vicinity of well MW-2 and southwest end of cross-section B-B'. Review of groundwater level measurements collected from wells screened in the alluvium and hard rock at MW-2, the water level in the alluvium generally ranges 0.25- to 0.50-feet higher than the hard rock, thus a water table profile for the alluvium would be slightly higher if plotted on **Figure 6.** Although there is no post-mining subsurface cross-sectional profile for section B-B' in the DEIR, there will be a similar degree of water table drawdown in this area as depicted in **Figure 5**. This would completely dewater the alluvium and result in potential significant adverse impacts to GDE in and outside the southwest portion of the Quarry Site.

Given these findings presented herein, it is my opinion that the Project will impart significant adverse impacts to the viability and sustainability of existing and future GDE lying between the Quarry Site and San Joaquin River.

<u>Plant Site</u>

Page 56 of the DEIR Appendix G-5 states the following.

> *At the Plant Site, groundwater levels are currently approximately 30 ft bgs. At this depth, groundwater levels at and adjacent to the Plant Site area are already deeper than depths that could support riparian vegetation, streamflow, and wetlands. Thus, any lowering of groundwater levels at the Plant Site due to dewatering during mining or reclaimed conditions would not have an effect on any groundwater dependent ecosystems.*

This statement blurs the area being referenced. Per **Figure 1**, there are no GDE within the Plant Site boundaries. However, the widening, deepening, and dewatering of the Plant Site mine will create a large cone of depression in the groundwater levels at and surrounding the site, similar to that of a pumping well. The cone of depression in the alluvium and weathered rock extends beyond the project boundaries into surrounding areas that underlie GDEs. The DEIR (Appendix G-3, Figures 11 and 12)

Comment 58A-5 Cont.

demonstrates that the project will increase the depth and extent of the cone of depression beyond the project area during and after mining, thus potentially impacting GDEs outside of the project boundaries.

The project proposes recharge trenches along portions of the project boundaries to lessen the impact of the deepening and expansion of the mining cone of depression. However, nowhere in the DEIR or supporting technical appendices is there any data or quantitative analysis to demonstrate/support the stated benefits - they are based on complete speculation. Regardless, the recharge trenches are not a complete mitigation even if they could achieve the desired effect, as they would only lesson the depth and extent of the cone of depression (Appendix G-3, Figures 11 and 12) and associated impacts - they would not eliminate the potential impacts to surrounding water supply wells, impacts to GDE, and depletions of San Joaquin River flow.

Given these findings presented herein, it is my opinion that the Project will impart significant adverse impacts to the viability and sustainability of existing and future GDE lying between the Plant Site and San Joaquin River.

Comment 58A-6

5. No quantitative analysis of streamflow depletions from the San Joaquin River

The DEIR presents consistent findings and conclusions that the San Joaquin River and groundwater in the alluvium, weathered rock and hard rock beneath and adjacent to the river are interconnected (i.e., in hydraulic or hydrologic connection). In addition, stable isotope analyses of samples collected from surface and groundwater at the Quarry and Plant Sites indicate that these waters originated from snow or rain that fell high in the Sierra Nevada Range before flowing down the upper San Joaquin River toward the Project site (pg. 32, Appendix G-5). Thus, the isotope signature of the groundwater beneath the site indicates it came come San Joaquin River derived recharge and that the river and adjacent alluvium, weathered rock, and hard rock groundwater are in hydraulic connection.

Figure 7 illustrates the typical ways stream flow interacts with underlying groundwater systems whey the stream and groundwater are interconnected. These diagrams indicate that when flow in the San Joaquin River is in hydraulic connection with the underlying alluvium, the river surface is an aerial expression of the water table surface. Diagram B in **Figure 7** illustrates a losing stream where flow seeps out of the stream into the shallow aquifer. **Figure 8** illustrates how a stream and groundwater system interact when they are disconnected by an unsaturated zone. Diagram A in **Figure 8** illustrates how infiltration of stream water into the unsaturated zone migrates vertically to the underlying groundwater. Even when there is no groundwater within the alluvium beneath the river, the river will continue to recharge the lower weathered and hard rock aquifers. The amount of mounding in the water table surface depends on many variables including, but not limited to, the infiltration rate through the stream bed and unsaturated soil, the hydraulic properties of the aquifer, and distance between stream bed and water table. Diagram A in **Figure 8** is also representative of the processes occurring beneath the proposed recharge trenches proposed within the Quarry and Plant Sites.

As determined in the DEIR and discussed above, mining operations in the Quarry and Plant Sites will increase the water table flow gradients moving from the river towards the pits as discussed above. As stated on page 4.10-114 of the DEIR, "*The increased rate of groundwater inflow through the hard rock*

Comment 58A-6 Cont.

into the quarry would be caused by an increase in the hydraulic gradient, or slope of the groundwater surface, toward the quarry." The response of an increased groundwater hydraulic gradient causing an increased rate of groundwater flow holds true for any saturated aquifer material, whether it is alluvium, weathered rock or fractured hard rock. Thus, when groundwater that is in hydraulic connection to the San Joaquin River experiences an increase in hydraulic gradient toward the Quarry or Plant Sites, there will be an increase in the rate of depletion of water from the river into the groundwater system. The DEIR also acknowledges that San Joaquin River flows will be depleted due to mining operations as exemplified in the following statement from page 48 of Appendix G-3.

> "*However, because the shallow groundwater and river water are connected, an estimated 315 acre-feet per year (rounded) of river water would enter the reclamation pond through the subsurface (groundwater inflow) in order to make a water balance.*"

The California Sustainable Groundwater Management Act (SGMA) defines Interconnected Surface Water (ISW) as follows. "*Interconnected surface water refers to surface water that is hydrologically connected at any point by a continuous saturated zone to the underlying aquifer and the overlying surface water is not completely depleted (Title 23 California Code of Regulations § 351[o]).*" The California Department of Water Resources addresses depletions of ISW under SGMA as follows (DWR, 2024).

> *SGMA identifies that an undesirable result occurs if, among other reasons, groundwater use occurring in a basin causes depletions of ISW that significantly and unreasonably impact beneficial uses of the surface water (CWC § 10721(x)(6)). Depletions of ISW under SGMA are only related to impacts caused by groundwater use, although a GSA will likely need to have some understanding of the various causes of reduced surface water flow to accurately determine the component due to groundwater. To comply with SGMA requirements, the GSAs should identify where ISW exists; determine the location, timing, and quantity of depletions; and then develop sustainable management criteria for managing depletions of ISW. Projects and management actions addressing depletions of ISW may also be proposed to support sustainable groundwater management.*

The DEIR has not demonstrated that it complies with SGMA requirements with regards to ISW depletions because there are no data or analyses presented that: identify potential unreasonable impacts to beneficial uses of surface water; quantify the amount of depletions; or develop mitigations for any potential undesirable results due to Project depletions of San Joaquin River flow.

Comment 58A-6 Cont.

Please feel free to contact me with any questions regarding the material and conclusions contained in this letter.

Sincerely,

Greg Kamman, PG, CHG
Senior Consultant/Ecohydrologist

References

Barlow, P.M. and Leake, S.A. (2012). *Streamflow depletion by wells – understanding and managing the effects on groundwater pumping on streamflow*. U.S Geological Survey, Circular 1376.

California Department of Water Resources (DWR). (2024). *Depletions of Interconnected Surface Water – An Introduction*. Sustainable Groundwater Management Office.

Nemeth, K., Tjernell, K.A., and Lippner, G. (2021). *Revised Draft Central Valley Flood Protection Plan Conservation Strategy 2022 Update*. California Department of Water Resources.

Provost & Pritchard Consulting Group. (2022). *North Kings Groundwater Sustainability Agency Groundwater Sustainability Plan*.

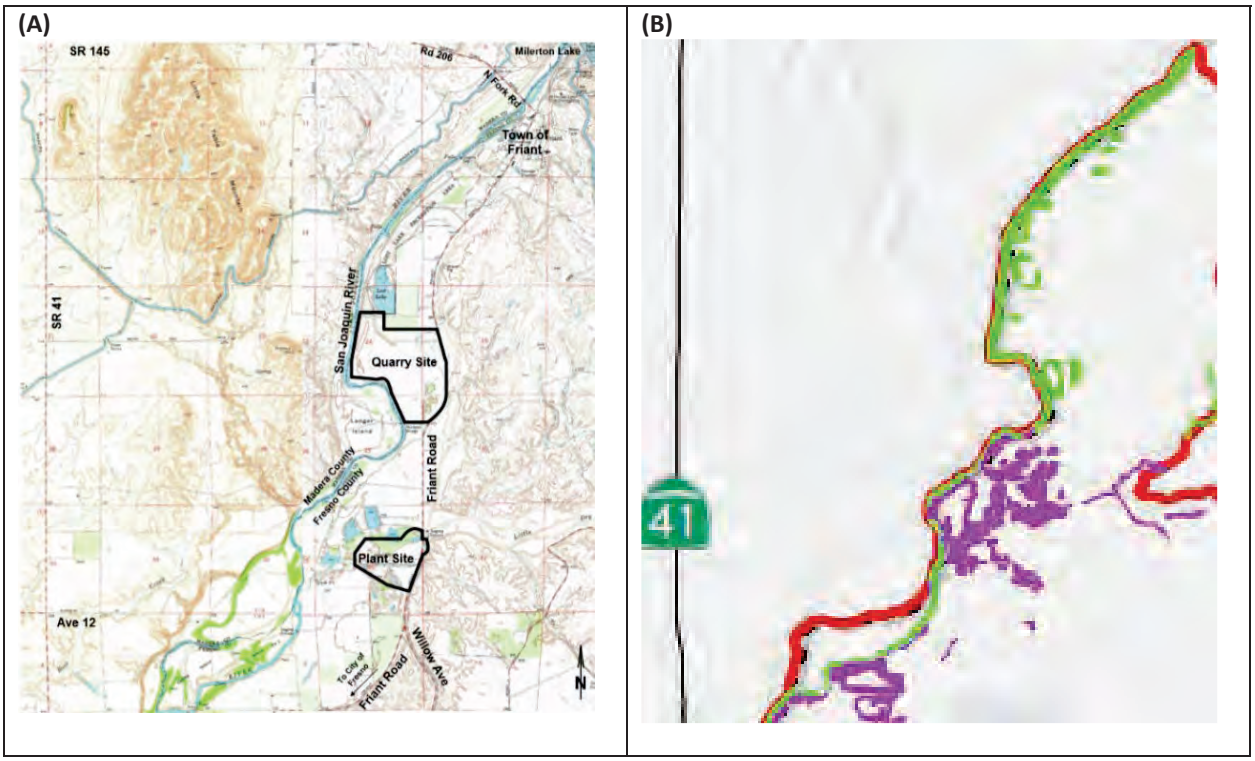

FIGURE 1: (A) Project site locations, modified from Figure 1-2 of DEIR, and (B) Groundwater Dependent Ecosystems, where red lines indicate the boundary of the North Kings Groundwater Sustainability Agency, green shading indicates Possible GDE along the San Joaquin River, and purple shading indicates GDE rejected (depth to groundwater > 300 feet) in the GSP. Sources: A, modified from Figure 1 from DEIR and B, modified from Kings Subbasin Groundwater Sustainability Plan (Provost & Pritchard, 2022).

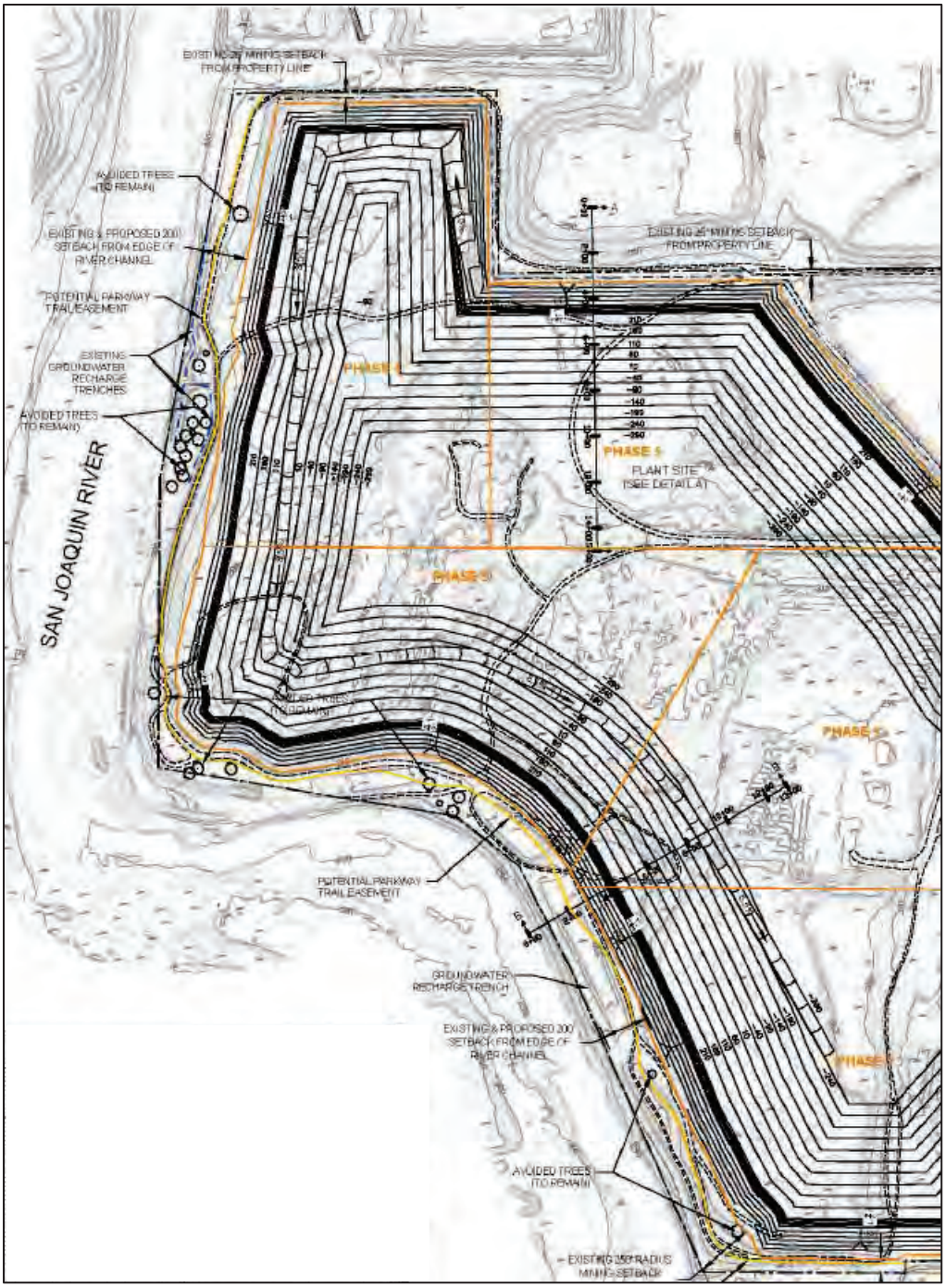

FIGURE 2: Quarry Site Mining Plan with final Reclamation Plan grades (modified from Figure 2-8 of DEIR).

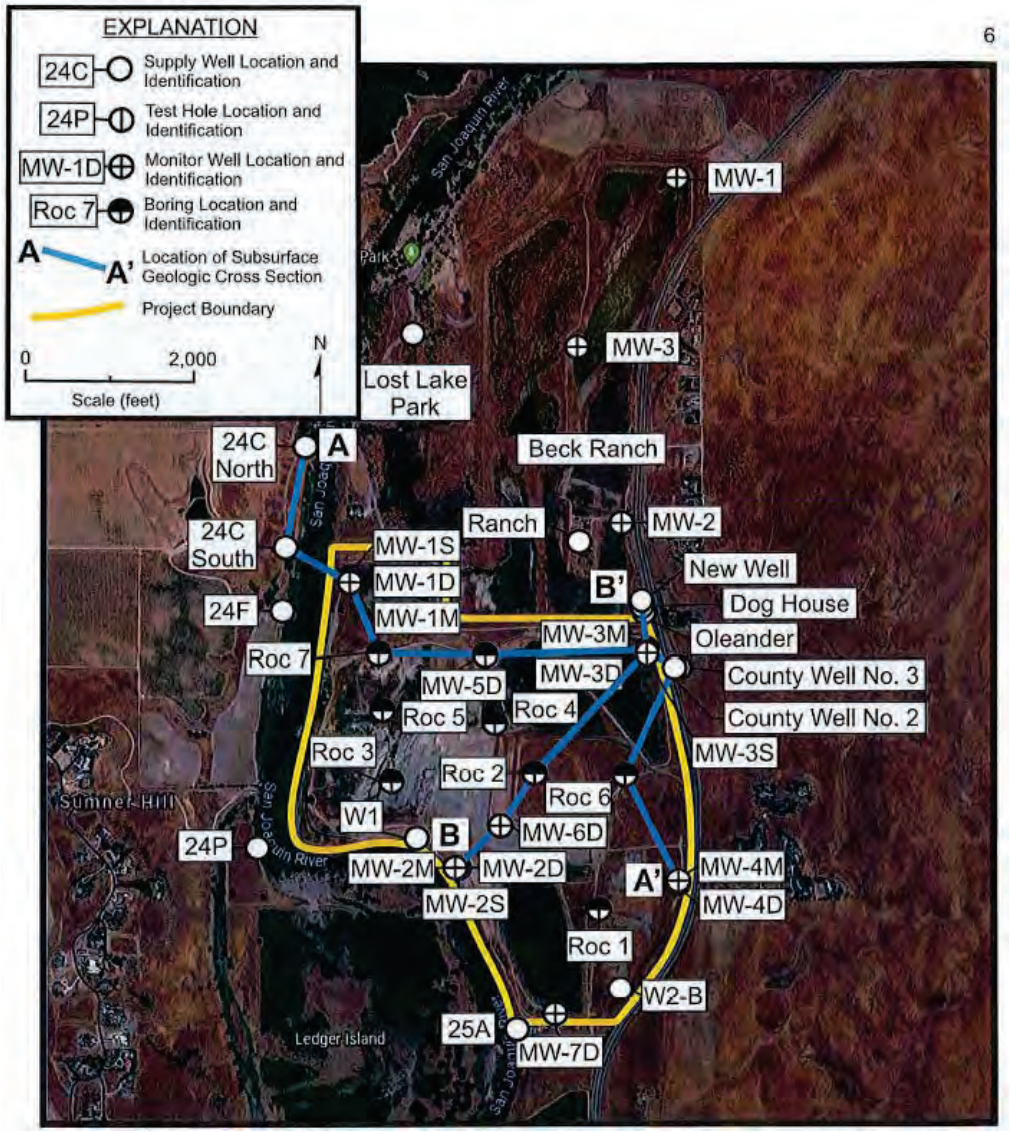

FIGURE 3: Locations of selected wells and borings and subsurface geologic cross sections at Quarry Site (source: Figure 2 of DEIR Appendix G-4).

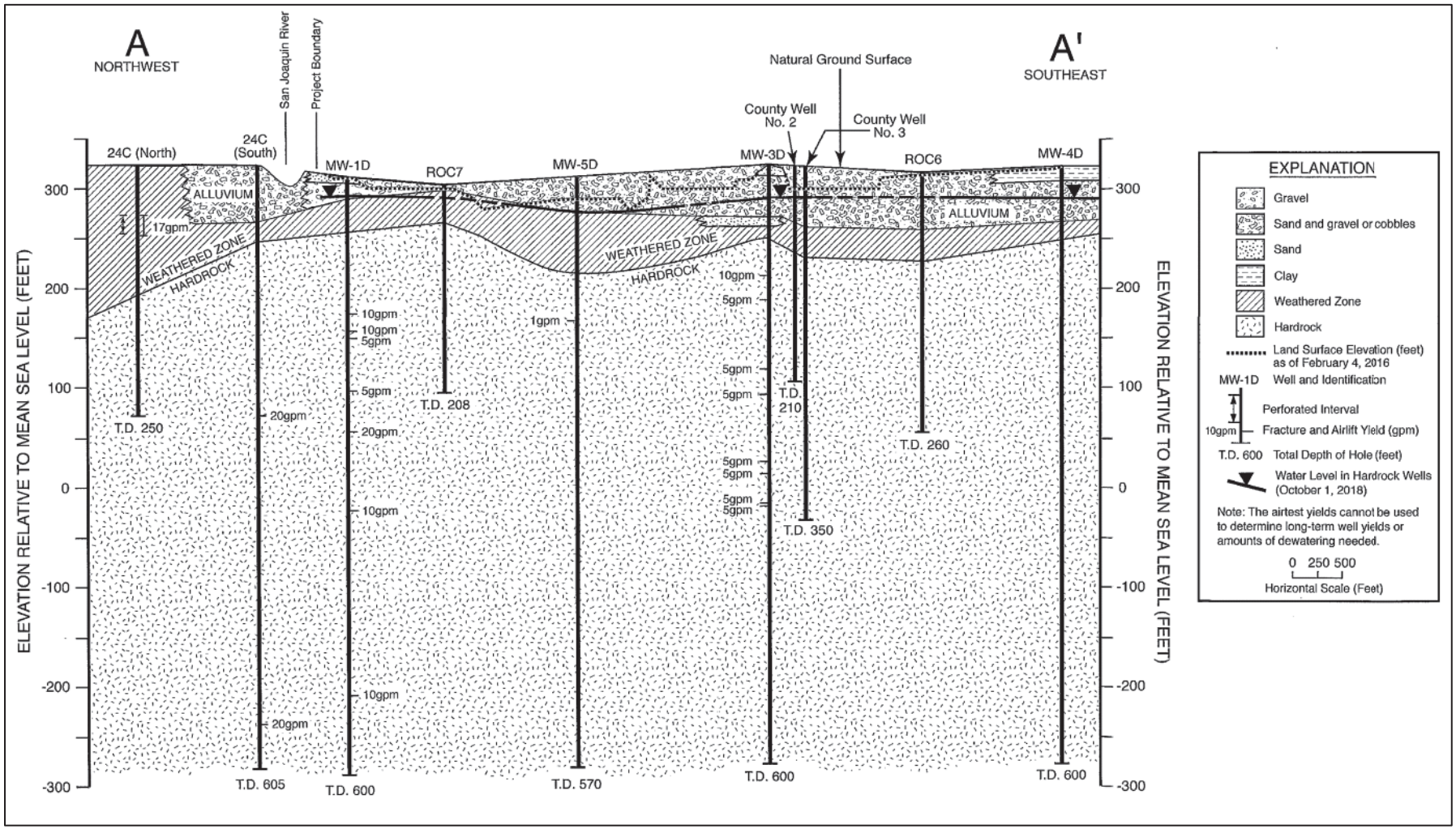

FIGURE 4: Subsurface geologic cross-section A-A' at Quarry Site (source: Figure 2 of DEIR Appendix G-4). See Figure 3 for cross-section alignment.

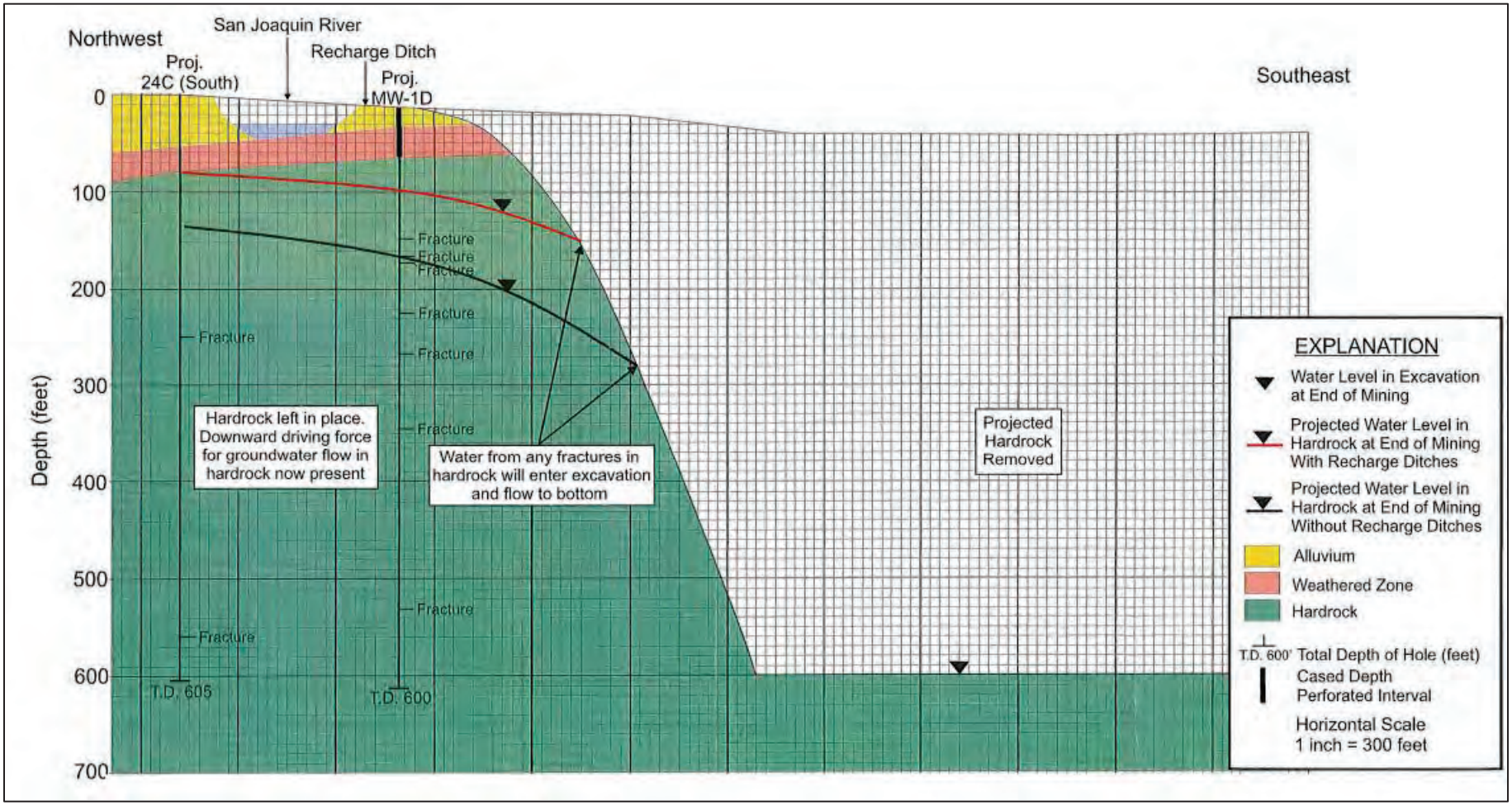

FIGURE 5: Subsurface geologic cross-section through Northwest part of Quarry Site for end of mining (source: Figure 30 of DEIR Appendix G-4).

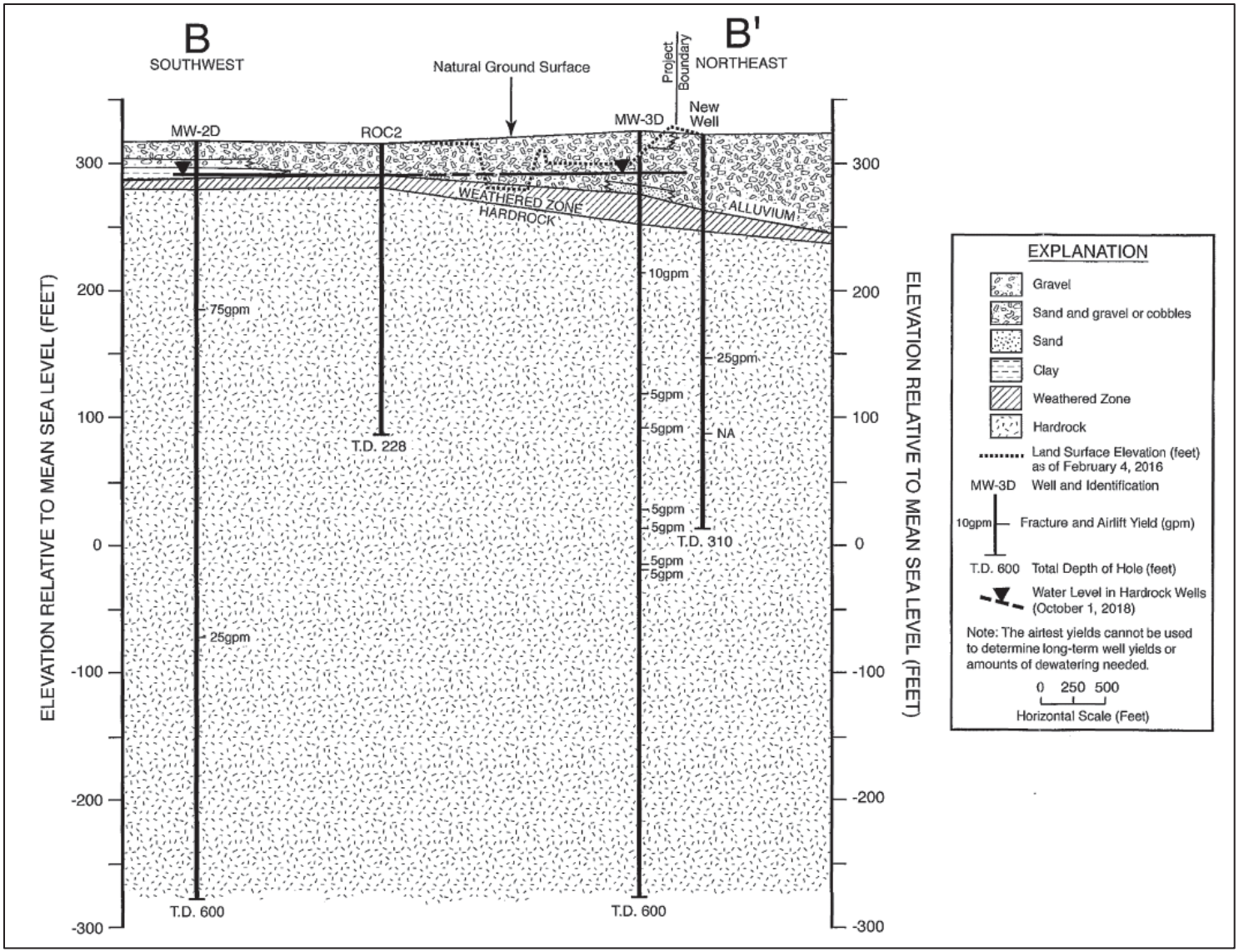

FIGURE 6: Subsurface geologic cross-section B-B' at Quarry Site (source: Figure 4 of DEIR Appendix G-4). See Figure 3 for cross-section alignment.

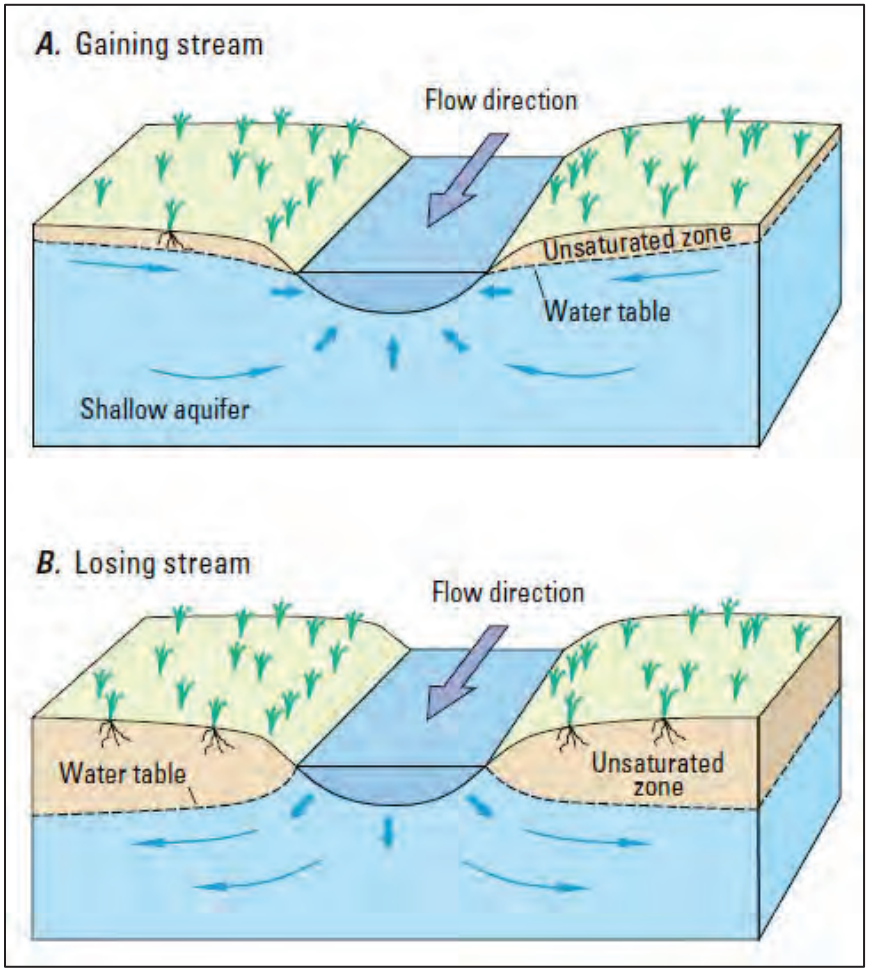

FIGURE 7: Conceptual diagrams of stream interconnected with groundwater: A, Gaining stream reaches receive water from the groundwater system and streamflow increases; and B, Losing stream reaches lose water to the groundwater system and streamflow decreases. Source: Figure 4 from (Barlow and Leake, 2012).

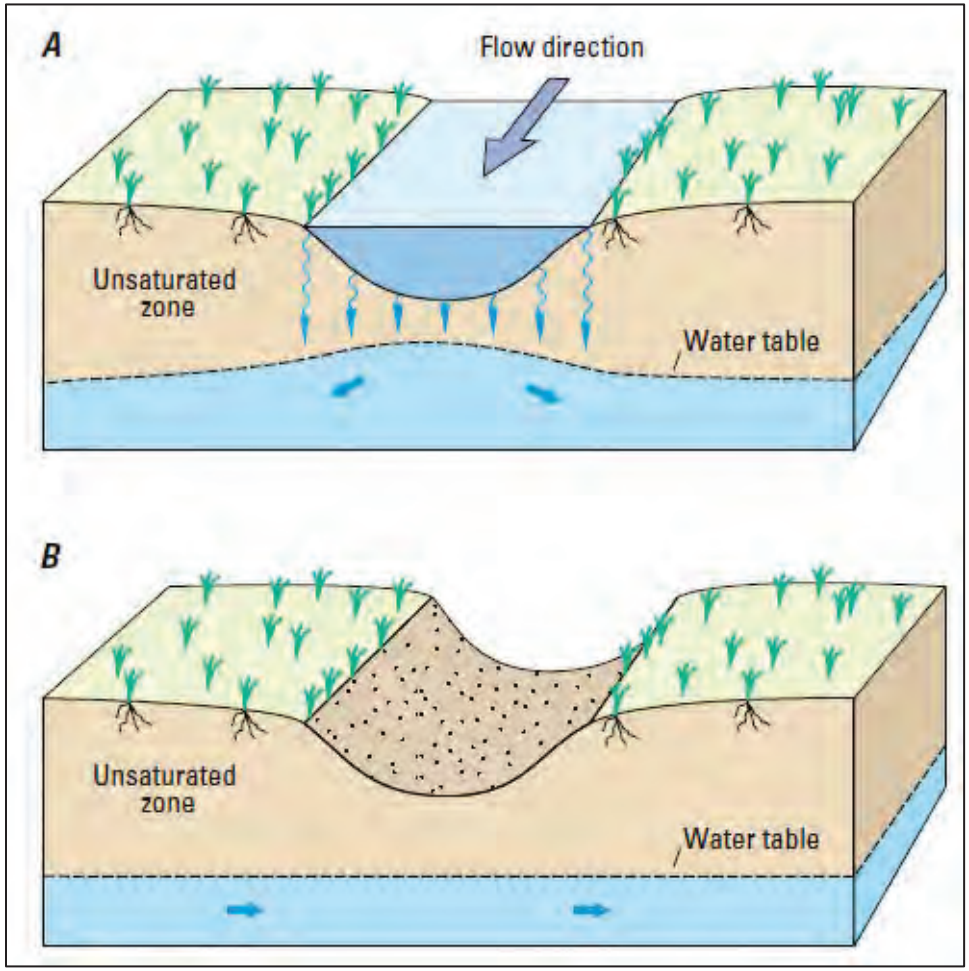

FIGURE 8: Conceptual diagrams of stream disconnected from groundwater: A, streamflow is a source of recharge to the underlying groundwater system; and B, streamflow and groundwater recharge have ceased. Source: Figure 5 from (Barlow and Leake, 2012).

EXHIBIT 1

Hydrology | Hydraulics | Geomorphology | Design | Field Services

Greg Kamman, PG, CHG
Senior Ecohydrologist

Education

MS, 1989, Geology, Sedimentology and Hydrogeology, Miami University, Oxford, OH

BA, 1985, Geology, Miami University, Oxford, OH

Professional Registration

1993, Professional Geologist, California, #5737

1995, Certified Hydrogeologist, California, #360

Professional Experience

cbec, inc., eco-engineering, West Sacramento, CA, Senior Ecohydrologist, 2020-present

Kamman Hydrology & Engineering, Inc., San Rafael, CA, Principal Hydrologist/Vice President, 1997-2020

Balance Hydrologics, Inc., Berkeley, CA , Sr. Hydrologist/ Vice President, 1994-1997

Geomatrix Consultants, Inc., San Francisco, CA, Project Geologist/Hydrogeologist, 1991-1994

Environ International Corporation, Princeton, NJ, Sr. Staff Geologist/Hydrogeologist, 1989-1991

Miami University, Oxford, OH, Field Camp Instructor and Research Assistant, 1986-1989

Greg Kamman is a professional geologist and certified hydrogeologist with over 30 years of technical and consulting experience in the fields of geology, hydrology, and hydrogeology. He specializes in directing and managing projects in the areas of surface and groundwater hydrology, stream and tidal wetland habitat restoration, water supply and water quality assessments, water resources management, and geomorphology. Mr. Kamman has worked extensively throughout California's coastal watersheds and estuaries, and on multiple projects in Oregon and Hawaii.

Mr. Kamman's experience and expertise includes evaluating surface and groundwater resources and their interaction, stream and wetland habitat restoration assessments and design, characterizing and modeling basin-scale hydrologic and geologic processes, assessing watershed hydraulic and geomorphic responses to land-use change , and designing and conducting field investigations characterizing surface and subsurface hydrologic and water quality conditions. Greg commonly works on projects that revolve around sensitive fishery, wetland, wildlife, and/or riparian habitat enhancement within urban and rural environments. Mr. Kamman performs many of these projects in response to local, state (CEQA) and federal statutes (NEPA, ESA), and other regulatory frameworks. Mr. Kamman frequently applies this knowledge to the review and expert testimony on state and federal water operation plan EIR/EIS reports, Groundwater Sustainability Plans, Habitat Conservation Plans, and biological assessments.

Mr. Kamman is accustomed to working multi-objective projects as part of an interdisciplinary team including biologists, engineers, planners, architects, lawyers, and resource and regulatory agency staff. Mr. Kamman is a prime or contributing author to over 360 technical publications and reports in the discipline of hydrology, the majority pertaining to the protection and enhancement of aquatic resources. Mr. Kamman has taught the following courses: stream restoration through U.C. Berkeley Extension (2001-2008); wetland hydrology through San Francisco State University's Romberg Tiburon Center (2007 and 2012-2014); and presented webinars (2020) to California Water Boards staff on hydrologic and hydraulic modeling. He has devoted his career to the protection, enhancement and sustainable management of water resources and associated ecosystems.

SELECTED EXPERIENCE

Floodplain Management Projects

Flood Reduction, Mitigation Planning, and Design on Yreka Creek, Siskiyou County, CA
City of Yreka as subcontractor to WRA, Inc., 2008-2010

Mr. Kamman completed a series of field and hydraulic model investigations for restoration planning and design along Yreka Creek to reduce flood hazards and potential damage to the City's water treatment plant and disposal field infrastructure. This work also addresses and satisfies dike repair mitigation conditions stipulated by state resource agencies. While achieving these goals, Mr. Kamman tailored analyses and study objectives to assist the City in: enhancing the ecological floodplain restoration along Yreka Creek; providing opportunities for expanded public access and trail planning consistent with the goals of the Yreka Creek Greenway Project; and improving the water quality of Yreka Creek.

Key elements of this work included: review and synthesize existing information; identify and analyze the feasibility for three conceptual alternatives; and conceptual design and report preparation. Funding for implementation of restoration work over such a large area was a significant concern to the City. Therefore, designs identify and define phasing in a fashion that gives the City flexibility in implementation.

SELECTED EXPERIENCE *(CONTINUED)*

West Creek Drainage Improvement Assessment, Marin County, CA
Marin County Flood Control, 2006-2008

Mr. Kamman prepared a study focused on characterizing existing flood conditions and developing and evaluating flood reduction measures along West Creek in Tiburon. The work was completed through the implementation of hydrologic and hydraulic feasibility and design assessments. The conceptual design and analysis of potential flood reduction strategies (alternatives) was completed through the development of a HEC-RAS hydraulic model that simulates historic, existing and proposed project flood conditions. It was intended that the conceptual design developed under this scope of work would be of sufficient detail and quality to initiate project permitting and the environmental compliance process and documentation. Opportunities for riparian corridor and aquatic habitat enhancement were also considered and integrated into the conceptual design. Mr. Kamman also developed and assessed six alternative flood hazard reduction measures. The hydraulic model results for each alternative were compared against baseline conditions in order to evaluate their ability to alleviate flood hazards.

Gallinas Creek Restoration Feasibility Assessment, Marin County, CA
San Francisco Bay Institute, 2003-2005

Mr. Kamman completed a feasibility assessment for restoration of Gallinas Creek in northern San Rafael. Restoration will require removal of a concrete trapezoidal flood control channel and replacement with an earthen channel and floodplain in a "green belt" type corridor. Work included the collection of field data and development of a HEC-RAS hydraulic model to evaluate and compare existing and proposed project conditions. Designs must continue to provide adequate flood protection to the surrounding community. The study also includes and evaluation of existing habitat values, potential habitat values, and restoration opportunities and constraints.

Hydrologic and Hydraulic Evaluation for Trinity County Bridge Replacement, Trinity County, CA
Trinity County Planning Department, 2002

Mr. Kamman completed technical peer review of peak flow estimates and hydraulic design parameters associated with the replacement of 4 bridges across the upper Trinity River in Trinity County, California. A primary study component was accurately predicting the magnitude and frequency of flood releases from Trinity Dam. Numerous flood frequency analytical approaches were evaluated and used throughout this study.

Restoration of Lower Redwood Creek Floodway and Estuary, Humboldt County, CA
California State Coastal Conservancy and Humboldt County DPW, 2002-2003

Mr. Kamman provided technical review for the development of a hydraulic model to evaluate river and estuary restoration alternatives along the lower portions of Redwood Creek between Orrick (Highway 1) and the Pacific Ocean. This work was completed to evaluate the feasibility for creek/estuary restoration alternatives developed by the County, and effects on flood hazards along this flood-prone reach.

In order to better address and evaluate the current flood hazards along the entire floodway and identify potential flood hazard reduction measures, Mr. Kamman was retained to update HEC-2 models previously prepared by the Army Corps, and to evaluate the impacts of vegetation encroachment (increased roughness) and sediment deposition on floodway conveyance. Mr. Kamman expanded the Corps hydraulic model with newly completed channel surveys and channel roughness observations. The impetus for this work was to assist the County in identifying mutually beneficial strategies for ecosystem restoration and flood hazard reduction. Technical work was completed under close coordination and communication with county engineers. Study results and findings were presented at public meetings of local area landowners and stakeholders.

Tembladero Slough Small Community Flood Assessment, Monterey County, CA
Phillip Williams & Associates, Ltd., 1997

Mr. Kamman completed a flood information study of Tembladero Slough near Castroville on behalf of the San Francisco District Corps of Engineers. The purpose of this work was to identify and document local flood risks existing in the community and propose potential floodplain management solutions as part of the Corps 1995/1997-flood recovery process. Work centered on conducting a field reconnaissance, reviewing available historical data, and conducting discussions/interviews with local landowners and agency personnel.

Fluvial Projects

Muir Woods National Monument Bank Stabilization Plan for Conlon Creek, Marin County, CA
Golden Gate National Parks Conservancy (GGNPC), 2018-present

Mr. Kamman developed a grading and drainage plan for the Conlon Avenue Parking Lot, located adjacent to Redwood Creek and sensitive Coho salmon habitat. More recently, he has assisted GGNPC and the NPS in assessing the planning and design for creek bank stabilization and ecological enhancement at a failed culvert on a tributary channel at the project site. This work includes constructing a HEC-RAS model to evaluate: culvert removal and channel design; fish passage; and water quality impacts. Work is currently in development of 50% engineering design.

Hydrology and Hydraulic Assessments for Design of Butte Sink Mitigation Bank Project, Colusa County, CA
WRA, Inc., 2017-2018

Mr. Kamman was retained to provide hydrology and hydraulic modeling support in the development of design and Draft Prospectus for the Butte Sink Mitigation Bank (Bank). This work entailed developing the necessary hydrology information, hydraulic model and documentation to support further design, environmental compliance and agency approvals/permitting of the Bank. The main objective of work was to develop a design that provides the necessary ecological conditions and functions for successful establishment and operation of the Bank.

Lagunitas Creek Salmonid Winter Habitat Enhancement Project, Marin County, CA
Marin Municipal Water District, 2013-2018

Mr. Kamman designed and led a study to evaluate opportunities to enhance winter habitat for coho and other salmonids in Lagunitas Creek and its largest tributary - Olema Creek. This work was done as a two-phase assessment and design effort. The first phase (completed in 2013) included a winter habitat assessment to evaluate existing juvenile salmonid winter habitat in Lagunitas Creek and lower Olema Creek. The results of this assessment were used to prioritize winter habitat needs, and identify opportunities for winter habitat enhancement to increase

SELECTED EXPERIENCE *(CONTINUED)*

the winter carrying capacity of coho salmon and steelhead. The second phase (completed in 2017) consisted of a designing winter habitat enhancements. These enhancements focused on restoring floodplain and in-channel habitat structures. Winter habitat enhancement work also needed to consider potential impacts to or benefits for California freshwater shrimp (Syncaris pacifica), a federally endangered species.

This work included field reconnaissance, topographic surveys and the preparation of final design drawings at nine different project sites. An overall self-maintaining design approach was developed to guide individual project plan, with minimal earthwork and disturbance to existing riparian and wetland habitat. Self-sustained, natural evolution of a multi-thread channel within a more active floodplain is a desired outcome of project actions. Design elements and structures are intended to enhance or restore natural hydrologic processes to promote geomorphic evolution of more active high flow (side) channels and floodplain. Design elements include construction of 24 individual log structures.

Lower Miller Creek Management and Channel Maintenance, Marin County, CA
Las Gallinas Valley Sanitary District, 2013-2015

Mr. Kamman was commissioned to formulate and implement a plan for sediment removal and improved flood flow conveyance in the Lower Miller Creek channel. The need for improved flood and sediment conveyance is driven by the following factors. Progressive accumulation of course sediment in the project reach had reduced area wide discharge efficiencies along Miller Creek and at District outfalls. The District had an immediate need to dredge Lower Miller Creek to protect existing operations and facilities. Miller Creek supports a population of federally listed Steelhead, and adjacent wetland areas potentially support other state and federally listed special status species. Therefore, permitting requirements and cost efficiency required minimizing the extent and frequency of channel excavation/maintenance that may adversely impact habitats in the wetland and riparian corridor.

The design objective of the project was to define and optimize an integrated channel maintenance, flood, and sediment management plan, that protects existing facilities from stream and coastal flood hazards. The plan's objective was to minimize costs and ecological impacts of future anticipated and designed maintenance activities required under District operations. Working with District Staff, Mr. Kamman developed a suite of potential project alternatives and identified a preferred approach. Mr. Kamman completed all CEQA compliance (IS/MND) and permitting. Mr. Kamman also managed and directed development of engineered drawings and assisted in bid document preparation.

Mr. Kamman provided site assessment, long term management planning and channel maintenance support to the Sanitary District to maintain flood conveyance, manage sediment aggrading at District outfalls, and improve ecological values in the intertidal Bayland reaches of Miller Creek. The creek supports multiple federal and state listed endangered species. Initial work included completing hydraulic and geomorphic assessments to characterize causes of channel aggradation, and quantify sediment yields. Assessments included evaluation of climate change impacts on habitat and flood hazards, and water quality modeling of District outfalls to quantify tidal exchange and dilution. Based on this analysis and supporting biological resource assessments, Mr. Kamman identified alternatives for channel maintenance, performed a cost benefit assessment of dredging alternatives, and is assisted the District in developing short and long term management objectives. Mr.Kamman also led a multidisciplinary design team in the preparation of engineering plans and specifications as well as permits and environmental compliance documents.

Vineyard Creek Channel Enhancement Project, Marin County, CA
Marin County Department of Public Works, 2007-2013

Mr. Kamman managed the preparation of designs and specifications for a flood conveyance and fish habitat and passage improvement project on Vineyard Creek. Creek corridor modifications included replacing the box culvert at the Center Road crossing with a free span bridge or bottomless arch culvert (civil and structural design by others), providing modifications to the bed and bank to eliminate erosion risks to adjacent properties and improve water quality, promoting active channel conveyance of both water and sediment, and providing improved low and highflow fish passage, improved low flow channel form and enhanced in-stream habitat, repairing eroding banks, and expanding/enhancing adjacent channel floodplains. The riparian corridor was replanted to provide a low-density native understory, "soft" bank erosion protection, and increased tree canopy along the tops of banks. Mr. Kamman prepared the JARPA for the project and conducted permit compliance and negotiations with all participating resource agencies. Designs and permitting also address the known presence of Native American artifacts. This work was contracted under an expedited design schedule and phased construction was initiated the summer of 2008 and continued the summer of 2009.

Bear Valley Creek Watershed and Fish Passage Enhancement Project, Marin County, CA
The National Park Service and Point Reyes National Seashore Association, 2005-2013

Working on behalf of the NPS and PRNSA, Mr. Kamman completed a watershed assessment and fish passage inventory and assessment for Bear Valley Creek. Work included a geomorphic watershed assessment and completing field surveys and hydraulic modeling (including flood simulations) of ten road/trail crossings to identify and prioritize creek and watershed restoration efforts while considering and addressing current flooding problems at Park Headquarters – a major constraint to channel restoration efforts that would likely exacerbate flooding. Mr. Kamman also completed a suite of conceptual restoration designs (Phase 1) including: the replacement of two county road culvert crossings with bridges; channel creation through a ponded freshwater marsh (former tidal marsh); and replacement of 4 trail culverts with prefabricated bridges; and associated in-channel grade control and fishway structures. Engineered drawings and specifications were also developed for some of these sites to assist PORE with emergency culvert replacements after damages sustained during the New Year's Eve flood of 2005. Mr. Kamman also directed geotechnical, structural and civil design of project components.

Two projects were completed in 2006 on emergency repair basis resulting from flood damages suffered during the New Year's Eve storm of 2005. The two most recent projects were constructed in 2013, consisting of a large bank repair and adjacent to main access road/trail and culvert replacement further upstream on same road. The bank repair utilized bioengineering approaches including engineered log revetments and log diversion vanes.

SELECTED EXPERIENCE *(CONTINUED)*

Kellogg Creek Restoration Project, Contra Costa County, CA
Olberding Environmental on behalf of the Contra Costa County Water District, 2012-2013

Mr. Kamman led the development of PS&E to restore 3,000 linear feet of riparian and associated creek corridor habitat. Project was designed as compensatory mitigation for direct and indirect impacts to jurisdictional waters from the Los Vaqueros Reservoir Expansion Project that Contra Costa Water District. Work included field investigations and data analysis to characterize hydrologic/ geomorphic conditions and numerical modeling to optimize desired inundation and hydroperiods. Work was completed under subcontract to.

Miller Creek Sanitary Sewer Easement Restoration, Marin County, CA
Las Gallinas Valley Sanitary District, 2010

Working on behalf of the District, Mr. Kamman completed field surveys and technical feasibility studies to develop engineering plans and specifications for a stream bank restoration project to protect an exposed sanitary sewer pipeline, stabilize incised banks, and promote an ecologically healthy stream corridor along an approximately 50 linear foot damaged reach of Miller Creek. The design includes backfill and materials to accommodate construction of a vegetated stabilized slope. The eroded bank repair included design of a 1:1 Envirolok vegetated slope with geogrid reinforced soil lifts extending eight to ten feet back from the slope face. One-quarter-ton rock will be placed in front of the Envirolok wall at the toe of the reconstructed bank to provide added scour protection. In order to perform the work, the project site will be dewatered. An existing felled tree perpendicular to the creek flow will be relocated and secured into the right creek bank with root wad remaining in active channel. All work on the bank and within the creek bed must be completed pursuant to project permits due to presence of steelhead trout.

California Coastal Trail Planning and Design at Fitzgerald Marine Reserve, San Mateo County, CA
WRA, Inc., 2008-2009

Mr. Kamman provided hydrology and hydraulics expertise in the planning and design for the 0.25-mile segment of the California Coastal Trail at the Fitzgerald Marine Reserve. The project was overseen by the San Mateo County Parks Department. This segment of Coastal Trail provides improved access from the trailhead to the beach as well as a free span bride over Vicente Creek. Greg completed the field surveys and hydraulic modeling to assist an interdisciplinary team to design the project. Understanding the hydrology of Vicente Creek and quantifying flood conditions was critical to successfully designing and constructing the free span bridge. He also evaluated how creek hydrology and coastal wave processes interact at the beach outfall in order to identify opportunities and constraints to beach access improvements (which will include crossing the creek on the beach) during both wet and dry season conditions in order to evaluate both permanent and seasonal crossing design alternatives.

Hydrologic Assessment and Conceptual Design for Conservation and Wetland Mitigation Bank Project, Stanislaus County, CA
WRA, Inc., 2009

Working as a subcontractor to WRA, Inc., Mr. Kamman provided hydrology, geomorphology and engineering support for the planning and design for a Conservation and Wetland Mitigation Bank on the San Joaquin River, in the Central Valley near Newman, California. The property is currently owned by the Borba Dairy Farms. The primary objective of the study was to characterize the hydrologic and geomorphic controls on the spatial distribution of habitat types. To meet this objective, Mr. Kamman's assessment included: (1) collecting and synthesizing hydrologic data to characterize existing and historic streamflow, geomorphic and shallow groundwater conditions; (2) filling a data gap by collecting topographic data of hydrologic features; (3) developing a hydraulic model capable of predicting water surface profiles for a range of design flows; and (4) quantifying the linkage between surface water/groundwater conditions and specific vegetation communities and habitat types through implementation of reference site assessments. Mr. Kamman also provided conceptual design and permitting support in evaluating habitat enhancement and creation opportunities on the site.

Redwood Creek Floodplain and Salmonid Habitat Restoration, Marin County, CA
Golden Gate National Recreation Area and Golden Gate Parks Conservancy, 2005-2008

Mr. Kamman lead development of a preferred project alternative and final project design drawings and specifications for a floodplain and creek restoration and riparian corridor enhancement effort on lower Redwood Creek above Muir Beach at the Banducci Site. A primary objectives of the project was to: improve salmonid passage/rearing/refugia habitat; riparian corridor development to host breeding by migratory song birds; and wetland/pond construction to host endangered red-legged frog. The preferred design includes: excavation along the creek banks to create an incised flood terrace; engineered log deflector vanes; removing and setting back (constructing) approximately 400-feet of levee; creating in- and off-channel salmonid rearing and refugia habitat; reconnecting tributary channels to the floodplain; and creating California red-legged frog breeding ponds. Designs were completed in 2007 and the project constructed in the summer of 2007.

Considerable hydraulic modeling was completed to evaluate and develop means to help reduce chronic flood hazards to surrounding roadways and properties. Alternatives that included set-back levees and road raising were developed and evaluated. Detailed and careful hydraulic (force-balance) analyses and computations were completed as part of engineered log deflector designs. These were unique and custom designed structures, building on past project efforts and in consultation with other design professionals.

This project demonstrates Mr. Kamman's ability to work closely with the project stakeholders to develop a preferred restoration alternative in a focused, cost-effective and expedited fashion. This was achieved through close coordination with the NPS and the effective and timely use of design charrette-type meetings to reach consensus with participating stakeholders. Conceptual through full PS&E were completed on-time and on-budget in 2007 and was project constructed in the fall of 2007. Mr. Kamman worked closely with NPS staff to "field fit" the project, by modifying grading plans to protect existing riparian habitat. Mr. Kamman also provided construction management and oversight to floodplain grading and installation of engineered log structures. Based on field observations, the project is performing and functioning as desired.

Pilarcitos Creek Bank Stabilization Project, San Mateo County, CA
TRC Essex, 2006-2007

Mr. Kamman directed field surveys and technical modeling analyses to develop restoration design alternatives for a Bank Stabilization Project on Pilarcitos Creek

SELECTED EXPERIENCE *(CONTINUED)*

in unincorporated San Mateo County, California. This work included hydrology and hydraulic design and preparation of plan sheets and technical specifications as well as a revegetation plan. Due to the importance of protecting an existing gas mainline, the design package will be completed in close coordination with TRC Essex geotechnical staff and revegetation subcontractor and PG&E civil staff. Design feasibility analyses focused on developing hydraulic design criteria for the project, including: estimates of design flood flow magnitudes (2-, 5-, 10-, 25-, 50- and 100-year floods); water surface elevation estimates for a suite of design floods; associated average channel velocities and shear stresses; and estimates for riprap sizing for channel bank toe protection. Plan sheets, technical specifications and cost estimates were provided for review and approval.

Watershed Assessments

Evaluation of Project Impacts on Oregon Spotted Frog, Klamath County, OR
Oregon Water Watch and Earthjustice, 2016-2019

Mr. Kamman designed a suite of hydrologic, hydraulic and geomorphic studies to evaluate proposed change operations of the Crane Prairie, Wickiup and Crescent Lake dams and reservoirs as related to harm to Oregon spotted frogs. Work began with analyzing impacts associated with proposed water delivery operations and developing a proposed alternative prioritizing protection and enhancement of frog habitat. This work followed with a technical review and critique of the USFWS's Biological Assessment. Work included preparation of four declarations for the clients.

Tennessee Hollow Creek Riparian Corridor Restoration, San Francisco County, CA
Presidio Trust, 2001-present

Mr. Kamman has been leading and assisting the Trust and Golden Gate National Recreation Area (GGNRA) in the planning and design on over a dozen multi-objective riparian corridor restoration and watershed management projects in the Tennessee Hollow/Crissy Marsh watershed since 2001. Specific project objectives include: daylighting creeks; riparian corridor restoration; expanding Crissy Marsh; enhancing recreation, education, archeological, and cultural resource opportunities; improving water quality discharges to San Francisco Bay; and remediation of numerous landfills within the watershed. Typical initial phases of work focus on characterizing surface and groundwater conditions within each project area and identifying opportunities and constraints to restoration of natural wetlands and creek/riparian corridors. Notable challenges of this work include restoring heavily disturbed natural resources in an urban setting while integrating designs with recreation, archeology/cultural resources, education and remediation programs. Mr. Kamman has acted as lead hydrologist and designer on eight separate reaches in the 271-acre Tennessee Hollow Creek watershed and several other projects within and in the vicinity of Mountain Lake.

All task authorizations under these on-call and individual design contracts and included hydrology and water quality assessments and conceptual restoration planning and design. The project areas overlapped both the Presidio Trust and NPS-GGNRA management areas. Preliminary construction cost estimates for project alternatives within the Tennessee Hollow watershed range from $10- to $20- million. Several restoration projects are also tied to providing mitigation for the current San Francisco Airport expansion and Doyle Drive Seismic Improvement projects. Several projects have been constructed since 2012 (Thompson's Reach, El Polin Loop), two projects (East Arm Mtn. Lake and YMCA Reach) were constructed in 2014, and MacArthur Meadow restoration in 2016.

This work illustrates the Mr. Kamman's ability to complete a broad variety of hydrologic analyses, including: multiple years of rigorous and thorough surface water and groundwater hydrologic and water quality monitoring throughout the entire watershed to characterize and quantify existing hydrologic conditions; development of a detailed watershed-scale water budget for existing and proposed land-used conditions (capturing existing and proposed vegetation cover types and land use activities) to calculate groundwater recharge estimates input into the numerical watershed model; preparation of EA sections on water resources and water quality (NEPA compliance) regarding Environmental Conditions, proposed Impacts, and Proposed Mitigations associated with the project; preparing detailed alternative plans; and coordination and preparation of engineered plans/specifications for construction. All work was completed on budget and in a timely fashion.

Mountain Lake Water Budget, San Francisco County, CA
Presidio Trust, 2012-2017

Mr. Kamman was retained to develop a water balance model for Mountain Lake in the Presidio of San Francisco. Through development of a water balance model, the Trust seeks to understand: the major source(s) of inflow to both Mountain Lake; anticipated seasonal (monthly) changes in water level relative to various outflow assumptions; and the relationship of surface and groundwater interaction. This information gained from this study will be used to: 1) better understand and manage lake levels for ecological habitats; 2) identify flood storage capacity of Mountain Lake and fluctuations in lake level under various storm conditions; 3) better understand and maintain wetland habitat in the east arm; and 4) complete mass balance calculations to assess water quality in and feeding into the lake.

To implement this study, Mr. Kamman developed a water budget model to identify and quantify the primary water inputs and outputs to the lake and determine major controls over water storage. Primary water budget variables analyzed includes: precipitation; evaporation/evapotranspiration; groundwater exchange; and surface runoff. This study also included a long-term field investigation completed between 2012 and 2016 to: identify all point source inputs such as culverts and drainage outlets; identify diffused surface runoff inputs from surrounding lands, including a golf course; better characterizing the function and performance of the primary lake outfall structure; monitor groundwater levels surrounding the lake; and continuously monitor lake water level and storage over a mult9i-year period. These data were used to quantify water budget variables used to build the water budget model. Precipitation and barometric pressure data used in the model was provided by the Trust maintained weather station. Model daily evaporation estimates came from a variety of local area gauges maintained by state agencies.

The water budget model developed for this study is successful in accurately simulating historic water level conditions. The model using a daily time-step appears more accurate than model using a weekly time-step, but both provide reasonable agreement with observed conditions. The model is highly sensitive to groundwater exchange with the lake. The water budget is also a proven useful tool for the design and analysis of improvements to the lake outfall structure and establishing flood storage needs to protect the adjacent highway.

SELECTED EXPERIENCE *(CONTINUED)*

Cordilleras Creek Hydrologic Assessment, San Mateo County, CA
City of Redwood City, 2002-2003

Mr. Kamman assisted the Cordilleras Creek Watershed Coordinator in planning, seeking funding, and implementing a hydrologic and biologic assessment of the Cordilleras Creek watershed. Work completed included completing a full creek reconnaissance and channel stability assessment, preparation of a watershed assessment work plan, presentations at public meetings, and study/review of flooding issues in the watershed. Challenges faced in this predominantly privately owned watershed include removal of numerous fish passage barriers and educating/coordinating property owners.

Capay Valley Hydrologic and Geomorphic Watershed Assessment, Yolo County, CA
Yolo County RCD, 2008-2010

Mr. Kamman designed and supervised a hydrologic, geomorphic watershed assessment, and conceptual restoration design for the Capay Valley segment of Lower Cache Creek . Funding for the project was from a CALFED Watershed Program grant. The Capay Valley reach of Cache Creek experiences considerable stream bank erosion, which contributes to downstream sedimentation. The channel instability also threatens adjacent homes and can negatively impact the riparian habitat along the creek that functions as an important wildlife corridor from the Western Coastal Range to the Yolo Bypass. Additionally, a significant proportion of methylmercury transported into the Bay-Delta originates from the Cache Creek watershed. The main goal of this proposed study is to address both the causes and the aforementioned consequences of bank erosion.

The assessment was designed to evaluate and quantify changes in hydrologic and geomorphic conditions in response to historical changes in land-use and water development (e.g., diversions, reservoir construction, groundwater pumping, etc.). This assessment also evaluated how historic human induced changes in hydrologic and geomorphic conditions affect riparian ecology in terms of the lost or altered floodplain area, character, and inundation frequency. A key product of this assessment was to distinguish between “natural” and “accelerated” bank erosion, and to identify the underlying causes (both natural and anthropogenic) so that appropriate solutions can be developed. Desired outcomes of the study included: reduce bank erosion by developing restoration designs for typical trouble sites; produce a ranking system to prioritize sites for stabilization and restoration; contribute to community education through watershed science education and the Yolo STREAM Project outreach program; improve water quality through reduction in accelerated erosion; and contribute to riparian corridor restoration and support the RCD’s Wildlife Conservation Board funded efforts to remove non-native tamarisk and around from the creek corridor. Work was completed through a broad spectrum of field and analytical investigations that received close review by the RCD, stakeholders, and a Technical Advisory Committee.

Ventura River Unimpaired Flow and Habitat Assessment, Ventura County, CA
City of Buenaventura and Nautilus Environmental, 2006-2007

Mr. Kamman completed a hydrology feasibility assessments as part of evaluating the reuse of Ojai Valley Sanitary District (OVSD) effluent for other beneficial uses. Currently, OVSD discharges treatment plant effluent to the lower Ventura River. The City and OVSD recognize that the reduction in the discharge of treated effluent to the Ventura River could have an environmental effect on sensitive and endangered species. In light of these concerns, this study was conducted to determine if a reuse project is feasible without significant environmental harm.

The assessment included hydrologic and geomorphic field and analytical assessments of past (unimpaired), current and proposed surface and groundwater flow conditions over a wide range of dry- through wet water year-types. The main objective if these analyses was to determine the linkage to water quality and aquatic habitat conditions including: flow durations; extent of gaining vs. losing reaches; low flow inundation/wetted area; and influence on barrier beach dynamics. Mr. Kamman collaborated with a team of other professionals to prepare a facility plan documenting the analyses and conclusions of respective water recycling investigations.

Hydrologic Analysis of FERC Minimum Flows on Conway Ranch Water Rights, Mono County, CA
Law Office of Donald Mooney, 2001-2002

Mr. Kamman completed a hydrologic analysis to evaluate if FERC’s proposed Minimum Flow Plan for Mill Creek would interfere with the exercise of the Conway Ranch’s water rights from Mill Creek. The approach to this analysis was to quantify the duration of time the Conway Water right was met under historic gaged and simulated proposed Minimum Flow Plan conditions. The primary objective of the analysis was to evaluate impacts during the winter period when flows are typically limited due to water storage as snow pack. Minimum Flow Plan conditions were simulated by developing a spreadsheet model that redistributes actual (historic) Lundy Lake releases in a fashion that maintains a minimum flow of 4 cfs to Mill Creek to accommodate the downstream Southern California Edison’s (SCE) power plant. The analysis period for both historic and simulated Minimum Flow Plan conditions consisted of water years (WY) 1990 through 1998 to capture an exceptionally diverse range of wet and dry year-types.

The primary method used to quantify changes in flow between historical and simulated Minimum Flow Plan conditions was to prepare and compare flow duration curves for each condition during both the winter and summer periods during a variety of water year types. Model results were tabulated for each conditions to determine the differences in the percentage of time target flows were equaled or exceeded. Based on these findings, Greg was contracted to complete more in-depth monthly modeling.

Groundwater Management Projects

Assessments of Groundwater-Surface Water Interaction, Stanislaus County, CA
The Law Offices of Thomas N. Lippe, APC and California Sportfishing Protection Alliance, 2015-present

Since 2015, Mr. Kamman has been assessing groundwater conditions within Stanislaus County and evaluating potential impacts of groundwater pumping on surface water flow and aquatic habitat of the Stanislaus, Tuolumne and San Joaquin Rivers. Mr. Kamman completed a comprehensive review and synthesis report of available groundwater and interconnected surface water (ISW) reports and data. Using available soils, geology and hydrology information, Mr. Kamman also delineated and mapped subterranean streams and Potential Stream Depletion Areas (PSDAs) to identify stream corridors susceptible to adverse impacts from groundwater pumping. This information is intended to help Groundwater Sustainability Agencies identify potential impacts to ISW.

SELECTED EXPERIENCE *(CONTINUED)*

Most recently, Mr. Kamman has been retained to review and comment on 7 Groundwater Sustainability Plans (GSPs) for critically overdraft groundwater subbasins within or adjacent to Stanislaus County. This review focused on how GSPs address Groundwater Dependent Ecosystems (GDE) and ISW. Comments included recommendations on monitoring and study plans to identify and quantify impacts of groundwater pumping on stream flow rates and associated ecological habitats.

Assessment of Surface Water-Groundwater Interaction, Humboldt County, CA
Friends of the Eel River (FOER), 2020-present

Mr. Kamman is currently providing technical assistance in understanding surface water-groundwater interactions in the Lower Eel River Valley. Work includes reviewing and synthesizing available reports and hydrologic data and providing a science-based opinion on the role groundwater plays in supporting stream flow and aquatic habitats. This analysis addresses conditions and changes associated with seasonal and long-term wet-dry cycles. Data gaps will be identified and documented during the analysis.

This work is being completed to support FOER efforts at protecting aquatic resources within the framework of current water management practices and the public trust doctrine under California law. Additionally, this work includes providing hydrologic and hydrogeologic review, comment and recommendations during development of the basin's Groundwater Sustainability Plan (GSP) under the California Sustainable Groundwater Management Act (SGMA).

Scott Valley Subbasin Technical Hydrogeologist Assistance, Siskiyou County, CA
Klamath Tribal Water Quality Consortium and Quartz Valley Indian Reservation, 2019-present

Mr. Kamman is providing technical review and comment on the groundwater models and associated studies in the Scott Valley groundwater subbasin under the Sustainable Groundwater Management Act (SGMA) process. Work includes: review of groundwater models; synthesis and review of available groundwater quality data; assisting to identify constituents of concern; and review of the planning and technical studies being used to develop a basin Groundwater Sustainability Plan (GSP).

Middle Russian River Valley Shallow Groundwater Storage Enhancement Study, Sonoma County, CA
Friends of the Eel River, 2016

Working on behalf of Friends of the Eel River, Mr. Kamman completed a study to identify and quantify the volume of recoverable aquifer storage along two independent 6-mile reaches within the alluvial fill valley of the Russian River. The approach to this study was to quantify how channel incision has reduced shallow groundwater levels and quantify how much aquifer storage can be increased if channel bed elevations are restored to historic levels. The goal of this investigation was to identify feasible approaches to increase groundwater storage that would off-set losses associated with the termination of out-of-basin diversions from the Eel River. This work was completed through: intensive review and mapping of available groundwater level data; quantification of aquifer hydraulic properties; and calculating the shallow aquifer storage volume. In total, reclaiming the shallow aquifers within these two areas yield a total added storage volume of over 20,000 AF.

Green Gulch Farm (GGF)/Zen Center Water Resources Investigation, Marin County, CA
Green Gulch Farm, 1998-2019

Mr. Kamman completed a multi-phase study to evaluate the short- and long-term water uses and resources at GGF. Work was initiated by developing comprehensive water usage/consumption estimates and assessing available water resources, including spring, surface water, and ground water sources. Water demand estimates included quantifying potable and agricultural water usage/demands. Once reliable water supplies were identified and water usage/demand figures calculated, Mr. Kamman provided recommendation for improvements to water storage and distribution systems, land-use practices, conservation measures, treatment methods, waste disposal, and stream and habitat restoration. The initial phase of work included: in-depth review of available reports and data; review of geology maps and aerial photography; review of water rights and historic land use records; field reconnaissance including year-round spring flow monitoring; mapping and quantifying existing runoff storage ponds; and surface water peak- and base-flow estimates.

The second phase of work included identification of possible groundwater sources and siting and installation of production wells. This included sighting three drilling locations, obtaining County and State well drilling permits for a domestic water supply; coordination and oversight of driller; and directing final well construction. Upon completion of a well, Mr. Kamman directed a well pumping yield test and the collection and analysis of water quality samples (including Title 22) for small water supply system use. The final phase of work included assisting GGF with water treatment system options at the well head and integration of the groundwater supply into an existing ultra-violet light treatment system servicing spring water sources. Work was completed in 2000 with a budget of approximately $25,000, including all driller and laboratory subcontracting fees.

Stanford Groundwater Assessments, Santa Clara County, CA
Stanford University Real Estate Division, 2012-2016

Mr. Kamman provided technical hydrogeologic services to evaluate groundwater conditions and drainage requirements associated with the construction of several new facilities on or near Page Mill Road. The main objective of this study is to determine the seasonal depth to groundwater beneath the project site under existing and potential future conditions and provide an opinion on if the project is required to comply with the City of Palo Alto, Public Works Engineering Basement Exterior Drainage Policy (effective October 1, 2006). This work included obtaining and reviewing available technical reports, maps and literature pertaining to groundwater conditions in the project vicinity. Based on this review, we have prepared a letter report of findings and recommendations.

Bodega Bay Wetland Water Supply, Sonoma County, CA
Friends of Bodega Bay, 2007

Mr. Kamman Conducted an evaluation of the groundwater underflow feeding a large coastal wetland in Bodega Bay and recommended mitigation measures for potential losses in supply associated with proposed residential development in recharge areas. Work included: long-term monitoring of ground water quality and supply; monitoring surface water and spring flow and water quality; assessing and characterizing the interaction between surface and subsurface water sources during different seasons and water year-types; developing a detailed water budget for the site to assess impacts to recharge areas; and developing a number of physical solutions to mitigate for recharge losses.

SELECTED EXPERIENCE *(CONTINUED)*

L.A. Department of Water and Power, Groundwater Recharge Facility Operation Study, Los Angeles County, CA
ICF Consulting, 2006

Working as a subcontractor to ICF Consulting of Laguna Niguel, California, Mr. Kamman provided technical assistance in the hydraulic modeling of sediment accumulation in selected spreading ground facilities owned and operated by the Los Angeles Department of Public Works. The object of this work is to evaluate changes in infiltration and groundwater recharge rates over time within the spreading grounds in association with sediment accumulation from turbid waters.

Corde Valle Golf Club Surface-Groundwater Interaction Study, Santa Clara County, CA
LSA Associates, 2004

On behalf of LSA Associates of Pt. Richmond, CA, Mr. Kamman completed a 3rd party independent review of available reports and data sets (boring logs, well water levels, groundwater quality, aquifer pump-test, and surface water monitoring) to evaluate if pumping of the Corde Valle irrigation well is adversely impacting flow in West Llagas Creek. This investigation was implemented in response to a concern expressed by California Department of Fish and Game staff regarding the potential for differential drying of the West Branch of Llagas Creek along Highland Avenue. The analysis was also complicated by the likely effects of pumping from surrounding off-site wells.

Aquifer Testing for Tennessee Hollow Watershed Project, San Francisco County, CA
Presidio Trust, 2002

The Mr. Kamman assisted in the design and implementation of an aquifer test at the Presidio of San Francisco. We prepared an aquifer test work plan and conducted step-drawdown and constant-rate aquifer tests at the site using both manual and electronic data collection methods. This work included interpretation of the aquifer test results using software-based solution methods and prepared a written summary of methods and findings. In addition, Mr. Kamman located, coordinated and managed a drilling effort for the logging and installation of several groundwater monitoring wells in the project area to address identified data gaps.

San Joaquin River Riparian Corridor Restoration Project, San Joaquin Valley, CA
McBain-Trush, 2002

Mr. Kamman completed an assessment of historic and existing shallow groundwater conditions beneath and adjacent to the San Joaquin River between Friant Dam and the Merced River. This work focused on reviewing available reports and flow/groundwater- level data to characterize surface water and groundwater interaction and implications for riparian vegetation, water quality and fishery habitat restoration. Hydrologic analyses were performed to identify the location and seasonal evolution of losing and gaining reaches an implication on future restoration planning and design efforts. The main deliverable for this analysis was a report section focused on describing the historical changes in regional and local groundwater conditions in the San Joaquin Valley and evolution of anthropogenic activities (e.g., groundwater withdrawals, irrigation drainage systems and return flows, development of diversion structures, changes in land-use; and introduction of CVP/State Water Project deliveries) and associated impacts on deep/shallow groundwater levels, surface water flows, and surface and groundwater quality.

Tidal, Estuarine & Coastal Projects

Quartermaster Reach Wetland Restoration Project, San Francisco County, CA
Presidio Trust, 2006-present

Mr. Kamman was retained in 2006 as part of a multi-disciplinary team to develop restoration alternative designs for a 10-acre filled and paved site marking the historic confluence of Tennessee Hollow Creek and Crissy Marsh adjacent to San Francisco Bay. The Trust's planning documents define the main objectives for Tennessee Hollow restoration as: a) "Restoration [of Tennessee Hollow] will expand riparian habitat and allow for an integrated system of freshwater streams and freshwater, brackish, and tidal marsh, re-establishing a connection to Crissy Marsh" and b) "Restore and protect Tennessee Hollow as a vibrant ecological corridor". The project is located within the setting of a National Park and a National Historic Landmark District. Thus, another goal for the project is to protect the area's historic buildings and sensitive cultural and archeological resources to the extent possible, to enhance visitor experience to the area, and to integrate creek restoration with other urban land uses.

Mr. Kamman provided H&H technical input and consultation to the design team to develop a restoration project consisting of a creek-brackish marsh-salt marsh interface and associated upland habitats. His work included evaluating surface water, groundwater and tidal sources. In addition, the development of a hydrodynamic model has informed and guided a preferred project design, including evaluation of storm surge, road crossing and Tsunami impacts to the project. A technical challenge addressed with the use of the model included predicting and quantifying salt/brackish marsh habitat zones within the restored wetland in response to periodically but prolonged closed-inlet conditions to Crissy Marsh - a water body that serves as the downstream connection to the proposed project.

Another unique challenge to this project includes integrating restoration planning and design efforts with the replacement and retrofit of Doyle Drive, the main on/off-ramp for the Golden Gate Bridge, being replaced along the entire northern boundary of the Presidio. Mr. Kamman is providing long-term technical review of this project to the Trust with respect to impacts to water resources and associated existing ecological habitats. The Quartermaster project also falls within the managerial jurisdiction of both the Presidio Trust and NPS-GGNRA, requiring work in close cooperation with both Presidio Trust and National Park Service (NPS) staff.

Salt River Ecosystem Restoration Project, Humboldt County, CA
Humboldt County RCD, 2005-2019

Mr. Kamman provided hydrology, engineering and environmental compliance services towards the planning and design of river and tidal wetland restoration on the Salt River (Eel River Delta plain) near Ferndale, California, in Humboldt County. The purpose of the Salt River Ecosystem Restoration Project (SRERP) is to restore historic processes and functions to the Salt River watershed. These processes and functions are necessary for re-establishing a functioning riverine, riparian, wetland and estuarine ecosystem as part of a land use, flood alleviation, and watershed management program. The Salt River Project has three components: 1) dredging the lower Salt River and lower Francis Creek from near the Wastewater Treatment Plant downstream for 2.5 miles; 2) restoring 247 acres of wetland estuary habitat in the lower Salt River within the 440-acre former

SELECTED EXPERIENCE *(CONTINUED)*

dairy; and 3) reducing sediment inputs from tributary watersheds. The Salt River Project was designed using an "ecosystem approach" to address hydrology, sedimentation, and fish and wildlife habitat.

As part of project feasibility assessment, Mr. Kamman completed a hydrologic and water quality monitoring program, and developed a MIKE11 hydrodynamic model of the lower Salt River and Eel River estuary in Humboldt County, for the Humboldt County RCD. The purpose of this work was to complete a hydrologic, geomorphic, and hydraulic modeling assessments of the character and dominant physical processes controlling flow of water and sediment through the lower Salt River. Land use changes in the area have caused significant aggradation and infilling of the Salt River, significantly reducing tidal exchange, fish passage, and exacerbating flooding in upland areas. A primary goal of this study is to evaluate the feasibility of proposed restoration elements intended to increase tidal prism and exchange and in-channel sediment scour and transport. The desired outcome is a sustained increase in river conveyance capacity to improve drainage of surrounding flood-prone lands and improve aquatic, wetland, and riparian habitat.

As part of project development and feasibility assessment, Mr. Kamman completed a hydrologic and water quality monitoring program and MIKE11 hydrodynamic model development of the lower Salt River and Eel River estuary in Humboldt County for the Humboldt County RCD. The purpose of this work is to complete a hydrologic, geomorphic, and hydraulic modeling assessments of the character and dominant physical processes controlling flow of water and sediment through the lower Salt River. Land use changes in the area have caused significant aggradation and infilling of the Salt River, significantly reducing tidal exchange, fish passage, and exacerbating flooding in upland areas. A primary goal of this study is to evaluate the feasibility of proposed restoration elements intended to increase tidal prism and exchange and in-channel sediment scour and transport. The desired outcome is a sustained increase in river conveyance capacity to improve drainage of surrounding flood-prone lands and improve aquatic, wetland and riparian habitat.

Western Stege Marsh Restoration Project, Contra Costa County, CA
Tetra Tech, 2008-2010

Mr. Kamman provided technical hydrology and wetland hydraulics support to post-project monitoring of the Western Stege Marsh Restoration Project. His involvement began by providing an independent technical review of previous year's hydrologic monitoring results to evaluate the proposed monitoring success criteria and the rationale used to develop these criteria. This work entailed reviewing historic monitoring data and available natural slough channel geometry data-sets for San Francisco Bay area marshes. Mr. Kamman's study approach was to independently develop desired and sustainable channel geometry relationships for natural, healthy San Francisco Bay salt-marshes and compare them to the published success criteria. Greg was also retained to implement the Year 4 post-project hydrologic monitoring, with modifications to aid in better linking hydrologic processes to ecological conditions and function within the restored marsh. This work consisted of completing more targeted water level monitoring and channel geometry surveys in reference marsh areas containing desired physical and ecological attributes. These data were used to develop geomorphic success criteria (target channel geometry) more tailored to the project marsh and augment the criteria provided in available literature. Working closely with the project team of scientists, Mr. Kamman compared these hydrologic monitoring results to available vegetation surveys to better assess the overall success and evolutionary trend of the marsh.

Giacomini Wetland Restoration Project, Marin County, CA
The National Park Service and Point Reyes National Seashore Association, 2003-2012

Mr. Kamman managed a multi-year project for the NPS in the design and feasibility analysis of a tidal wetland, riparian, and freshwater marsh complex, on the 500-acre Giacomini Dairy Ranch, at the south end of Tomales Bay. The project began in 2003 and included hydraulic, hydrologic, and geomorphic assessments to characterize existing physical conditions, developing restoration alternatives, and completing hydrologic feasibility analyses. Restoration alternatives evaluated creation of a mosaic of subtidal through upland wetland and riparian habitat zones, as well as improvements to salmonid passage, red-legged frog habitat, tidewater goby habitat, and clapper-rail habitat. Emphasis was placed on completing detailed studies to quantify project-induced changes in flood frequency, magnitude and duration, impacts on water quality to local groundwater supply wells, and changes in sediment and water quality conditions in Tomales Bay.

Beginning in 2006, Mr. Kamman managed and assisted design engineers, preparing plans, specification, and cost estimates for a three phased construction schedule, that was completed in the summer of 2008. This project illustrates Mr. Kamman's ability to complete a broad variety of hydrologic feasibility analyses, including flood frequency analyses for contributing watersheds, reproducing historic flood events through numerical modeling, flow duration analysis and evaluation of environmental flow regimes, development of a water budget for created freshwater marsh and frog breeding ponds, sediment yield estimates, completing field monitoring (flow, water level, groundwater level, sediment, and water quality monitoring) to characterize existing site hydrologic and geomorphic conditions (fluvial and tidal), wind-wave setup and run-up for levee stability determination and construction design, coordinating and performing topographic and hydrographic surveys, performing hydrodynamic and water quality modeling of existing and alternative conditions, developing detailed construction cost estimates preparation of technical reports and design drawings and specifications in support of NEPA/CEQA environmental compliance, and public meeting presentation and participation. In addition, Mr. Kamman managed staff in the generation of DEM and TIN models of the existing site and all action alternatives. All work was completed on budget and in a timely fashion, despite repeated expansions to the project boundary and last minute changes driven by endangered species issues.

Critical Dune Habitat Restoration to Protect Threatened and Endangered Species, Marin County, CA
The National Park Service, 2009-2010

Mr. Kamman provided and managed engineering, design, and implementation planning support for the restoration of 300 acres of critical dune habitat at Abbots Lagoon within the NPS Point Reyes National Seashore. He developed engineered drawings, technical specifications and engineer's cost estimates, and assisted NPS in defining a range of methodologies suitable to local conditions and sensitive flora and fauna. This area of the park supports the best remaining intact dune habitat, including some of the largest remaining expanses of two rare native plant communities: American dune grass (Leymus mollis) foredunes, and beach pea (Lathyrus littoralis). European beach grass and iceplant were removed from

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the project site using mechanical removal and hand removal techniques. The project goal was to remove these invasive species from approximately 135 acres of prime dune habitat in the 300-acre project site, while not impacting sensitive species and habitats. The intended result was to remobilize this historic dune field and restore their natural form and migratory processes.

This project illustrates Mr. Kamman's ability to work closely with NPS staff to balance habitat protection and restoration across the landscape. As part of project design, he developed grading plans, and specified work flow, equipment movement and access routes which minimize impacts to special status species. Extensive fencing and exclusions zone planning was required to protect existing native habitats, and minimize tracking of plant stock to or through restored sties. In addition work elements had to be structured and prioritized to maximize ground work subject to budgetary constraints and work flow uncertainties. All work has been completed on budget and in a timely fashion, even with repeated expansions to the project boundary and affected area and last minute changes driven by endangered species issues.

Lower Gualala River and Estuary Assessment and Management Plan, Mendocino County, CA

California State Coastal Conservancy and Gualala River Watershed Council, and Sotoyome RCD, 2002-2005

Mr. Kamman worked with fisheries biologists to evaluate the hydrologic and water quality conditions in the lower Gualala River and estuary and identify and evaluate potential impacts to summer rearing habitat for salmonids and other aquatic organisms. This work included: assessing how the impacts of upstream land use (logging and water diversions) have altered water delivery and water quality to the Lower River and estuary over time; characterizing the physical coastal and riverine processes controlling opening and closure of the estuary inlet and lagoon morphology; monitoring and characterizing real-time and seasonal changes in lagoon water level and water quality; and evaluating the sediment transport capacity and geomorphic condition of the lower river and estuary. Mr. Kamman took the lead in developing and editing a management plan for the lagoon, prescribing actions to preserve, protect and enhance ecological habitats (with emphasis on salmonids) within the lagoon and lower Gualala River.

This project was completed on-time and on-budget and demonstrates Mr. Kamman's ability to integrate physical, water quality and biological data and information into a coherent and understandable description of the interrelated processes controlling the aquatic ecology of a lagoon system. A big challenge on this project was completing a high-quality and defensible field monitoring program on a "shoe-string" budget. The outcome of this study provides important understanding on how and why steelhead are surviving in a heavily logged (95% private ownership) watershed. The management plan prescribes recommendations to preserve and protect the lagoon as primary rearing habitat for steelhead.

Suisun Bay Tidal Wetland Restoration Design, Contra Costa County, CA

East Bay Regional Park District and LSA Associates, 1999-2005

Mr. Kamman provided hydrologic design services to the restoration of a 55-acre tidal wetland on Suisun Bay. The design will maximize habitat for special status fish species, and (to the extent possible) habitat for other special status animal and plant species. Working with a multi-disciplinary design team, Mr. Kamman assisted in developing a design based on analysis of habitat needs, tidal hydrodynamic and geomorphic processes, sedimentation rates and soil characteristics. Project tasks included: a site analysis defining existing ecological and hydrologic conditions; a hydrologic and biological restoration opportunities and constraints analysis to define restoration and management objectives; and hydrodynamic and sedimentation modeling to evaluate design alternatives. The final restoration and management plan included a grading plan, landscape revegetation plan and monitoring and maintenance plans. This work again illustrates his capabilities in the characterization of physical site conditions, development and feasibility analysis of project alternatives, and preparation of preliminary designs of sufficient detail to allow for environmental compliance through the CEQA/NEPA process.

Santa Clara River Estuary and Lower River Assessment, Ventura County, CA

Nautilus Environmental on behalf of the City of Ventura, Public Works Department, 2003-2004

Mr. Kamman directed a hydrologic and geomorphic assessment of the lower Santa Clara River and estuary. This work was completed for prime contractor in an effort to assist with re-permitting of treated effluent discharges to the estuary. The proposed study entailed characterizing existing and historic hydrologic and physiographic conditions and an assessment of historic changes in inflow to the estuary. This task included a comprehensive review and evaluation of available hydrologic reports and flow data within the watershed to characterize changes in flow associated with development of numerous water projects within the Santa Clara River basin. The main deliverable from this analysis was the development of a historic unimpaired flow record to the estuary based on regional regression analyses and water operations modeling. Within the estuary, Mr. Kamman designed and conducted a multi-year monitoring program of water levels, water quality (temperature, dissolved oxygen, salinity, and pH), and sand-spit morphology in order to evaluate inlet opening/closure frequency and associated changes in aquatic habitat (esp. tidewater goby) and other ecologic communities. A considerable portion of this subtask included detailed coastal process analysis (including wave power analyses and littoral sand transport), which, considered with the inflow analysis, provides a basis to evaluate the seasonal cycle of barrier beach buildup and destruction.

This project illustrates Mr. Kamman's ability to complete a broad variety of hydrologic and coastal process analyses under strict regulatory oversight. A premier study completed on this project was the development of a detailed water and salinity budget model for the estuary to evaluate the impacts of a wide variety of proposed and modified estuary inflow regimes to determine potential future water level and salinity conditions in the lagoon and impact on frequency of inlet breaching. In addition to coordinating and implementing a variety field monitoring and surveys, Mr. Kamman also provided real-time information and input to informational and negotiation meetings with state resource and regulatory agencies.

Eden Landing Ecological Reserve Restoration, Alameda County, CA

East Bay Regional Park District, 2000-2003

Mr. Kamman developed and completed hydraulic and hydrodynamic modeling assessments for the design of an approximately 1000-acre tidal marsh restoration in former Cargil salt manufacturing ponds, located a mile inland of San Francisco Bay. The restoration goals required balancing the desires to restore tidal marsh conditions to the site, while maintaining and enhancing the open water and salt

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panne habitats preferred by resident and migratory shorebirds. The restoration plan also needed to incorporate restoration objectives with remediation of high soil salinities resulting from past salt production, subsided ground elevations, dredging of new channels to the bay, existing infrastructure constraints, public access for the San Francisco Bay Trail, and preservation of several important cultural and historical sites. Hydraulic design objectives include maximizing both interior circulation and tidal exchange between the restoration parcel and the bay. A series of one-dimensional unsteady hydrodynamic models (MIKE11) were used to design the channel network, identify high velocity areas requiring erosion protection, and characterize expected habitat conditions. An important component of this design and feasibility assessment was to translate desired ecological habitat conditions identified in the EIR into specific hydrologic design criteria, considering channel velocities, scour, sediment transport, tidal water inundation frequencies and seasonality of ponding. Mr. Kamman worked closely with EBRPD civil engineers, assisting with the translation of hydraulic design criteria into final engineered drawings and specifications.

Wetland & Pond Projects

Design of California Red-Legged Frog Breeding Ponds, San Francisco Bay Area (various), CA
The National Park Service and Golden Gate National Parks Conservancy, 1997-present

Mr. Kamman has lead or provided hydrologic and engineering design assistance to the sighting and design of nearly two dozen breeding ponds for California red-legged frog throughout the San Francisco Bay Area. Work has been completed in Marin, Sonoma, Solano, Contra Costa, Alameda, and Santa Clara Counties under the auspices of numerous federal, state, and local county/city agencies. A common study approach consists of an initial site reconnaissance of watershed conditions and identification of potential sites. The reconnaissance is followed by a surface water hydrologic sufficiency analysis using available meteorologic and stream flow information. An important variable sought during pond sighting is the presence of migration corridors between known breeding areas and/or perennial water sources. Based on in-depth research and post-project monitoring, Mr. Kamman has refined or developed site-specific evapotranspiration estimates, which commonly do not match standard applied values. Accurate evapotranspiration rates are necessary if ponds are intended to periodically dry-down as a means to preclude undesired species such as bullfrog or mosquito fish. In many instances, a seasonal groundwater-monitoring program is implemented in order to better investigate and quantify potential and seasonal groundwater contributions. Other design challenges we commonly experience include: design of impermeable liners for ponds located in upland areas or highly permeable soils; hydraulic analyses and design of outfalls/spillways; sedimentation management/ maintenance approaches; and requirements of inoculum and water used to line and fill the pond, respectively.

Hydrologic Feasibility Assessment for Mana Plain Wetland Restoration Project, Kauai, HI
State of Hawaii Department of Land and Natural Resources, 2010-2019

Working on behalf of the Mana Plain Wetland Restoration Partnership, Mr. Kamman completed a hydrologic feasibility assessment for the Mana Plain Wetland Restoration Project proposed by the State of Hawaii Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW) on the island of Kauai. The Mana Plain Wetland Restoration Project site is approximately 105 acres of low-lying abandoned sugarcane fields immediately north of the Kawaiele Waterbird Sanctuary and east of the Pacific Missile Range Facility. The purpose of the Mana Plain Wetland Restoration Project is to maximize the area of constructed wetlands within the restoration site. Palustrine emergent wetlands within the project will create habitat for four species of endangered Hawaiian waterbirds and other sensitive species, including: Hawaiian stilts; Hawaiian ducks; Hawaiian coots; Hawaiian moorhen; migratory waterfowl; and migratory shorebirds. The Mana Plain is of vital importance for the recovery of endangered waterbirds species. This restoration project will be designed to provide important breeding and feeding wetland habitats on an island where; 1) wetlands have been severely degraded, and 2) mongoose, an introduced predator, have not been established.

Mr. Kamman's work on this project included technical assessments and development of proposed restoration alternatives. Analyses completed included: a synthesis of the physical site setting (topography, geology, hydrogeology and soil); reviewing available data to characterize site meteorology, surface water drainage, water quality, and groundwater conditions; preparing a detailed water budget to describe the characteristics and processes of surface water and groundwater movement into and through the project area; evaluating project feasibility, water supply alternatives and costs; and completing a flood hazard impact assessment to evaluate potential project benefits and impacts to local area flooding. Working with the project partners, Mr. Kamman developed a preferred project alternative and supported in preparation of the project Environmental Assessment document. Mr. Kamman's firm was also retained by the State of Hawaii to develop engineering designs of the project.

MacArthur Meadow Wetland Restoration, San Francisco County, CA
Presidio Trust, 2013-2016

Mr. Kamman has been working on over a dozen independent wetland and creek restoration planning and design efforts within the Presidio of San Francisco since 2001. Most recently (2016), he developed a wetland restoration grading plan for the MacArthur Meadow Wetland Restoration Project in the central portion of the Tennessee Hollow watershed. As part of the site assessment, Greg characterized and modeled surface and groundwater interactions and identified a unique opportunity to restore 4 acres of mixed meadow, natural wetlands and creek/riparian corridor. This was possible due to the discovery of shallow groundwater conditions beneath this historically disturbed landscape. Various design components were integrated into the grading plan in order to enhance groundwater recharge and storage in the Meadow, while retarding runoff and drainage out of the wetland, including: daylighting storm drain runoff into the Meadow; reconfiguring internal channel alignments to enhance channel habitat and groundwater recharge; creation of wetland depressions to retain and recharge surface water; and removal of fill material to decrease the depth to the water table. Notable challenges of this work include restoring heavily disturbed natural resources in an urban setting while integrating designs with archeology/ cultural resources, education and remediation programs.

Dragonfly Creek Restoration Project, San Francisco County, CA
Presidio Trust, 2007-2011

Mr. Kamman designed and managed hydrologic monitoring and analysis studies in support of planning and design for riparian and wetland habitat restoration along approximately 500-linear feet of the Dragonfly Creek corridor near Fort Scott of the Presidio of San Francisco. Work has included completing subsurface

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investigations including the installation of shallow wells and a sharp-crested weir with recorder to gauge creek flows. Mr. Kamman assisted in the development and selection of a preferred project alternative, considering on-site cultural resource protection, education and resource management issues (including flood control). Mr. Kamman prepared permit applications. Major components of the project included removal of significant fill and building foundations and installation of a new creek road crossing that will maintain the historical alignment, function and architectural character of a culturally significant roadway. Mr. Kamman oversaw development of PS&E for this project, which will create mitigation wetlands for a highway earthquake retrofit project that passes through the Park.

This project illustrates Mr. Kamman's ability to complete a broad variety of hydrologic analyses, including: surface water and groundwater hydrologic monitoring to characterize and quantify existing hydrologic conditions; rainfall-runoff modeling; hydraulic modeling of flood and scour conditions (including road crossing); preservation of existing wetland habitat and vegetation communities; integration with other Presidio Trust programs; and contracting flexibility to assist in conceptual planning and environmental compliance without increasing project design costs.

Mori Point Sensitive Species Habitat Enhancement Project, San Mateo County, CA
Golden Gate National Recreation Area and Golden Gate National Parks Conservancy, 2005-2011

Mr. Kamman provided hydrologic analyses, sighting and engineering design (PS&E) for three California red-legged frog breading ponds within the 105-acre Mori Point area. These efforts were completed in association and collaboration with a larger Coastal Trail improvement and ecosystem restoration effort. Quarrying and off-road vehicle use have left this site heavily scarred. The focus of restoration work was to protect the endangered San Francisco garter snake and the threatened red-legged frog. Most of this work will be focused on invasive species removal and enhancing endangered species habitat. As part of species habitat improvement, Mr. Kamman worked with project ecologists to design the ponds to optimize breeding habitat for California red-legged frog.

Work started with an initial site reconnaissance and study of watershed conditions and identification of potential sites. The reconnaissance was followed by a surface water hydrologic sufficiency analysis using available meteorological and stream flow information and installation and monitoring of shallow piezometers to quantify the proximity and seasonal variability in depth to water table. An important variable sought during pond sighting was the presence of migration corridors between known breeding areas and/or perennial water sources. Based on in-depth research and post-project monitoring for other ponds they created in the San Francisco Bay area, Mr. Kamman refined site-specific evapotranspiration estimates. Accurate evapotranspiration rates are necessary if ponds are intended to periodically dry-down as a means to preclude undesired species such as bullfrog or mosquito fish.

Other design challenges experienced included: design of impermeable liners for ponds located in upland areas or highly permeable soils; hydraulic analysis and design of outfalls/spillways; sedimentation management/maintenance approaches; and requirements of inoculum and water used to line and fill the pond, respectively. Mr. Kamman has designed numerous ponds for the NPS and affiliates within the Bay Area, including Mori Point (constructed 2007), Banducci (constructed 2007) and Giacomini (Phase I and Phase II constructed in 2007 and 2008) project sites.

Hydrologic Assessment and Restoration Feasibility Study for Shadow Cliffs Regional Recreation Area, Alameda County, CA
East Bay Regional Park District, 2009-2010

Mr. Kamman developed and implemented an assessment to identify groundwater levels and supplemental water supplies that will sustain seasonal wetland restoration areas and riparian habitats under an altered future hydrologic regime. This work will inform a forthcoming Land Use Plan Amendment for park occupying a series of former gravel quarry pits. Work included: obtaining and synthesizing available surface water and groundwater data to characterize existing hydrologic and water supply conditions and seasonal variability; quantifying the likely changes in groundwater conditions and quarry pit lake levels in association with changes in regional water transmission and groundwater recharge operations; and identifying, developing and evaluating a suite of ecosystem restoration alternatives. Other important project objectives include: improving habitat for waterfowl and wildlife; broadening recreational use; enhancing visitor education and wildlife interpretation; improve park aesthetics. Mr. Kamman evaluated a preferred park and ecosystem enhancement alternative that involves diverting high winter flows from an adjacent arroyo. This project demonstrates Greg's ability to characterize hydrologic conditions and quantify the relationship between groundwater, surface water and wetland habitat conditions, both under existing conditions and in predicting future hydrologic and ecologic conditions under an altered hydrologic regime (i.e., lower groundwater table).

Laguna Salada Marsh and Horse Stable Pond Restoration Project, San Mateo County, CA
Tetra Tech, 2007-2009

Mr. Kamman provided technical hydrology and hydraulics support to the planning and conceptual restoration design of Laguna Salada marsh and Horse Stable Pond, located adjacent to Sharp Park Golf Course in the town of Pacifica, California. The primary objectives of the project are: to reduce flood impacts within the project vicinity; improve sustainable ecological habitat for the endangered San Francisco garter snake and the threatened California red-legged frog; better understand and characterize the hydrologic and water quality conditions/processes affecting flood and ecological habitat conditions within the project vicinity; provide an effective pumping operation plan to meet ecological objectives; and develop appropriate hydrologic analytical approaches and models to assist Tetra Tech and the San Francisco Recreation and Park Department in the planning and design for marsh, pond, and creek restoration. The project is also a unique opportunity to connect this resource with the California Coastal Trail, the Bay Area Ridge Trail, and the surrounding GGNRA lands.

Mr. Kamman's work included completing a comprehensive review of available hydrologic and site information and implementing selected field investigations to develop and calibrate an integrated hydrology-flood routing-pond water operations model that will quantify the volume and depth of water moving through the project system. The investigation will also further characterize shallow groundwater conditions and water quality with respect to effects on Laguna Salada and Horse Stable Pond. Analytical and numerical modeling tools are being used to better characterize existing hydrologic and water quality conditions and to assist in identifying project opportunities and constraints as well as evaluate potential restoration design components - all necessary to inform a sustainable

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and successful restoration design.

Tolay Lake Restoration Feasibility Assessment, Sonoma County, CA
Sonoma County Agricultural Preservation and Open Space District, 2003

Mr. Kamman completed a detailed hydrologic feasibility analysis to evaluate a suite of potential freshwater lake and wetland restoration alternatives. Sites were evaluated under existing watershed land-use practices and under existing and forecasted water demands (in the form of existing water rights/applications). Analysis consisted of developing a detailed water budget model to simulate alternative restored lake inundation areas and depths under median and dry year conditions, as well as a 50-year historic period (1947-1997) displaying highly variable rainfall and runoff supplies. Three lake restoration alternatives were evaluated based on existing topography and likely historic lake configurations. The restoration alternatives include lakes with storage volumes equivalent to 136-, 1100-, and 2550-acre feet.

Haypress Pond Decommissioning and Riparian and Channel Restoration, Marin County, CA
Golden Gate National Recreation Area (GGNRA), 2001-2002

This project restored 170 meters of historic creek and riparian habitat through removal of Haypress Pond dam in Tennessee Valley within GGNRA. The goals of the project were to alleviate long-term maintenance needs and eliminate non-native bullfrog habitat threatening native California red-legged frog habitat in adjacent watersheds.

Working with the Park biologist, Mr. Kamman developed designs to decommission the dam and restore natural riparian and meadow habitat. This work included: characterization of existing topographic conditions; design of a channel profile through the proposed restoration project reach; preparation of a grading plan for the restoration project; and hydrologic and hydraulic analyses to evaluate the performance of the creek channel and flood plain below the former dam during a variety of flows. Challenges of this work included integrating sediment reuse into plans and construction phasing.

Damon Slough Site Seasonal Wetland Design, Alameda County, CA
Port of Oakland, 1999-2001

Working on behalf of the Port of Oakland, Mr. Kamman completed extensive surface and groundwater monitoring and data analyses to develop a detailed water budget to assist in the evaluation and design of a 7.5 acre seasonal freshwater wetland. Primary project objectives included a design that would provide shorebird/waterfowl roosting habitat, minimize impacts to existing seasonal wetland areas, and lengthen the duration of ponding through the end of April to promote use by migratory birds. In addition to developing hydrologic design criteria, responsibilities included development of grading plans to accommodate a local extension of the Bay Trail and wetland outlet works.

Water Quality Projects

Chicken Ranch Beach Soil and Groundwater Quality Investigation and Restoration Planning, Marin County, CA
Tomales Bay Watershed Council, 2007-present

Mr. Kamman is leading scientific and engineering efforts for a wetland and riparian corridor restoration project on Third Valley Creek and Chicken Ranch Beach in Inverness, California. The main project goals are to create a self-sustaining riparian and wetland system (requiring minimal operation and maintenance) and eliminate public exposure to high levels of bacteria that exist in a site drainage ditch discharging to the beach. The design will likely include establishing a blend of habitats, including: riparian stream corridor, seasonal/perennial freshwater marsh, and tidal/saltwater marsh.

Current efforts have included the development and implementation of a soil and groundwater quality investigation to delineate the source of elevated bacteria levels. This work includes: the collection and testing of depth-discrete soil samples; groundwater well installation, sampling and testing; and surface water sampling and testing; analysis of laboratory results; and reporting, including recommendations for further/expanded investigations. Mr. Kamman coordinated this time-sensitive sampling and analysis (six hour hold times) with Brulje and Race Laboratories in Santa Rosa.

Lower Miller Creek Channel Maintenance and Material Reuse Sampling Analysis Plan, Marin County, CA
Las Gallinas Valley Sanitary District, 2015

Mr. Kamman was commissioned to formulate and implement a plan for sediment removal and improved flood flow conveyance in the Lower Miller Creek channel. Accumulation of course sediment in the project reach had reduced discharge efficiencies at District outfalls. Miller Creek supports a population of federally listed Steelhead and adjacent wetland/marsh areas potentially support other state and federally listed special status species. Working with District Staff, Greg developed a suite of potential project alternatives and identified a preferred approach. Mr. Kamman completed all CEQA compliance (IS/MND), permitting and oversaw development of engineered plans and specifications.

In order to evaluate if reuse of excavated material from 2,655 feet of creek corridor in upland areas was feasible, Mr. Kamman developed and implemented a Sampling Analysis Plan (SAP) pursuant to U.S. Army Corps Guidance for Dredging Projects within the San Francisco District. Sample collection, sample handling, and analysis were performed in accordance with the SAP. Results for analytes were compared to a variety of screening criteria to determine the material's suitability for reuse in aquatic environments. A full suite of chemical and physical analyses were performed on soil samples collected from 16 locations, including: metals, PAHs, PCBs, pesticides, TOC, specific conductance, pH, sulfides, percent moisture and grain-size. Mr. Kamman managed all aspects of this effort including reporting and presentations/negotiations at multi-agency meetings through the Corps Dredge Materials Management Office (DMMO).

Lower Pitkin Marsh Hydrologic and Water Quality Monitoring, Sonoma County, CA
Sonoma Land Trust, 2008-2010

Mr. Kamman was retained to develop and implement a hydrologic and water quality monitoring program at Lower Pitkin Marsh outside of Forestville, California. The Pitkin Marsh area is one of the most valuable complexes of mixed riparian woodland and thicket, freshwater marsh, wet meadow, oak woodland and grassland in Sonoma County. The complex interaction of surface water, ground water, and scattered seeps and springs on the site creates unusual hydrologic conditions that promote a rare assemblage of plant species which includes several endemics. The primary objective of the hydrologic monitoring program was to understand the annual and season sources of both surface and ground water supplying wetlands. Hydrologic and water quality monitoring was

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initiated during the winter wet season of 2008/09 and will be conducted for a 12-month period through the ensuing summer dry-down and into the following wet season. Understanding how groundwater levels, spring flow and creek flow rates recede from winter wet to summer dry conditions will provide an important understanding and quantification of the seasonal variability in water supplies feeding selected wetland types. General water quality parameters (temperature, pH, specific conductance, and ORP) are measured at all monitoring locations during each visit. Nutrients (N and P) are measured in selected surface water and groundwater samples collected during at least three monitoring events, including a winter high flow, spring high base flow and summer low baseflow.

Pescadero Lagoon Restoration and Enhancement, San Mateo County, CA
California State Coastal Conservancy, 2005-2006

Mr. Kamman was retained to support restoration and water quality enhancement planning efforts in Pescadero Lagoon. In 2005-2006, he completed a synthesis of available hydrologic and water quality information in responding to requests for development of a hydrodynamic and water quality model of the lagoon. This model was considered as a means to identify causes for repeated fish-kills in the lagoon that occurred during initial breaching of the inlet. Mr. Kamman assisted in preparing a synthesis and model development feasibility report from this effort.

Water Temperature Simulations for Trinity River Fish and Wildlife Restoration Project, Trinity County, CA
Trinity County Planning Department, 1994-2004

For over a decade, Mr. Kamman completed a number of hydrology and water quality investigations in support of alternative feasibility studies on the Trinity River Fish and Wildlife Restoration Project in direct support of the Trinity River Restoration EIR/EIS. Studies involve assessing the effects of proposed flow alternatives on water temperature within and downstream of Lewiston Reservoir. Mr. Kamman was responsible for data collection, processing, and flow/temperature modeling of Lewiston Reservoir as part of a coordinated evaluation including other Trinity River system models. Another study included evaluating how project operations could be implemented or modified to optimize Lewiston Lake release temperatures to meet downstream temperature criteria and compensate for increased warming of the river associated with side channel and feather edge restoration activities. Mr. Kamman continues to evaluate how more recent water projects (raising Shasta Dam, Sites Reservoir, and the Waterfix tunnels) consider and integrate with the Trinity Restoration Project.

Upper Eel River Unimpaired Flow and Water Temperature Assessments, Humboldt County, CA
CalTrout, 1997-1999

Mr. Kamman evaluated changes in the natural flow regime of the upper Eel River, and developed an Upper Eel River proposed release schedule to enhance downstream Chinook and Steelhead spawning and rearing habitat. This work was triggered by proposals set forth by PG&E as part of their Potter Valley Project FERC relicensing process. Work consisted of two main investigations. The first included reviewing results of a ten year PG&E study and development of multivariate regression and stream reach (SSTEMP) temperature models to assess the effects proposed flow alternatives would have on downstream temperatures. The second investigation consisted of characterizing unimpaired flow conditions and developing a daily unimpaired flow record for use in project operation models.

Selected Litigation Support Projects

Kamman, G.R., 2019, Review of Deschutes Basin Habitat Conservation Plan (DBHCP) and Associated Draft Environmental Impact Statement (DEIS). Prepared for: Water Watch of Oregon, Center for Biological Diversity and Associates for the West, November 22, 55p.

Kamman, G.R., 2019, Review of Draft PEIR, California Vegetation Treatment Program (CalVTP). Prepared for: Shute, Mihaly & Weinberger LLP, August 2, 8p.

Kamman, G.R., 2019, Oral Testimony of Greg Kamman for Agricultural Order 4.0 requirements discussion, Public meeting before the Central Coast (Region 3) California Water Board, Watsonville City Council Chambers, Watsonville, CA, March 21.

Chartrand, A.B., and Kamman, G.R., 2019, Comments to Central Coast Regional Water Quality Control Board Ag. Order 4.0 regulatory requirement options and proposed Requirement Options Tables. Prepared for: The Otter Project and Monterey Coastkeeper, January 22, (8p.), 5 tables and Monitoring Reporting Plan (MRP; 26p.).

Kamman, G.R., 2019, Review of Draft Environmental Impact Report/Statement, Sites Reservoir Project. Prepared for: Pacific Coast Federation of Fisherman's Association (PCFFA) and Save California Salmon, January 21, 45p.

Kamman, G.R., 2018, Review of Amendments to the Sonoma County Cannabis Ordinance, California. Prepared for: Shute, Mihaly & Weinberger LLP, August 3, 10p.

Kamman, G.R., 2018, Written Testimony of Greg Kamman for Part 2 of the California Waterfix Change of Diversion Hearing before the State Water Resources Control Board, November 28, 10p.

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SELECTED EXPERIENCE *(CONTINUED)*

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EXHIBIT
B

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March 7, 2025

Ms. Carmen J. Borg
Urban Planner
Shute, Mihaly & Weinberger LLP
396 Hayes Street
San Francisco, CA 94102-4421

Subject: **Draft Environmental Impact Report for the CEMEX Rockfield Modification Project in Fresno County, California – Biological Issues Review**

Dear Ms. Borg:

I am an ecologist with more than 35 years of professional experience who specializes in the identification, ecological requirements, and regulatory protection of the flora and fauna of central California. I oversee, manage, and carry out projects involving biological resource evaluations; environmental impact assessments; special-status species surveys; aquatic resources determinations and delineations; habitat restoration planning and monitoring; species population management and monitoring; environmental permitting; environmental permit implementation; mitigation monitoring; and environmental compliance. I have contributed to the biological resource sections of hundreds of environmental impact reports, environmental impact statements, and other environmental compliance documents for projects throughout California. I earned a B.S. degree in wildlife and fisheries biology from the University of California, Davis, began working as an ecological consultant in California in 1992, and am a past president of the San Joaquin Valley Chapter and Western Section of The Wildlife Society.

Comment 58B-1

At your request, I reviewed the Draft Environmental Impact Report (Draft EIR) for the CEMEX Rockfield Modification Project (State Clearinghouse Number 2020060123) to identify any biological resource issues. My review focused on Draft EIR Section 4.4 (Biological Resources) and Appendix E (Biological Resources).

Comment 58B-2

The proposed project involves continuing, expanding, and modifying aggregate (rock, sand, and gravel) mining and processing operations on two properties between the San Joaquin River and North Friant Road in Fresno County, California. The two properties include the Plant Site, a 122-acre site approximately 1.5 miles north of the City of Fresno, and the Quarry Site, a 349-acre site approximately 2.0 miles north of the Plant Site.

The project includes two stages:

Stage 1 would involve continuing concurrent operations at both sites for up another 30 years. Operations at the Quarry Site would be modified to include (1) granite mining by drilling and blasting to a depth of 600 feet below the ground surface and (2) aggregate processing, involving washing, screening, crushing, and sorting aggregate.

Stage 2 would involve continuing granite mining and aggregate processing at the Quarry Site for approximately 70 more years.

Pursuant to California Code of Regulations (CCR) Title 14 Section 15002, the purposes of an Environmental Impact Report (EIR) and the California Environmental Quality Act (CEQA) more broadly are to:

(1) inform government decisionmakers and the public about the potential environmental effects of a project;

(2) identify the ways that environmental damage can be avoided or significantly reduced;

(3) prevent significant, avoidable environmental damage by requiring changes to the project, either by adopting alternatives or imposing mitigation measures; and

(4) disclose to the public why a project was approved if that project has significant environmental impacts that cannot be mitigated to a less than significant level.

An EIR must contain sufficient detail and analysis to serve as an adequate informational document, and it must support its conclusions with substantial evidence. That means an EIR must include enough relevant facts, reasonable assumptions based on facts, and expert opinion supported by facts that a fair argument can be made to support its conclusions. With that framework in mind, I

identified the following issues in the Draft EIR that affect the soundness of the analysis of the potential environmental effects of the proposed project on biological resources:

Comment 58B-2 Cont.

1. **The Draft EIR mischaracterizes a jurisdictional habitat.** An accurate description of the environmental setting is essential to establish the environmental baseline. The Draft EIR (Section 4.4.1.7) states the wash water conveyance ditch at the Plant Site is not a stream and therefore altering it would not require notifying the California Department of Fish and Wildlife (CDFW) pursuant to Fish and Game Code Section 1602. Fish and Game Code does not include the definition of a stream. However, CDFW generally considers a stream to be any feature with a bed, channel, and banks that conveys water and supports stream dependent life regardless of the origin and use of that feature. As the wash water conveyance ditch appears to meet those criteria, it likely qualifies as a stream, and diverting or obstructing its flow; altering its bed, channel, or bank; or depositing any material into it would be subject to provisions of Fish and Game Code Section 1600 et seq. This is important because the DRAFT EIR states the ditch is maintained through dredging and vegetation clearing (Section 4.4.1.3) and will be removed with mining (Section 4.10.3.2).

Comment 58B-3

2. **The Draft EIR relies on an outdated and incomplete analysis of potentially occurring special-status species.** The cover pages of the Habitat Assessments for the Plant Site and Quarry Site indicate those assessments were updated in December 2024. However, the record searches cited in those assessments were from 2019. As the associated databases are regularly updated, any records added since 2019 would not have been considered. Furthermore, the industry standard for record searches, especially for EIRs, is a nine-quad search radius, which includes the topographic quadrangle containing the project sites and the eight surrounding quadrangles[1]. Only four quadrangles were searched for this EIR (Section 4.4.1.8). Therefore, some special-status species that could occur on or near the project sites may not have been considered. It follows that the potential environmental effects of the proposed project on any such species would not have been disclosed and addressed. For example, searching the California Natural Diversity Database today and extending the search radius to encompass nine quads reveals several species not addressed in the Draft EIR that could occur on or near the project sites[2].

Comment 58B-4

[1] https://wildlife.ca.gov/Data/CNDDB/FAQ#563522977-what-is-a-9-quad-search

[2] California Department of Fish and Wildlife (CDFW). 2025. California Natural Diversity Database (CNDDB) RareFind 5. https://apps.wildlife.ca.gov. Accessed March 1, 2025.

Such species include California glossy snake, western mastiff bat, pallid bat, spotted bat, and Townsend's big-eared bat. Such species should be addressed before project approval.

Comment 58B-4 Cont.

3. The Draft EIR provides an inadequate analysis of environmental impacts on special-status species.

Comment 58B-5

(a) Swainson's hawk. With more than four dozen breeding season (March through August) occurrence records of this species within 2 miles of the project sites (eBird 2025[3]) and numerous potential nest trees within 0.5 mile, the project may adversely affect nesting Swainson's hawks. Although the Draft EIR states there is a moderate potential for this species to forage over the project sites and nest nearby (Table 4.4-1), it fails to address the potential indirect effects of the project on nesting Swainson's hawks. Noise and dust from blasting, excavating, scraping, or using other heavy equipment such as front-loaders and dozers that causes a Swainson's hawk nest to fail would constitute a significant impact. The unsubstantiated narrative provided in the Draft EIR (e.g., Impact 4.4-2) does not constitute substantial evidence. To sufficiently analyze those potential indirect effects, protocol surveys[4] should be conducted within a 0.5-mile radius around the project sites prior to project approval. If an active nest is identified within the 0.5-mile radius, consultation with the CDFW will be required. Depending on the risk for incidental take of Swainson's hawk, that consultation may lead to the need for the project owner to obtain an incidental take permit from the CDFW under Fish and Game Code Section 2081. Regardless, mitigating the potential for incidental take would likely require (1) conducting pre-construction surveys for Swainson's hawk during the nesting season within a 0.5-mile radius of work activities no more than 30 days before the start of those activities; (2) monitoring any Swainson's hawk nest within that area during project activities to determine if the nesting birds are exhibiting distress or abnormal behavior (e.g., swooping, stooping, giving distress calls, or failing to remain on the nest or deliver prey items) that could cause reproductive failure (i.e., though nest abandonment or loss of eggs

[3] eBird. 2025. eBird: An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. Available: http://www.ebird.org. (Accessed March 1, 2025).
[4] Swainson's Hawk Technical Advisory Committee (SWTAC). 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. 5 pages.

or young); and (3) ceasing project activities until the behavior of the nesting birds has normalized.

Comment 58B-5 Cont.

(b) **Tricolored blackbird**. With more than one dozen breeding season (March-June) occurrence records of this species within 2 miles of the project sites (eBird 2025[5]) and potential nesting habitat in the southeastern portion of the Plant Site (e.g., Photographs 1 and 2 of the Plant Site Habitat Assessment), the project could adversely impact nesting tricolored blackbirds. Although the Draft EIR (Table 4.4-1) states there is a low potential for this species to occur on the project sites, it fails to address the potential indirect effects of the project on nesting tricolored blackbirds. Noise and dust from blasting, excavating, scraping, or using other heavy equipment such as front-loaders and dozers that causes a tricolored blackbird nest to fail would constitute a significant impact. The unsubstantiated narrative provided in the Draft EIR (e.g., Impact 4.4-2) does not constitute substantial evidence.

Comment 58B-6

(c) **Burrowing owl.** The Draft EIR fails to address the potential indirect effects of the project on burrowing owl. For the Plant Site, for example, the Draft EIR (Table 4.4-1) states the species is presumed absent but identifies "line-of-sight opportunities favored by this species". Noise and dust from blasting, excavating, scraping, or using other heavy equipment such as front loaders or dozers that causes a burrowing owl nest to fail would constitute a significant impact. To sufficiently analyze such potential indirect effects, protocol surveys[6], involving evaluating all suitable burrows within 150 meters of the project sites, should be conducted before the project is approved.

Comment 58B-7

(d) **Western red bat.** The Draft EIR (Table 4.4-1) states this species has a moderate potential to roost on the Plant Site. Yet the potential effects of the project on this species were not addressed, and no mitigation was included. Direct impacts or indirect impacts associated with noise from processing and transporting materials that cause a western red bat roost to be abandoned could constitute a significant impact. Because bats are acoustic predators,

Comment 58B-8

[5] eBird. 2025. eBird: An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. Available: http://www.ebird.org. (Accessed March 1, 2025).

[6] California Department of Fish and Game. 2012. Staff Report on Burrowing Owl Mitigation, State of California Natural Resources Agency, Department of Fish and Game. 36 pages.

anthropogenic noise can also compromise their ability to effectively forage.[7] But such analysis was not included in the Draft EIR. Comment 58B-8

(e) **Sanford's arrowhead**. The Draft EIR (Appendix E-1, Table C-1) states this species is presumed absent based on the lack of habitat. However, this species occurs in aquatic habitats like that in the southeastern portion of the Plant Site. The special-status plant species surveys conducted at the Plant Site in 2017 (Appendix E-3) focused on state and federally listed species and their habitats, which are different than that of Sanford's arrowhead. Therefore, this species could be present, and the potential effects of the project on this species should be considered before project approval. Comment 58B-9

(f) **Spring-run Chinook salmon.** The Draft EIR does not discuss the potential effects of mining to 600 feet below the ground surface at the Quarry Site on river flows in the adjacent San Joaquin River. River flows are known to impact juvenile Chinook salmon survival[8]. Therefore, such effects could constitute a significant impact and should be addressed before project approval. Comment 58B-10

4. **The Draft EIR (Section 6.5.2) provides an incomplete analysis of the effects of the proposed project on biological resources compared with the no project alternative at the Quarry Site.** Specifically, the Draft EIR does not address the relative post-reclamation habitat value of comparatively shallow (approximately 20 feet deep) lakes under the no project alternative compared with that of the proposed project that would result in a comparatively deep (approximately 100 feet deep) lake. As habitat value may be inversely related to water depth[9], such analysis should be included before project approval. Comment 58B-11

The Draft EIR's failure to adequately address these issues and provide substantial evidence in support of its conclusions violates CEQA's fundamental requirements for disclosure and analysis and undermines informed decision-making. Comment 58B-12

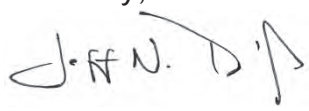
[7] Theobald, E., D. J. Hosken, P. Foster, and K. Moyes. 2020. Mines and bats: the impacts of open-pit mining on bat activity. Acta Chiropterologica 22:157–166.

[8] Michel, C. J., J. J. Notch, F. Cordoleani, A. J. Ammann, and E. M. Danner. 2021. Nonlinear survival of imperiled fish informs managed flows in a highly modified river. Ecosphere 12(5):e03498. 10.1002/ecs2.3498

[9] Lopez, C. B., J. E. Cloern, T. S. Schraga, et al. 2006. Ecological values of shallow-water habitats: implications for the restoration of disturbed ecosystems. Ecosystems 9:422–440.

Thank you for the opportunity to review and comment on this Draft EIR. Comment 58B-12 Cont.

Sincerely,



Jeff N. Davis
Principal Scientist
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EXHIBITS

A. Jeff Davis resume
B. 9-quad search description
C. 9-quad search centered on the Friant 7.5-minute topographic quadrangle
D. Screen shot of eBird breeding season occurrences of Swainson's hawk
E. Swainson's hawk survey protocol
F. Screen shot of eBird breeding season occurrences of tricolored blackbird
G. Staff Report on Burrowing Owl Mitigation
H. Primary literature references (3)

EXHIBIT A

Colibri
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Areas of Expertise

Ecology of California Flora and Fauna
Endangered Species Conservation
Environmental Impact Analysis
Environmental Compliance Monitoring
Wetland and Waters Delineation and Permitting

Education

B.S., Wildlife & Fisheries Biology, UC Davis, 1992

Selected Professional Experience

Principal Scientist, Colibri Ecological Consulting, 2010–present

Project Scientist (Principal Investigator, Seabird Population Survey Program), UC Santa Cruz, 1995–present

Senior Ecologist and Project Manager, H. T. Harvey & Associates, 2006–2011

Independent Consultant, J. Davis Ecological Consulting Services, 1992–2006

Senior Museum Scientist, UC Santa Cruz, 1994–2002

Research Coordinator, Ventana Wildlife Society, 1992–1994

Professional Affiliations

The Wildlife Society – Life Member (Western Section)

American Ornithological Society – Life Member

Western Field Ornithologists – Life Member

Ecological Society of America

Association of Environmental Professionals

Key Publications

Davis, J. N. & C. A. Niemela. 2008. Northern Harrier. In: W. D. Shuford & T. Gardali, editors. California bird species of special concern. *Studies of W. Birds* 1.

Henkel, L. A., R. G. Ford, W. B. Tyler, and **J. N. Davis.** 2007. Comparison of aerial and boat-based survey methods for Marbled Murrelets and other marine birds. *Marine Ornithology* 35:145–151.

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Jeff N. Davis

Principal Scientist

Jeff is an ecologist with more than 35 years of professional experience who specializes in the identification, ecological requirements, and regulatory protection of the flora and fauna of California. As Principal Scientist, Jeff provides technical oversight of all scientists at Colibri and assures the scientific accuracy and adequacy of all work. He oversees, manages, and carries out projects involving biological resource evaluations; environmental impact assessments; special-status species surveys; aquatic resources determinations and delineations; habitat restoration planning and monitoring; species population management and monitoring; environmental permitting; environmental permit implementation; mitigation monitoring; and environmental compliance. He has contributed to the biological resource sections of hundreds environmental impact reports, environmental impact statements, and other environmental compliance documents for projects throughout California. His strengths in this regard include a detailed knowledge of California flora and fauna, the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), federal and state Endangered Species Act regulations, the California Fish and Game Code, and a proven expertise in coordination, communication, and team leading.

Jeff has provided biological support services for thousands of projects in California. Such services have included: (1) evaluating biological constraints; (2) analyzing impacts; (3) preparing permit applications; (4) conducting reconnaissance, focused, and protocol surveys for special-status species; (5) conducting aquatic resource determinations and delineations; (6) conducting noxious weed assessments, mapping, and monitoring; (7) conducting nesting bird surveys; (8) coordinating and overseeing contractor activities; (9) presenting jobsite environmental education programs; and (10) providing onsite biological compliance monitoring. He routinely evaluates biological constraints and impacts to determine the need and schedule for (1) permits and agreements from the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and Regional Water Quality Control Board; (2) biological resource surveys; (3) and limited operating periods.

Jeff is a past president of the Western Section and San Joaquin Valley Chapter of The Wildlife Society.

EXHIBIT B

What is a 9-quad search?

A 9-quad search is a way to quickly create a list of CNDDB-tracked elements documented as occurring in a particular quad as well as the 8 surrounding quads. 9-quad searches are often used to generate a list of potential CNDDB-tracked elements one might encounter when performing surveys in a given area. 9-quad searches should never be used as a substitute for on-the-ground surveys. A 9-quad search can be done using the CNDDB QuickView Tool.

EXHIBIT C

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Friant (3611986) OR Lanes Bridge (3611987) OR Little Table Mtn. (3711917) OR Millerton Lake West (3711916) OR Millerton Lake East (3711915) OR Academy (3611985) OR Round Mountain (3611975) OR Clovis (3611976) OR Fresno North (3611977))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
American bumble bee *Bombus pensylvanicus*	IIHYM24260	None	None	G3G4	S2	
Antioch efferian robberfly *Efferia antiochi*	IIDIP07010	None	None	G1G2	S1S2	
black-crowned night heron *Nycticorax nycticorax*	ABNGA11010	None	None	G5	S4	
Boggs Lake hedge-hyssop *Gratiola heterosepala*	PDSCR0R060	None	Endangered	G2	S2	1B.2
burrowing owl *Athene cunicularia*	ABNSB10010	None	Candidate Endangered	G4	S2	SSC
California glossy snake *Arizona elegans occidentalis*	ARADB01017	None	None	G5T2	S2	SSC
California horned lark *Eremophila alpestris actia*	ABPAT02011	None	None	G5T4Q	S4	WL
California jewelflower *Caulanthus californicus*	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
California linderiella *Linderiella occidentalis*	ICBRA06010	None	None	G2G3	S2S3	
California satintail *Imperata brevifolia*	PMPOA3D020	None	None	G3	S3	2B.1
California tiger salamander - central California DPS *Ambystoma californiense pop. 1*	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
coast horned lizard *Phrynosoma blainvillii*	ARACF12100	None	None	G4	S4	SSC
Crotch's bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G2	S2	
double-crested cormorant *Nannopterum auritum*	ABNFD01020	None	None	G5	S4	WL
dwarf downingia *Downingia pusilla*	PDCAM060C0	None	None	GU	S2	2B.2
foothill yellow-legged frog - south Sierra DPS *Rana boylii pop. 5*	AAABH01055	Endangered	Endangered	G3T2	S2	
forked hare-leaf *Lagophylla dichotoma*	PDAST5J070	None	None	G2	S2	1B.1

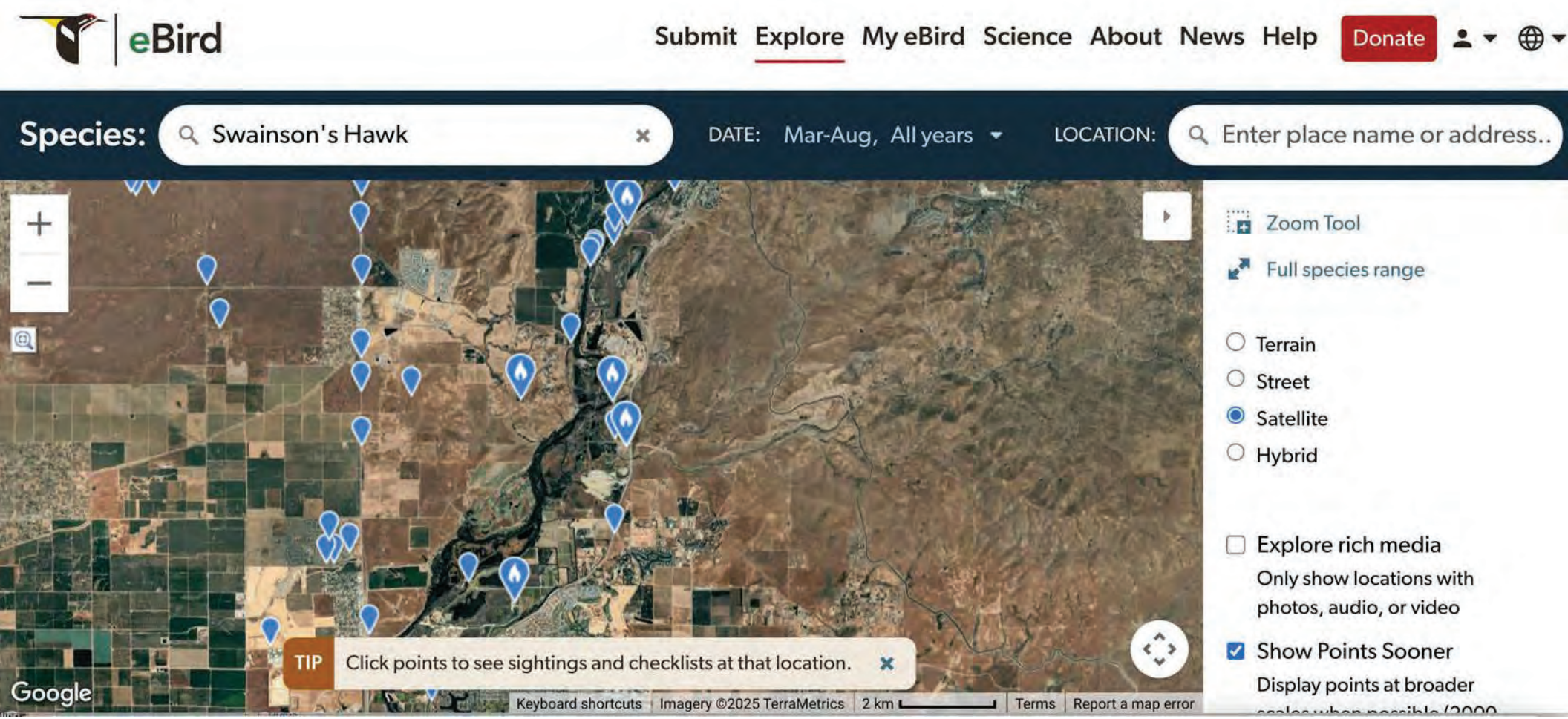
Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Fresno kangaroo rat *Dipodomys nitratoides exilis*	AMAFD03151	Endangered	Endangered	G2TH	SH	
golden eagle *Aquila chrysaetos*	ABNKC22010	None	None	G5	S3	FP
great egret *Ardea alba*	ABNGA04040	None	None	G5	S4	
Great Valley Mixed Riparian Forest *Great Valley Mixed Riparian Forest*	CTT61420CA	None	None	G2	S2.2	
Greene's tuctoria *Tuctoria greenei*	PMPOA6N010	Endangered	Rare	G1	S1	1B.1
hairy Orcutt grass *Orcuttia pilosa*	PMPOA4G040	Endangered	Endangered	G1	S1	1B.1
hardhead *Mylopharodon conocephalus*	AFCJB25010	None	None	G3	S3	SSC
Hartweg's golden sunburst *Pseudobahia bahiifolia*	PDAST7P010	Endangered	Endangered	G1	S1	1B.1
Hoover's calycadenia *Calycadenia hooveri*	PDAST1P040	None	None	G2	S2	1B.3
Hoover's cryptantha *Cryptantha hooveri*	PDBOR0A190	None	None	GH	SH	1A
Hurd's metapogon robberfly *Metapogon hurdi*	IIDIP08010	None	None	G1G2	S1S2	
least Bell's vireo *Vireo bellii pusillus*	ABPBW01114	Endangered	Endangered	G5T2	S3	
Madera leptosiphon *Leptosiphon serrulatus*	PDPLM09130	None	None	G3	S3	1B.2
midvalley fairy shrimp *Branchinecta mesovallensis*	ICBRA03150	None	None	G2	S2S3	
moestan blister beetle *Lytta moesta*	IICOL4C020	None	None	G2	S2	
molestan blister beetle *Lytta molesta*	IICOL4C030	None	None	G2	S2	
Northern Basalt Flow Vernal Pool *Northern Basalt Flow Vernal Pool*	CTT44131CA	None	None	G3	S2.2	
Northern California legless lizard *Anniella pulchra*	ARACC01020	None	None	G3	S2S3	SSC
Northern Claypan Vernal Pool *Northern Claypan Vernal Pool*	CTT44120CA	None	None	G1	S1.1	
Northern Hardpan Vernal Pool *Northern Hardpan Vernal Pool*	CTT44110CA	None	None	G3	S3.1	
northwestern pond turtle *Actinemys marmorata*	ARAAD02031	Proposed Threatened	None	G2	SNR	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
orange lupine *Lupinus citrinus var. citrinus*	PDFAB2B103	None	None	G2T2	S2	1B.2
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G4	S3	SSC
pincushion navarretia *Navarretia myersii ssp. myersii*	PDPLM0C0X1	None	None	G2T2	S2	1B.1
prairie falcon *Falco mexicanus*	ABNKD06090	None	None	G5	S4	WL
San Joaquin adobe sunburst *Pseudobahia peirsonii*	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
San Joaquin kit fox *Vulpes macrotis mutica*	AMAJA03041	Endangered	Threatened	G4T2	S3	
San Joaquin pocket mouse *Perognathus inornatus*	AMAFD01060	None	None	G2G3	S2S3	
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	PMPOA4G060	Threatened	Endangered	G1	S1	1B.1
Sanford's arrowhead *Sagittaria sanfordii*	PMALI040Q0	None	None	G3	S3	1B.2
snowy egret *Egretta thula*	ABNGA06030	None	None	G5	S4	
spicate calycadenia *Calycadenia spicata*	PDAST1P090	None	None	G3?	S3	1B.3
spiny-sepaled button-celery *Eryngium spinosepalum*	PDAPI0Z0Y0	None	None	G2	S2	1B.2
spotted bat *Euderma maculatum*	AMACC07010	None	None	G4	S3	SSC
succulent owl's-clover *Castilleja campestris var. succulenta*	PDSCR0D3Z1	Threatened	Endangered	G4?T2T3	S2S3	1B.2
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S4	
Sycamore Alluvial Woodland *Sycamore Alluvial Woodland*	CTT62100CA	None	None	G1	S1.1	
Table Mountain harvestman *Calicina mesaensis*	ILARAU8070	None	None	G1	S1	
tree-anemone *Carpenteria californica*	PDHDR04010	None	Threatened	G1G2	S1S2	1B.2
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G1G2	S2	SSC
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T3	S3	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered	None	G3	S3	
western mastiff bat *Eumops perotis californicus*	AMACD02011	None	None	G4G5T4	S3S4	SSC
western ridged mussel *Gonidea angulata*	IMBIV19010	None	None	G3	S2	
western spadefoot *Spea hammondii*	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T2T3	S1	

Record Count: 65

EXHIBIT D


eBird
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Species:
Swainson's Hawk
DATE:
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Zoom Tool
Full species range
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Hybrid
Explore rich media
Only show locations with photos, audio, or video
Show Points Sooner
Display points at broader
TIP
Click points to see sightings and checklists at that location.
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Terms
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RECOMMENDED TIMING AND METHODOLOGY FOR SWAINSON'S HAWK NESTING SURVEYS IN CALIFORNIA'S CENTRAL VALLEY

Swainson's Hawk Technical Advisory Committee

May 31, 2000

This set of survey recommendations was developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus reducing the potential for nest failures as a result of project activities/disturbances. The combination of appropriate surveys, risk analysis, and monitoring has been determined to be very effective in reducing the potential for project-induced nest failures. As with most species, when the surveyor is in the right place at the right time, Swainson's hawks may be easy to observe; but some nest sites may be very difficult to locate, and even the most experienced surveyors have missed nests, nesting pairs, mis-identified a hawk in a nest, or believed incorrectly that a nest had failed. There is no substitute for specific Swainson's hawk survey experience and acquiring the correct search image.

METHODOLOGY

Surveys should be conducted in a manner that maximizes the potential to observe the adult Swainson's hawks, as well as the nest/chicks second. To meet the California Department of Fish and Game's (CDFG) recommendations for mitigation and protection of Swainson's hawks, surveys should be conducted for a ½ mile radius around all project activities, and if active nesting is identified within the ½ mile radius, consultation is required. In general, the TAC recommends this approach as well.

Minimum Equipment

Minimum survey equipment includes a high-quality pair of binoculars and a high quality spotting scope. Surveying even the smallest project area will take hours, and poor optics often result in eye-strain and difficulty distinguishing details in vegetation and subject birds. Other equipment includes good maps, GPS units, flagging, and notebooks.

Walking vs Driving

Driving (car or boat) or "windshield surveys" are usually preferred to walking if an adequate roadway is available through or around the project site. While driving, the observer can typically approach much closer to a hawk without causing it to fly. Although it might appear that a flying bird is more visible, they often fly away from the observer using trees as screens; and it is difficult to determine from where a flying bird came. Walking surveys are useful in locating a nest after a nest territory is identified, or when driving is not an option.

Angle and Distance to the Tree

Surveying subject trees from multiple angles will greatly increase the observer's chance of detecting a nest or hawk, especially after trees are fully leafed and when surveying multiple trees

in close proximity. When surveying from an access road, survey in both directions. Maintaining a distance of 50 meters to 200 meters from subject trees is optimal for observing perched and flying hawks without greatly reducing the chance of detecting a nest/young: Once a nesting territory is identified, a closer inspection may be required to locate the nest.

Speed
Travel at a speed that allows for a thorough inspection of a potential nest site. Survey speeds should not exceed 5 miles per hour to the greatest extent possible. If the surveyor must travel faster than 5 miles per hour, stop frequently to scan subject trees.

Visual and Aural Ques
Surveys will be focused on both observations and vocalizations. Observations of nests, perched adults, displaying adults, and chicks during the nesting season are all indicators of nesting Swainson's hawks. In addition, vocalizations are extremely helpful in locating nesting territories. Vocal communication between. hawks is frequent during territorial displays; during courtship and mating; through the nesting period as mates notify each other that food is available or that a threat exists; and as older chicks and fledglings beg for food.

Distractions
Minimize distractions while surveying. Although two pairs of eyes may be better than one pair at times, conversation may limit focus. Radios should be off, not only are they distracting, they may cover a hawk's call.

Notes and Species Observed
Take thorough field notes. Detailed notes and maps of the location of observed Swainson's hawk nests are essential for filling gaps in the Natural Diversity Data Base; please report all observed nest sites. Also document the occurrence of nesting great homed owls, red-tailed hawks, red-shouldered hawks and other potentially competitive species. These species will infrequently nest within 100 yards of each other, so the presence of one species will not necessarily exclude another.

TIMING

To meet **the minimum level** of protection for the species, surveys should be completed for **at least** the two survey periods immediately prior to a project's initiation. For example, if a project is scheduled to begin on June 20, you should complete 3 surveys in Period III and 3 surveys in Period V. However, it is always recommended that surveys be completed in Periods II, III and V. **Surveys should not be conducted in Period IV.**

The survey periods are defined by the timing of migration, courtship, and nesting in a "typical" year for the majority of Swainson's hawks from San Joaquin County to Northern Yolo County. Dates should be adjusted in consideration of early and late nesting seasons, and geographic differences (northern nesters tend to nest slightly later, etc). If you are not sure, contact a TAC member or CDFG biologist.

Survey dates **Justification and search image**	**Survey time**	**Number of Surveys**
I. *January-March 20 (recommended optional)*	*All day*	*1*

Prior to Swainson's hawks returning, it may be helpful to survey the project site to determine potential nest locations. Most nests are easily observed from relatively long distances, giving the surveyor the opportunity to identify potential nest sites, as well as becoming familiar with the project area. It also gives the surveyor the opportunity to locate and map competing species nest sites such as great homed owls from February on, and red-tailed hawks from March on. After March 1, surveyors are likely to observe Swainson's hawks staging in traditional nest territories.

II. *March 20 to April 5*	*Sunrise to 1000* *1600 to sunset*	*3*

Most Central Valley Swainson's hawks return by April 1, and immediately begin occupying their traditional nest territories. For those few that do not return by April 1, there are often hawks ("floaters") that act as place-holders in traditional nest sites; they are birds that do not have mates, but temporarily attach themselves to traditional territories and/or one of the site's "owners." Floaters are usually displaced by the territories' owner(s) if the owner returns.

Most trees are leafless and are relatively transparent; it is easy to observe old nests, staging birds, and competing species. The hawks are usually in their territories during the survey hours, but typically soaring and foraging in the mid-day hours. Swainson's hawks may often be observed involved in territorial and courtship displays, and circling the nest territory. Potential nest sites identified by the observation of staging Swainson's hawks will usually be active territories during that season, although the pair may not successfully nest/reproduce that year.

III. *April 5 to April 20*	*Sunrise to 1200* *1630 to Sunset*	***3***

Although trees are much less transparent at this time, 'activity at the nest site increases significantly. Both males and females are actively nest building, visiting their selected site frequently. Territorial and courtship displays are increased, as is copulation. The birds tend to vocalize often, and nest locations are most easily identified. This period may require a great deal of "sit and watch" surveying.

IV. *April 21 to June 10*	*Monitoring known nest sites only* ***Initiating Surveys is not recommended***	

Nests are extremely difficult to locate this time of year, and even the most experienced surveyor will miss them, especially if the previous surveys have not been done. During this phase of nesting, the female Swainson's hawk is in brood position, very low in the nest, laying eggs, incubating, or protecting the newly hatched and vulnerable chicks; her head may or may not be visible. Nests are often well-hidden, built into heavily vegetated sections of trees or in clumps of mistletoe, making them all but invisible. Trees are usually not viewable from all angles, which may make nest observation impossible.

Following the male to the nest may be the only method to locate it, and the male will spend hours away from the nest foraging, soaring, and will generally avoid drawing attention to the nest site. Even if the observer is fortunate enough to see a male returning with food for the female, if the female determines it is not safe she will not call the male in, and he will not approach the nest; this may happen if the observer, or others, are too close to the nest or if other threats, such as rival hawks, are apparent to the female or male.

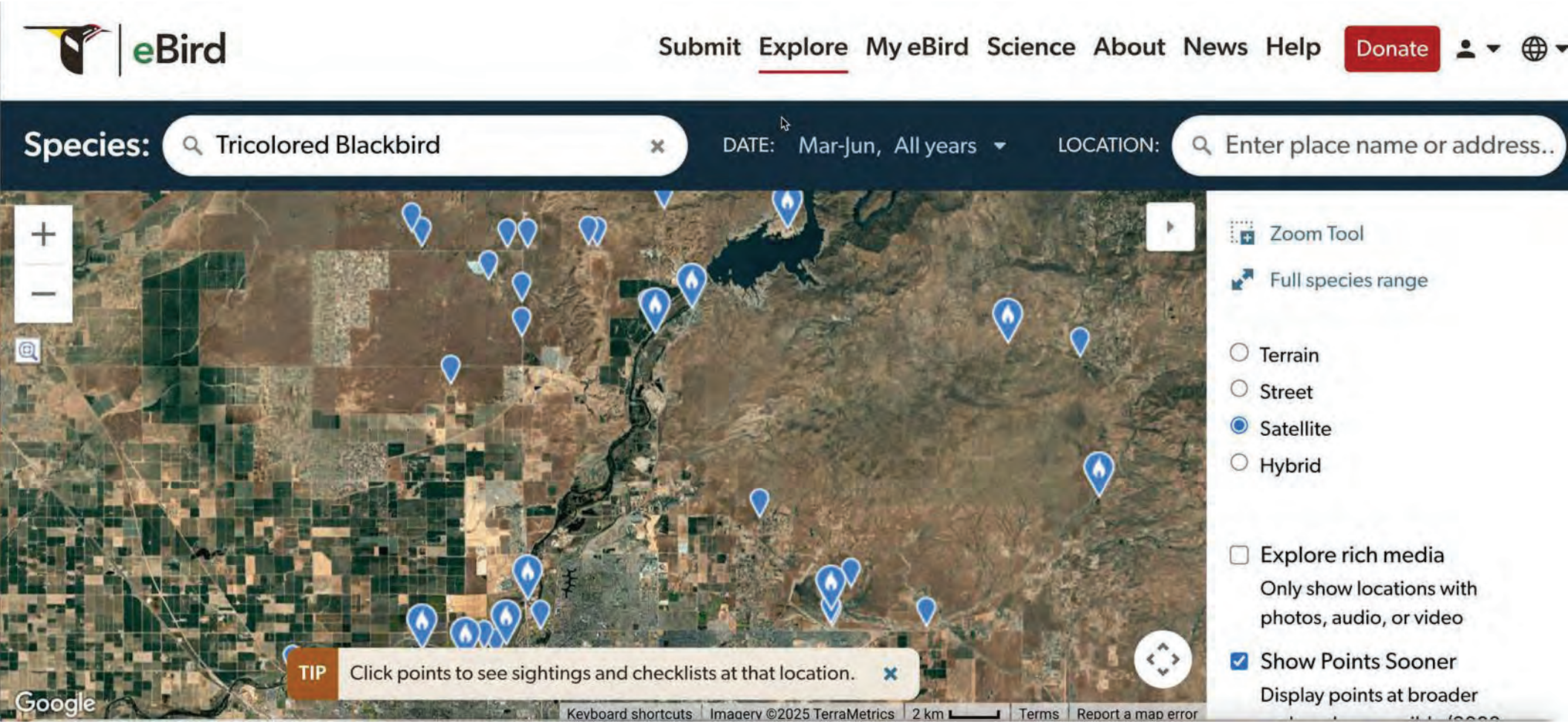
V. ***June 10 to JuIy 30 (post-fledging)*** ***Sunrise to 1200*** ***3***
1600 to sunset

Young are active and visible, and relatively safe without parental protection. Both adults make numerous trips to the nest and are often soaring above, or perched near or on the nest tree. The location and construction of the nest may still limit visibility of the nest, young, ‘and adults.

DETERMINING A PROJECT'S POTENTIAL
FOR IMPACTING SWAINSON'S HAWKS

LEVEL OF RISK	REPRODUCTIVE SUCCESS (Individuals)	LONGTERM SURVIVABILITY (Population)	NORMAL SITE CHARACTERISTICS (Daily Average)	NEST MONI-TORING
HIGH	Direct physical contact with the nest tree while the birds are on eggs or protecting young. (Helicopters in close proximity)	Loss of available foraging area.	Little human-created noise, little human use: nest is well away from dwellings, equipment yards, human access areas, etc. *Do not include general cultivation practices in evaluation.*	MORE
		Loss of nest trees.		
	Loss of nest tree after nest building is begun prior to laying eggs.	Loss of potential nest trees.		
	Personnel within 50 yards of nest tree (out of vehicles) for extended periods while birds are on eggs or protecting young that are < 10 days old.	Cumulative: Multi-year, multi-site projects with substantial noise/personnel disturbance.		
	Initiating construction activities (machinery and personnel) within 200 yards of the nest after eggs are laid and before young are > 10 days old.	Cumulative: Single-season projects with substantial noise/personnel disturbance that is greater than or significantly different from the daily norm.		
	Heavy machinery only working within 50 yards of nest.		Substantial human-created noise and occurrence: nest is near roadways, well-used waterways, active airstrips, areas that have high human use. *Do not include general cultivation practices in evaluation.*	
	Initiating construction activities within 200 yards of nest before nest building begins or after young > 10 days old.	Cumulative: Single-season projects with activities that "blend" well with site's "normal' activities.		
LOW	All project activities (personnel and machinery) greater than 200 yards from nest.			LESS

EXHIBIT F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Science
About
News
Help
Donate
Species:
Tricolored Blackbird
DATE:
Mar-Jun, All years
LOCATION:
Enter place name or address..
Zoom Tool
Full species range
Terrain
Street
Satellite
Hybrid
Explore rich media
Only show locations with photos, audio, or video
Show Points Sooner
Display points at broader
TIP
Click points to see sightings and checklists at that location.
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EXHIBIT G

Staff Report on Burrowing Owl Mitigation

State of California

Natural Resources Agency

Department of Fish and Game

March 7, 2012[1]

[1] This document replaces the Department of Fish and Game 1995 Staff Report On Burrowing Owl Mitigation.

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INTRODUCTION AND PURPOSE

Maintaining California's rich biological diversity is dependent on the conservation of species and their habitats. The California Department of Fish and Game (Department) has designated certain species as "species of special concern" when their population viability and survival is adversely affected by risk factors such as precipitous declines or other vulnerability factors (Shuford and Gardali 2008). Preliminary analyses of regional patterns for breeding populations of burrowing owls (*Athene cunicularia*) have detected declines both locally in their central and southern coastal breeding areas, and statewide where the species has experienced modest breeding range retraction (Gervais et al. 2008). In California, threat factors affecting burrowing owl populations include habitat loss, degradation and modification, and eradication of ground squirrels resulting in a loss of suitable burrows required by burrowing owls for nesting, protection from predators, and shelter (See Appendix A).

The Department recognized the need for a comprehensive conservation and mitigation strategy for burrowing owls, and in 1995 directed staff to prepare a report describing mitigation and survey recommendations. This report, "1995 Staff Report on Burrowing Owl Mitigation," (Staff Report) (CDFG 1995), contained Department-recommended burrowing owl and burrow survey techniques and mitigation measures intended to offset the loss of habitat and slow or reverse further decline of this species. Notwithstanding these measures, over the past 15+ years, burrowing owls have continued to decline in portions of their range (DeSante et al. 2007, Wilkerson and Siegel, 2010). The Department has determined that reversing declining population and range trends for burrowing owls will require implementation of more effective conservation actions, and evaluating the efficacy of the Department's existing recommended avoidance, minimization and mitigation approaches for burrowing owls.

The Department has identified three main actions that together will facilitate a more viable, coordinated, and concerted approach to conservation and mitigation for burrowing owls in California. These include:

1. Incorporating burrowing owl comprehensive conservation strategies into landscape-based planning efforts such as Natural Community Conservation Plans (NCCPs) and multi-species Habitat Conservation Plans (HCPs) that specifically address burrowing owls.
2. Developing and implementing a statewide conservation strategy (Burkett and Johnson, 2007) and local or regional conservation strategies for burrowing owls, including the development and implementation of a statewide burrowing owl survey and monitoring plan.
3. Developing more rigorous burrowing owl survey methods, working to improve the adequacy of impacts assessments; developing clear and effective avoidance and minimization measures; and developing mitigation measures to ensure impacts to the species are effectively addressed at the project, local, and/or regional level (the focus of this document).

This Report sets forth the Department's recommendations for implementing the third approach identified above by revising the 1995 Staff Report, drawing from the most relevant and current knowledge and expertise, and incorporating the best scientific information

available pertaining to the species. It is designed to provide a compilation of the best available science for Department staff, biologists, planners, land managers, California Environmental Quality Act (CEQA) lead agencies, and the public to consider when assessing impacts of projects or other activities on burrowing owls.

This revised Staff Report takes into account the California Burrowing Owl Consortium's Survey Protocol and Mitigation Guidelines (CBOC 1993, 1997) and supersedes the survey, avoidance, minimization and mitigation recommendations in the 1995 Staff Report. Based on experiences gained from implementing the 1995 Staff Report, the Department believes revising that report is warranted. This document also includes general conservation goals and principles for developing mitigation measures for burrowing owls.

DEPARTMENT ROLE AND LEGAL AUTHORITIES

The mission of the Department is to manage California's diverse fish, wildlife and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. The Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitats necessary to maintain biologically sustainable populations of those species (Fish and Game Code (FGC) §1802). The Department, as trustee agency pursuant to CEQA (See CEQA Guidelines, §15386), has jurisdiction by law over natural resources, including fish and wildlife, affected by a project, as that term is defined in Section 21065 of the Public Resources Code. The Department exercises this authority by reviewing and commenting on environmental documents and making recommendations to avoid, minimize, and mitigate potential negative impacts to those resources held in trust for the people of California.

Field surveys designed to detect the presence of a particular species, habitat element, or natural community are one of the tools that can assist biologists in determining whether a species or habitat may be significantly impacted by land use changes or disturbance. The Department reviews field survey data as well as site-specific and regional information to evaluate whether a project's impacts may be significant. This document compiles the best available science for conducting habitat assessments and surveys, and includes considerations for developing measures to avoid impacts or mitigate unavoidable impacts.

CEQA

CEQA requires public agencies in California to analyze and disclose potential environmental impacts associated with a project that the agency will carry out, fund, or approve. Any potentially significant impact must be mitigated to the extent feasible. Project-specific CEQA mitigation is important for burrowing owls because most populations exist on privately owned parcels that, when proposed for development or other types of modification, may be subject to the environmental review requirements of CEQA.

Take

Take of individual burrowing owls and their nests is defined by FGC section 86, and prohibited by sections 3503, 3503.5 and 3513. Take is defined in FGC Section 86 as "hunt, pursue, catch, capture or kill, or attempt to hunt, pursue, catch, capture or kill."

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions between the United States and Canada, Japan, Mexico, and Russia for the protection of migratory birds, including the burrowing owl (50 C.F.R. § 10). The MBTA protects migratory bird nests from possession, sale, purchase, barter, transport, import and export, and collection. The other prohibitions of the MBTA - capture, pursue, hunt, and kill - are inapplicable to nests. The regulatory definition of take, as defined in Title 50 C.F.R. part 10.12, means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to hunt, shoot, wound, kill, trap, capture, or collect. Only the verb "collect" applies to nests. It is illegal to collect, possess, and by any means transfer possession of any migratory bird nest. The MBTA prohibits the destruction of a nest when it contains birds or eggs, and no possession shall occur during the destruction (see Fish and Wildlife Service, Migratory Bird Permit Memorandum, April 15, 2003). Certain exceptions to this prohibition are included in 50 C.F.R. section 21. Pursuant to Fish & Game Code section 3513, the Department enforces the Migratory Bird Treaty Act consistent with rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Treaty Act.

Regional Conservation Plans

Regional multiple species conservation plans offer long-term assurances for conservation of covered species at a landscape scale, in exchange for biologically appropriate levels of incidental take and/or habitat loss as defined in the approved plan. California's NCCP Act (FGC §2800 et seq.) governs such plans at the state level, and was designed to conserve species, natural communities, ecosystems, and ecological processes across a jurisdiction or a collection of jurisdictions. Complementary federal HCPs are governed by the Endangered Species Act (7 U.S.C. § 136, 16 U.S.C.§ 1531 et seq.) (ESA). Regional conservation plans (and certain other landscape-level conservation and management plans), may provide conservation for unlisted as well as listed species. Because the geographic scope of NCCPs and HCPs may span many hundreds of thousands of acres, these planning tools have the potential to play a significant role in conservation of burrowing owls, and grasslands and other habitats.

Fish and Game Commission Policies

There are a number of Fish and Game Commission policies (see FGC §2008) that can be applied to burrowing owl conservation. These include policies on: Raptors, Cooperation, Endangered and Threatened Species, Land Use Planning, Management and Utilization of Fish and Wildlife on Federal Lands, Management and Utilization of Fish and Wildlife on Private Lands, and Research.

GUIDING PRINCIPLES FOR CONSERVATION

Unless otherwise provided in a statewide, local, or regional conservation strategy, surveying and evaluating impacts to burrowing owls, as well as developing and implementing avoidance, minimization, and mitigation and conservation measures incorporate the following principles. These principles are a summary of Department staff expert opinion and were used to guide the preparation of this document.

1. Use the Precautionary Principle (Noss et al.1997), by which the alternative of increased conservation is deliberately chosen in order to buffer against incomplete knowledge of burrowing owl ecology and uncertainty about the consequences to burrowing owls of potential impacts, including those that are cumulative.
2. Employ basic conservation biology tenets and population-level approaches when determining what constitutes appropriate avoidance, minimization, and mitigation for impacts. Include mitigation effectiveness monitoring and reporting, and use an adaptive management loop to modify measures based on results.
3. Protect and conserve owls in wild, semi-natural, and agricultural habitats (conserve is defined at FGC §1802).
4. Protect and conserve natural nest burrows (or burrow surrogates) previously used by burrowing owls and sufficient foraging habitat and protect auxiliary "satellite" burrows that contribute to burrowing owl survivorship and natural behavior of owls.

CONSERVATION GOALS FOR THE BURROWING OWL IN CALIFORNIA

It is Department staff expert opinion that the following goals guide and contribute to the short and long-term conservation of burrowing owls in California:

1. Maintain size and distribution of extant burrowing owl populations (allowing for natural population fluctuations).
2. Increase geographic distribution of burrowing owls into formerly occupied historical range where burrowing owl habitat still exists, or where it can be created or enhanced, and where the reason for its local disappearance is no longer of concern.
3. Increase size of existing populations where possible and appropriate (for example, considering basic ecological principles such as carrying capacity, predator-prey relationships, and inter-specific relationships with other species at risk).
4. Protect and restore self-sustaining ecosystems or natural communities which can support burrowing owls at a landscape scale, and which will require minimal long-term management.
5. Minimize or prevent unnatural causes of burrowing owl population declines (e.g., nest burrow destruction, chemical control of rodent hosts and prey).
6. Augment/restore natural dynamics of burrowing owl populations including movement and genetic exchange among populations, such that the species does not require future listing and protection under the California Endangered Species Act (CESA) and/or the federal Endangered Species Act (ESA).
7. Engage stakeholders, including ranchers; farmers; military; tribes; local, state, and federal agencies; non-governmental organizations; and scientific research and education communities involved in burrowing owl protection and habitat management.

ACTIVITIES WITH THE POTENTIAL TO TAKE OR IMPACT BURROWING OWLS

The following activities are examples of activities that have the potential to take burrowing owls, their nests or eggs, or destroy or degrade burrowing owl habitat: grading, disking, cultivation, earthmoving, burrow blockage, heavy equipment compacting and crushing burrow tunnels, levee maintenance, flooding, burning and mowing (if burrows are impacted), and operating wind turbine collisions (collectively hereafter referred to as "projects" or "activities"

whether carried out pursuant to CEQA or not). In addition, the following activities may have impacts to burrowing owl populations: eradication of host burrowers; changes in vegetation management (i.e. grazing); use of pesticides and rodenticides; destruction, conversion or degradation of nesting, foraging, over-wintering or other habitats; destruction of natural burrows and burrow surrogates; and disturbance which may result in harassment of owls at occupied burrows.

PROJECT IMPACT EVALUATIONS

The following three progressive steps are effective in evaluating whether projects will result in impacts to burrowing owls. The information gained from these steps will inform any subsequent avoidance, minimization and mitigation measures. The steps for project impact evaluations are: 1) habitat assessment, 2) surveys, and 3) impact assessment. Habitat assessments are conducted to evaluate the likelihood that a site supports burrowing owl. Burrowing owl surveys provide information needed to determine the potential effects of proposed projects and activities on burrowing owls, and to avoid take in accordance with FGC sections 86, 3503, and 3503.5. Impact assessments evaluate the extent to which burrowing owls and their habitat may be impacted, directly or indirectly, on and within a reasonable distance of a proposed CEQA project activity or non-CEQA project. These three site evaluation steps are discussed in detail below.

Biologist Qualifications

The current scientific literature indicates that only individuals meeting the following minimum qualifications should perform burrowing owl habitat assessments, surveys, and impact assessments:

1. Familiarity with the species and its local ecology;
2. Experience conducting habitat assessments and non-breeding and breeding season surveys, or experience with these surveys conducted under the direction of an experienced surveyor;
3. Familiarity with the appropriate state and federal statutes related to burrowing owls, scientific research, and conservation;
4. Experience with analyzing impacts of development on burrowing owls and their habitat.

Habitat Assessment Data Collection and Reporting

A habitat assessment is the first step in the evaluation process and will assist investigators in determining whether or not occupancy surveys are needed. Refer to Appendix B for a definition of burrowing owl habitat. Compile the detailed information described in Appendix C when conducting project scoping, conducting a habitat assessment site visit and preparing a habitat assessment report.

Surveys

Burrowing owl surveys are the second step of the evaluation process and the best available scientific literature recommends that they be conducted whenever burrowing owl habitat or sign (see Appendix B) is encountered on or adjacent to (within 150 meters) a project site

(Thomsen 1971, Martin 1973). Occupancy of burrowing owl habitat is confirmed at a site when at least one burrowing owl, or its sign at or near a burrow entrance, is observed within the last three years (Rich 1984). Burrowing owls are more detectable during the breeding season with detection probabilities being highest during the nestling stage (Conway et al. 2008). In California, the burrowing owl breeding season extends from 1 February to 31 August (Haug et al. 1993, Thompsen 1971) with some variances by geographic location and climatic conditions. Several researchers suggest three or more survey visits during daylight hours (Haug and Diduik 1993, CBOC 1997, Conway and Simon 2003) and recommend each visit occur at least three weeks apart during the peak of the breeding season, commonly accepted in California as between 15 April and 15 July (CBOC 1997). Conway and Simon (2003) and Conway et al. (2008) recommended conducting surveys during the day when most burrowing owls in a local area are in the laying and incubation period (so as not to miss early breeding attempts), during the nesting period, and in the late nestling period when most owls are spending time above ground.

Non-breeding season (1 September to 31 January) surveys may provide information on burrowing owl occupancy, but do not substitute for breeding season surveys because results are typically inconclusive. Burrowing owls are more difficult to detect during the non-breeding season and their seasonal residency status is difficult to ascertain. Burrowing owls detected during non-breeding season surveys may be year-round residents, young from the previous breeding season, pre-breeding territorial adults, winter residents, dispersing juveniles, migrants, transients or new colonizers. In addition, the numbers of owls and their pattern of distribution may differ during winter and breeding seasons. However, on rare occasions, non-breeding season surveys may be warranted (i.e., if the site is believed to be a wintering site only based on negative breeding season results). Refer to Appendix D for information on breeding season and non-breeding season survey methodologies.

Survey Reports

Adequate information about burrowing owls present in and adjacent to an area that will be disturbed by a project or activity will enable the Department, reviewing agencies and the public to effectively assess potential impacts and will guide the development of avoidance, minimization, and mitigation measures. The survey report includes but is not limited to a description of the proposed project or proposed activity, including the proposed project start and end dates, as well as a description of disturbances or other activities occurring on-site or nearby. Refer to Appendix D for details included in a survey report.

Impact Assessment

The third step in the evaluation process is the impact assessment. When surveys confirm occupied burrowing owl habitat in or adjoining the project area, there are a number of ways to assess a project's potential significant impacts to burrowing owls and their habitat. Richardson and Miller (1997) recommended monitoring raptor behavior prior to developing management recommendations and buffers to determine the extent to which individuals have been sensitized to human disturbance. Monitoring results will also provide detail necessary for developing site-specific measures. Postovit and Postovit (1987) recommended an analytical approach to mitigation planning: define the problem (impact), set goals (to guide mitigation development), evaluate and select mitigation methods, and monitor the results.

Define the problem. The impact assessment evaluates all factors that could affect burrowing owls. Postovit and Postovit (1987) recommend evaluating the following in assessing impacts to raptors and planning mitigation: type and extent of disturbance, duration and timing of disturbance, visibility of disturbance, sensitivity and ability to habituate, and influence of environmental factors. They suggest identifying and addressing all potential direct and indirect impacts to burrowing owls, regardless of whether or not the impacts will occur during the breeding season. Several examples are given for each impact category below; however, examples are not intended to be used exclusively.

Type and extent of the disturbance. The impact assessment describes the nature (source) and extent (scale) of potential project impacts on occupied, satellite and unoccupied burrows including acreage to be lost (temporary or permanent), fragmentation/edge being created, increased distance to other nesting and foraging habitat, and habitat degradation. Discuss any project activities that impact either breeding and/or non-breeding habitat which could affect owl home range size and spatial configuration, negatively affect onsite and offsite burrowing owl presence, increase energetic costs, lower reproductive success, increase vulnerability to predation, and/or decrease the chance of procuring a mate.

Duration and timing of the impact. The impact assessment describes the amount of time the burrowing owl habitat will be unavailable to burrowing owls (temporary or permanent) on the site and the effect of that loss on essential behaviors or life history requirements of burrowing owls, the overlap of project activities with breeding and/or non-breeding seasons (timing of nesting and/or non-breeding activities may vary with latitude and climatic conditions, which should be considered with the timeline of the project or activity), and any variance of the project activities in intensity, scale and proximity relative to burrowing owl occurrences.

Visibility and sensitivity. Some individual burrowing owls or pairs are more sensitive than others to specific stimuli and may habituate to ongoing visual or audible disturbance. Site-specific monitoring may provide clues to the burrowing owl's sensitivities. This type of assessment addresses the sensitivity of burrowing owls within their nesting area to humans on foot, and vehicular traffic. Other variables are whether the site is primarily in a rural versus urban setting, and whether any prior disturbance (e.g., human development or recreation) is known at the site.

Environmental factors. The impact assessment discusses any environmental factors that could be influenced or changed by the proposed activities including nest site availability, predators, prey availability, burrowing mammal presence and abundance, and threats from other extrinsic factors such as human disturbance, urban interface, feral animals, invasive species, disease or pesticides.

Significance of impacts. The impact assessment evaluates the potential loss of nesting burrows, satellite burrows, foraging habitat, dispersal and migration habitat, wintering habitat, and habitat linkages, including habitat supporting prey and host burrowers and other essential habitat attributes. This assessment determines if impacts to the species will result in significant impacts to the species locally, regionally and range-wide per CEQA Guidelines §15382 and Appendix G. The significance of the impact to habitat depends on the extent of habitat disturbed and length of time the habitat is unavailable (for example: minor – several days, medium – several weeks to months, high - breeding season affecting juvenile survival,

or over winter affecting adult survival).

Cumulative effects. The cumulative effects assessment evaluates two consequences: 1) the project's proportional share of reasonably foreseeable impacts on burrowing owls and habitat caused by the project or in combination with other projects and local influences having impacts on burrowing owls and habitat, and 2) the effects on the regional owl population resulting from the project's impacts to burrowing owls and habitat.

Mitigation goals. Establishing goals will assist in planning mitigation and selecting measures that function at a desired level. Goals also provide a standard by which to measure mitigation success. Unless specifically provided for through other FGC Sections or through specific regulations, take, possession or destruction of individual burrowing owls, their nests and eggs is prohibited under FGC sections 3503, 3503.5 and 3513. Therefore, a required goal for all project activities is to avoid take of burrowing owls. Under CEQA, goals would consist of measures that would avoid, minimize and mitigate impacts to a less than significant level. For individual projects, mitigation must be roughly proportional to the level of impacts, including cumulative impacts, in accordance with the provisions of CEQA (CEQA Guidelines, §§ 15126.4(a)(4)(B), 15064, 15065, and 16355). In order for mitigation measures to be effective, they must be specific, enforceable, and feasible actions that will improve environmental conditions. As set forth in more detail in Appendix A, the current scientific literature supports the conclusion that mitigation for permanent habitat loss necessitates replacement with an equivalent or greater habitat area for breeding, foraging, wintering, dispersal, presence of burrows, burrow surrogates, presence of fossorial mammal dens, well drained soils, and abundant and available prey within close proximity to the burrow.

MITIGATION METHODS

The current scientific literature indicates that any site-specific avoidance or mitigation measures developed should incorporate the best practices presented below or other practices confirmed by experts and the Department. The Department is available to assist in the development of site-specific avoidance and mitigation measures.

Avoiding. A primary goal is to design and implement projects to seasonally and spatially avoid negative impacts and disturbances that could result in take of burrowing owls, nests, or eggs. Other avoidance measures may include but not be limited to:

- Avoid disturbing occupied burrows during the nesting period, from 1 February through 31 August.
- Avoid impacting burrows occupied during the non-breeding season by migratory or non-migratory resident burrowing owls.
- Avoid direct destruction of burrows through chaining (dragging a heavy chain over an area to remove shrubs), disking, cultivation, and urban, industrial, or agricultural development.
- Develop and implement a worker awareness program to increase the on-site worker's recognition of and commitment to burrowing owl protection.
- Place visible markers near burrows to ensure that farm equipment and other machinery does not collapse burrows.
- Do not fumigate, use treated bait or other means of poisoning nuisance animals in areas where burrowing owls are known or suspected to occur (e.g., sites observed with nesting

owls, designated use areas).
- Restrict the use of treated grain to poison mammals to the months of January and February.

Take avoidance (pre-construction) surveys. Take avoidance surveys are intended to detect the presence of burrowing owls on a project site at a fixed period in time and inform necessary take avoidance actions. Take avoidance surveys may detect changes in owl presence such as colonizing owls that have recently moved onto the site, migrating owls, resident burrowing owls changing burrow use, or young of the year that are still present and have not dispersed. Refer to Appendix D for take avoidance survey methodology.

Site surveillance. Burrowing owls may attempt to colonize or re-colonize an area that will be impacted; thus, the current scientific literature indicates a need for ongoing surveillance at the project site during project activities is recommended. The surveillance frequency/effort should be sufficient to detect burrowing owls if they return. Subsequent to their new occupancy or return to the site, take avoidance measures should assure with a high degree of certainty that take of owls will not occur.

Minimizing. If burrowing owls and their habitat can be protected in place on or adjacent to a project site, the use of buffer zones, visual screens or other measures while project activities are occurring can minimize disturbance impacts. Conduct site-specific monitoring to inform development of buffers (see Visibility and sensitivity above). The following general guidelines for implementing buffers should be adjusted to address site-specific conditions using the impact assessment approach described above. The CEQA lead agency and/or project proponent is encouraged to consult with the Department and other burrowing owl experts for assistance in developing site-specific buffer zones and visual screens.

Buffers. Holroyd et al. (2001) identified a need to standardize management and disturbance mitigation guidelines. For instance, guidelines for mitigating impacts by petroleum industries on burrowing owls and other prairie species (Scobie and Faminow, 2000) may be used as a template for future mitigation guidelines (Holroyd et al. 2001). Scobie and Faminow (2000) developed guidelines for activities around occupied burrowing owl nests recommending buffers around low, medium, and high disturbance activities, respectively (see below).

Recommended restricted activity dates and setback distances by level of disturbance for burrowing owls (Scobie and Faminow 2000).

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting sites	April 1-Aug 15	200 m*	500 m	500 m
Nesting sites	Aug 16-Oct 15	200 m	200 m	500 m
Nesting sites	Oct 16-Mar 31	50 m	100 m	500 m

* meters (m)

Based on existing vegetation, human development, and land uses in an area, resource managers may decide to allow human development or resource extraction closer to these area/sites than recommended above. However, if it is decided to allow activities closer than

the setback distances recommended, a broad-scale, long-term, scientifically-rigorous monitoring program ensures that burrowing owls are not detrimentally affected by alternative approaches.

Other minimization measures include eliminating actions that reduce burrowing owl forage and burrowing surrogates (e.g. ground squirrel), or introduce/facilitate burrowing owl predators. Actions that could influence these factors include reducing livestock grazing rates and/or changing the timing or duration of grazing or vegetation management that could result in less suitable habitat.

Burrow exclusion and closure. Burrow exclusion is a technique of installing one-way doors in burrow openings during the non-breeding season to temporarily exclude burrowing owls, or permanently exclude burrowing owls and close burrows after verifying burrows are empty by site monitoring and scoping. Exclusion in and of itself is not a take avoidance, minimization or mitigation method. Eviction of burrowing owls is a potentially significant impact under CEQA.

The long-term demographic consequences of these techniques have not been thoroughly evaluated, and the fate of evicted or excluded burrowing owls has not been systematically studied. Because burrowing owls are dependent on burrows at all times of the year for survival and/or reproduction, evicting them from nesting, roosting, and satellite burrows may lead to indirect impacts or take. Temporary or permanent closure of burrows may result in significant loss of burrows and habitat for reproduction and other life history requirements. Depending on the proximity and availability of alternate habitat, loss of access to burrows will likely result in varying levels of increased stress on burrowing owls and could depress reproduction, increase predation, increase energetic costs, and introduce risks posed by having to find and compete for available burrows. Therefore, exclusion and burrow closure are not recommended where they can be avoided. The current scientific literature indicates consideration of all possible avoidance and minimization measures before temporary or permanent exclusion and closure of burrows is implemented, in order to avoid take.

The results of a study by Trulio (1995) in California showed that burrowing owls passively displaced from their burrows were quickly attracted to adjacent artificial burrows at five of six passive relocation sites. The successful sites were all within 75 meters (m) of the destroyed burrow, a distance generally within a pair's territory. This researcher discouraged using passive relocation to artificial burrows as a mitigation measure for lost burrows without protection of adjacent foraging habitat. The study results indicated artificial burrows were used by evicted burrowing owls when they were approximately 50-100 m from the natural burrow (Thomsen 1971, Haug and Oliphant 1990). Locating artificial or natural burrows more than 100 m from the eviction burrow may greatly reduce the chances that new burrows will be used. Ideally, exclusion and burrow closure is employed only where there are adjacent natural burrows and non-impacted, sufficient habitat for burrowing owls to occupy with permanent protection mechanisms in place. Any new burrowing owl colonizing the project site after the CEQA document has been adopted may constitute changed circumstances that should be addressed in a re-circulated CEQA document.

The current scientific literature indicates that burrow exclusion should only be conducted by qualified biologists (meeting the Biologist’s Qualifications above) during the non-breeding

season, before breeding behavior is exhibited and after the burrow is confirmed empty by site surveillance and/or scoping. The literature also indicates that when temporary or permanent burrow exclusion and/or burrow closure is implemented, burrowing owls should not be excluded from burrows unless or until:

- A Burrowing Owl Exclusion Plan (see Appendix E) is developed and approved by the applicable local DFG office;
- Permanent loss of occupied burrow(s) and habitat is mitigated in accordance with the Mitigating Impacts sections below. Temporary exclusion is mitigated in accordance with the item #1 under Mitigating Impacts below.
- Site monitoring is conducted prior to, during, and after exclusion of burrowing owls from their burrows sufficient to ensure take is avoided. Conduct daily monitoring for one week to confirm young of the year have fledged if the exclusion will occur immediately after the end of the breeding season.
- Excluded burrowing owls are documented using artificial or natural burrows on an adjoining mitigation site (if able to confirm by band re-sight).

Translocation (Active relocation offsite >100 meters). At this time, there is little published information regarding the efficacy of translocating burrowing owls, and additional research is needed to determine subsequent survival and breeding success (Klute et al. 2003, Holroyd et al. 2001). Study results for translocation in Florida implied that hatching success may be decreased for populations of burrowing owls that undergo translocation (Nixon 2006). At this time, the Department is unable to authorize the capture and relocation of burrowing owls except within the context of scientific research (FGC §1002) or a NCCP conservation strategy.

Mitigating impacts. Habitat loss and degradation from rapid urbanization of farmland in the core areas of the Central and Imperial valleys is the greatest of many threats to burrowing owls in California (Shuford and Gardali, 2008). At a minimum, if burrowing owls have been documented to occupy burrows (see Definitions, Appendix B) at the project site in recent years, the current scientific literature supports the conclusion that the site should be considered occupied and mitigation should be required by the CEQA lead agency to address project-specific significant and cumulative impacts. Other site-specific and regionally significant and cumulative impacts may warrant mitigation. The current scientific literature indicates the following to be best practices. If these best practices cannot be implemented, the lead agency or lead investigator may consult with the Department to develop effective mitigation alternatives. The Department is also available to assist in the identification of suitable mitigation lands.

1. Where habitat will be temporarily disturbed, restore the disturbed area to pre-project condition including decompacting soil and revegetating. Permanent habitat protection may be warranted if there is the potential that the temporary impacts may render a nesting site (nesting burrow and satellite burrows) unsustainable or unavailable depending on the time frame, resulting in reduced survival or abandonment. For the latter potential impact, see the permanent impact measures below.
2. Mitigate for permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat such that the habitat acreage, number of burrows and burrowing owls impacted are replaced based on the information provided in Appendix A. Note: A

minimum habitat replacement recommendation is not provided here as it has been shown to serve as a default, replacing any site-specific analysis and discounting the wide variation in natal area, home range, foraging area, and other factors influencing burrowing owls and burrowing owl population persistence in a particular area.

3. Mitigate for permanent impacts to nesting, occupied and satellite burrows and burrowing owl habitat with (a) permanent conservation of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact area, and (b) sufficiently large acreage, and presence of fossorial mammals. The mitigation lands may require habitat enhancements including enhancement or expansion of burrows for breeding, shelter and dispersal opportunity, and removal or control of population stressors. If the mitigation lands are located adjacent to the impacted burrow site, ensure the nearest neighbor artificial or natural burrow clusters are at least within 210 meters (Fisher et al. 2007).
4. Permanently protect mitigation land through a conservation easement deeded to a non-profit conservation organization or public agency with a conservation mission, for the purpose of conserving burrowing owl habitat and prohibiting activities incompatible with burrowing owl use. If the project is located within the service area of a Department-approved burrowing owl conservation bank, the project proponent may purchase available burrowing owl conservation bank credits.
5. Develop and implement a mitigation land management plan to address long-term ecological sustainability and maintenance of the site for burrowing owls (see Management Plan and Artificial Burrow sections below, if applicable).
6. Fund the maintenance and management of mitigation land through the establishment of a long-term funding mechanism such as an endowment.
7. Habitat should not be altered or destroyed, and burrowing owls should not be excluded from burrows, until mitigation lands have been legally secured, are managed for the benefit of burrowing owls according to Department-approved management, monitoring and reporting plans, and the endowment or other long-term funding mechanism is in place or security is provided until these measures are completed.
8. Mitigation lands should be on, adjacent or proximate to the impact site where possible and where habitat is sufficient to support burrowing owls present.
9. Where there is insufficient habitat on, adjacent to, or near project sites where burrowing owls will be excluded, acquire mitigation lands with burrowing owl habitat away from the project site. The selection of mitigation lands should then focus on consolidating and enlarging conservation areas located outside of urban and planned growth areas, within foraging distance of other conserved lands. If mitigation lands are not available adjacent to other conserved lands, increase the mitigation land acreage requirement to ensure a selected site is of sufficient size. Offsite mitigation may not adequately offset the biological and habitat values impacted on a one to one basis. Consult with the Department when determining offsite mitigation acreages.
10. Evaluate and select suitable mitigation lands based on a comparison of the habitat attributes of the impacted and conserved lands, including but not limited to: type and structure of habitat being impacted or conserved; density of burrowing owls in impacted and conserved habitat; and significance of impacted or conserved habitat to the species range-wide. Mitigate for the highest quality burrowing owl habitat impacted first and foremost when identifying mitigation lands, even if a mitigation site is located outside of

a lead agency's jurisdictional boundary, particularly if the lead agency is a city or special district.

11. Select mitigation lands taking into account the potential human and wildlife conflicts or incompatibility, including but not limited to, human foot and vehicle traffic, and predation by cats, loose dogs and urban-adapted wildlife, and incompatible species management (i.e., snowy plover).
12. Where a burrowing owl population appears to be highly adapted to heavily altered habitats such as golf courses, airports, athletic fields, and business complexes, permanently protecting the land, augmenting the site with artificial burrows, and enhancing and maintaining those areas may enhance sustainability of the burrowing owl population onsite. Maintenance includes keeping lands grazed or mowed with weed-eaters or push mowers, free from trees and shrubs, and preventing excessive human and human-related disturbance (e.g., walking, jogging, off-road activity, dog-walking) and loose and feral pets (chasing and, presumably, preying upon owls) that make the environment uninhabitable for burrowing owls (Wesemann and Rowe 1985, Millsap and Bear 2000, Lincer and Bloom 2007). Items 4, 5 and 6 also still apply to this mitigation approach.
13. If there are no other feasible mitigation options available and a lead agency is willing to establish and oversee a Burrowing Owl Mitigation and Conservation Fund that funds on a competitive basis acquisition and permanent habitat conservation, the project proponent may participate in the lead agency's program.

Artificial burrows. Artificial burrows have been used to replace natural burrows either temporarily or long-term and their long-term success is unclear. Artificial burrows may be an effective addition to in-perpetuity habitat mitigation if they are augmenting natural burrows, the burrows are regularly maintained (i.e., no less than annual, with biennial maintenance recommended), and surrounding habitat patches are carefully maintained. There may be some circumstances, for example at airports, where squirrels will not be allowed to persist and create a dynamic burrow system, where artificial burrows may provide some support to an owl population.

Many variables may contribute to the successful use of artificial burrows by burrowing owls, including pre-existence of burrowing owls in the area, availability of food, predators, surrounding vegetation and proximity, number of natural burrows in proximity, type of materials used to build the burrow, size of the burrow and entrance, direction in which the burrow entrance is facing, slope of the entrance, number of burrow entrances per burrow, depth of the burrow, type and height of perches, and annual maintenance needs (Belthoff and King 2002, Smith et al. 2005, Barclay et al. 2011). Refer to Barclay (2008) and (2011) and to Johnson et al. 2010 (unpublished report) for guidance on installing artificial burrows including recommendations for placement, installation and maintenance.

Any long-term reliance on artificial burrows as natural burrow replacements must include semi-annual to annual cleaning and maintenance and/or replacement (Barclay et al. 2011, Smith and Conway 2005, Alexander et al. 2005) as an ongoing management practice. Alexander et al. (2005), in a study of the use of artificial burrows found that all of 20 artificial burrows needed some annual cleaning and maintenance. Burrows were either excavated by predators, blocked by soil or vegetation, or experienced substrate erosion forming a space beneath the tubing that prevented nestlings from re-entering the burrow.

Mitigation lands management plan. Develop a Mitigation Lands Management Plan for projects that require off-site or on-site mitigation habitat protection to ensure compliance with and effectiveness of identified management actions for the mitigation lands. A suggested outline and related vegetation management goals and monitoring success criteria can be found in Appendix E.

Mitigation Monitoring and Reporting

Verify the compliance with required mitigation measures, the accuracy of predictions, and ensure the effectiveness of all mitigation measures for burrowing owls by conducting follow-up monitoring, and implementing midcourse corrections, if necessary, to protect burrowing owls. Refer to CEQA Guidelines Section 15097 and the CEQA Guidelines for additional guidance on mitigation, monitoring and reporting. Monitoring is qualitatively different from site surveillance; monitoring normally has a specific purpose and its outputs and outcomes will usually allow a comparison with some baseline condition of the site before the mitigation (including avoidance and minimization) was undertaken. Ideally, monitoring should be based on the Before-After Control-Impact (BACI) principle (McDonald et al. 2000) that requires knowledge of the pre-mitigation state to provide a reference point for the state and change in state after the project and mitigation have been implemented.

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Appendix A. Burrowing Owl Natural History and Threats

Diet

Burrowing owl diet includes arthropods, small rodents, birds, amphibians, reptiles, and carrion (Haug et al. 1993).

Breeding

In California, the breeding season for the burrowing owl typically occurs between 1 February and 31 August although breeding in December has been documented (Thompson 1971, Gervais et al. 2008); breeding behavior includes nest site selection by the male, pair formation, copulation, egg laying, hatching, fledging, and post-fledging care of young by the parents. The peak of the breeding season occurs between 15 April and 15 July and is the period when most burrowing owls have active nests (eggs or young). The incubation period lasts 29 days (Coulombe 1971) and young fledge after 44 days (Haug et al. 1993). Note that the timing of nesting activities may vary with latitude and climatic conditions. Burrowing owls may change burrows several times during the breeding season, starting when nestlings are about three weeks old (Haug et al. 1993).

Dispersal

The following discussion is an excerpt from Gervais et al (2008):

> "The burrowing owl is often considered a sedentary species (e.g., Thomsen 1971). A large proportion of adults show strong fidelity to their nest site from year to year, especially where resident, as in Florida (74% for females, 83% for males; Millsap and Bear 1997). In California, nest-site fidelity rates were 32%–50% in a large grassland and 57% in an agricultural environment (Ronan 2002, Catlin 2004, Catlin et al. 2005). Differences in these rates among sites may reflect differences in nest predation rates (Catlin 2004, Catlin et al. 2005). Despite the high nest fidelity rates, dispersal distances may be considerable for both juveniles (natal dispersal) and adults (postbreeding dispersal), but this also varied with location (Catlin 2004, Rosier et al. 2006). Distances of 53 km to roughly 150 km have been observed in California for adult and natal dispersal, respectively (D. K. Rosenberg and J. A. Gervais, unpublished data), despite the difficulty in detecting movements beyond the immediate study area (Koenig et al. 1996)."

Habitat

The burrowing owl is a small, long-legged, ground-dwelling bird species, well-adapted to open, relatively flat expanses. In California, preferred habitat is generally typified by short, sparse vegetation with few shrubs, level to gentle topography and well-drained soils (Haug et al. 1993). Grassland, shrub steppe, and desert are naturally occurring habitat types used by the species. In addition, burrowing owls may occur in some agricultural areas, ruderal grassy fields, vacant lots and pastures if the vegetation structure is suitable and there are useable burrows and foraging habitat in proximity (Gervais et al 2008). Unique amongst North

American raptors, the burrowing owl requires underground burrows or other cavities for nesting during the breeding season and for roosting and cover, year round. Burrows used by the owls are usually dug by other species termed host burrowers. In California, California ground squirrel (*Spermophilus beecheyi*) and round-tailed ground squirrel (*Citellus tereticaudus*) burrows are frequently used by burrowing owls but they may use dens or holes dug by other fossorial species including badger (*Taxidea taxus*), coyote (*Canis latrans*), and fox (e.g., San Joaquin kit fox, *Vulpes macrotis mutica*; Ronan 2002). In some instances, owls have been known to excavate their own burrows (Thompson 1971, Barclay 2007). Natural rock cavities, debris piles, culverts, and pipes also are used for nesting and roosting (Rosenberg et al. 1998). Burrowing owls have been documented using artificial burrows for nesting and cover (Smith and Belthoff, 2003).

Foraging habitat. Foraging habitat is essential to burrowing owls. The following discussion is an excerpt from Gervais et al. (2008):

> "Useful as a rough guide to evaluating project impacts and appropriate mitigation for burrowing owls, adult male burrowing owls home ranges have been documented (calculated by minimum convex polygon) to comprise anywhere from 280 acres in intensively irrigated agroecosystems in Imperial Valley (Rosenberg and Haley 2004) to 450 acres in mixed agricultural lands at Lemoore Naval Air Station, CA (Gervais et al. 2003), to 600 acres in pasture in Saskatchewan, Canada (Haug and Oliphant 1990). But owl home ranges may be much larger, perhaps by an order of magnitude, in non-irrigated grasslands such as at Carrizo Plain, California (Gervais et al. 2008), based on telemetry studies and distribution of nests. Foraging occurs primarily within 600 m of their nests (within approximately 300 acres, based on a circle with a 600 m radius) during the breeding season."

Importance of burrows and adjacent habitat. Burrows and the associated surrounding habitat are essential ecological requisites for burrowing owls throughout the year and especially during the breeding season. During the non-breeding season, burrowing owls remain closely associated with burrows, as they continue to use them as refuge from predators, shelter from weather and roost sites. Resident populations will remain near the previous season's nest burrow at least some of the time (Coulombe 1971, Thomsen 1971, Botelho 1996, LaFever et al. 2008).

In a study by Lutz and Plumpton (1999) adult males and females nested in formerly used sites at similar rates (75% and 63%, respectively) (Lutz and Plumpton 1999). Burrow fidelity has been reported in some areas; however, more frequently, burrowing owls reuse traditional nesting areas without necessarily using the same burrow (Haug et al. 1993, Dechant et al. 1999). Burrow and nest sites are re-used at a higher rate if the burrowing owl has reproduced successfully during the previous year (Haug et al. 1993) and if the number of burrows isn't limiting nesting opportunity.

Burrowing owls may use "satellite" or non-nesting burrows, moving young at 10-14 days, presumably to reduce risk of predation (Desmond and Savidge 1998) and possibly to avoid nest parasites (Dechant et al. 1999). Successful nests in Nebraska had more active satellite burrows within 75 m of the nest burrow than unsuccessful nests (Desmond and Savidge

1999). Several studies have documented the number of satellite burrows used by young and adult burrowing owls during the breeding season as between one and 11 burrows with an average use of approximately five burrows (Thompsen 1984, Haug 1985, Haug and Oliphant 1990). Supporting the notion of selecting for nest sites near potential satellite burrows, Ronan (2002) found burrowing owl families would move away from a nest site if their satellite burrows were experimentally removed through blocking their entrance.

Habitat adjacent to burrows has been documented to be important to burrowing owls. Gervais et al. (2003) found that home range sizes of male burrowing owls during the nesting season were highly variable within but not between years. Their results also suggested that owls concentrate foraging efforts within 600 meters of the nest burrow, as was observed in Canada (Haug and Oliphant 1990) and southern California (Rosenberg and Haley 2004). James et al. (1997), reported habitat modification factors causing local burrowing owl declines included habitat fragmentation and loss of connectivity.

In conclusion, the best available science indicates that essential habitat for the burrowing owl in California must include suitable year-round habitat, primarily for breeding, foraging, wintering and dispersal habitat consisting of short or sparse vegetation (at least at some time of year), presence of burrows, burrow surrogates or presence of fossorial mammal dens, well-drained soils, and abundant and available prey within close proximity to the burrow.

Threats to Burrowing Owls in California

Habitat loss. Habitat loss, degradation, and fragmentation are the greatest threats to burrowing owls in California. According to DeSante et al. (2007), “the vast majority of burrowing owls [now] occur in the wide, flat lowland valleys and basins of the Imperial Valley and Great Central Valley [where] for the most part,...the highest rates of residential and commercial development in California are occurring.” Habitat loss from the State’s long history of urbanization in coastal counties has already resulted in either extirpation or drastic reduction of burrowing owl populations there (Gervais et al. 2008). Further, loss of agricultural and other open lands (such as grazed landscapes) also negatively affect owl populations. Because of their need for open habitat with low vegetation, burrowing owls are unlikely to persist in agricultural lands dominated by vineyards and orchards (Gervais et al. 2008).

Control of burrowing rodents. According to Klute et al. (2003), the elimination of burrowing rodents through control programs is a primary factor in the recent and historical decline of burrowing owl populations nationwide. In California, ground squirrel burrows are most often used by burrowing owls for nesting and cover; thus, ground squirrel control programs may affect owl numbers in local areas by eliminating a necessary resource.

Direct mortality. Burrowing owls suffer direct losses from a number of sources. Vehicle collisions are a significant source of mortality especially in the urban interface and where owls nest alongside roads (Haug et al. 1993, Gervais et al. 2008). Road and ditch maintenance, modification of water conveyance structures (Imperial Valley) and discing to control weeds in fallow fields may destroy burrows (Rosenberg and Haley 2004, Catlin and Rosenberg 2006) which may trap or crush owls. Wind turbines at Altamont Pass Wind Resource Area are known to cause direct burrowing owl mortality (Thelander et al. 2003). Exposure to

pesticides may pose a threat to the species but is poorly understood (Klute et al. 2003, Gervais et al. 2008).

Appendix B. Definitions

Some key terms that appear in this document are defined below.

Adjacent habitat means burrowing owl habitat that abuts the area where habitat and burrows will be impacted and rendered non-suitable for occupancy.

Breeding (nesting) season begins as early as 1 February and continues through 31 August (Thomsen 1971, Zarn 1974). The timing of breeding activities may vary with latitude and climatic conditions. The breeding season includes pairing, egg-laying and incubation, and nestling and fledging stages.

Burrow exclusion is a technique of installing one-way doors in burrow openings during the non-breeding season to temporarily exclude burrowing owls or permanently exclude burrowing owls and excavate and close burrows after confirming burrows are empty.

Burrowing owl habitat generally includes, but is not limited to, short or sparse vegetation (at least at some time of year), presence of burrows, burrow surrogates or presence of fossorial mammal dens, well-drained soils, and abundant and available prey.

Burrow surrogates include culverts, piles of concrete rubble, piles of soil, burrows created along soft banks of ditches and canals, pipes, and similar structures.

Civil twilight - Morning civil twilight begins when the geometric center of the sun is 6 degrees below the horizon (civil dawn) and ends at sunrise. Evening civil twilight begins at sunset and ends when the geometric center of the sun reaches 6 degrees below the horizon (civil dusk). During this period there is enough light from the sun that artificial sources of light may not be needed to carry on outdoor activities. This concept is sometimes enshrined in laws, for example, when drivers of automobiles must turn on their headlights (called lighting-up time in the UK); when pilots may exercise the rights to fly aircraft. Civil twilight can also be described as the limit at which twilight illumination is sufficient, under clear weather conditions, for terrestrial objects to be clearly distinguished; at the beginning of morning civil twilight, or end of evening civil twilight, the horizon is clearly defined and the brightest stars are visible under clear atmospheric conditions.

Conservation for burrowing owls may include but may not be limited to protecting remaining breeding pairs or providing for population expansion, protecting and enhancing breeding and essential habitat, and amending or augmenting land use plans to stabilize populations and other specific actions to avoid the need to list the species pursuant to California or federal Endangered Species Acts.

Contiguous means connected together so as to form an uninterrupted expanse in space.

Essential habitat includes nesting, foraging, wintering, and dispersal habitat.

Foraging habitat is habitat within the estimated home range of an occupied burrow, supports suitable prey base, and allows for effective hunting.

Host burrowers include ground squirrels, badgers, foxes, coyotes, gophers etc.

Locally significant species is a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA §15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). Examples include a species at the outer limits of its known range or occurring in a unique habitat type.

Non-breeding season is the period of time when nesting activity is not occurring, generally September 1 through January 31, but may vary with latitude and climatic conditions.

Occupied site or occupancy means a site that is assumed occupied if at least one burrowing owl has been observed occupying a burrow within the last three years (Rich 1984). Occupancy of suitable burrowing owl habitat may also be indicated by owl sign including its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance or perch site.

Other impacting activities may include but may not be limited to agricultural practices, vegetation management and fire control, pest management, conversion of habitat from rangeland or natural lands to more intensive agricultural uses that could result in “take”. These impacting activities may not meet the definition of a project under CEQA.

Passive relocation is a technique of installing one-way doors in burrow openings to temporarily or permanently evict burrowing owls and prevent burrow re-occupation.

Peak of the breeding season is between 15 April and 15 July.

Sign includes its tracks, molted feathers, cast pellets (defined as 1-2” long brown to black regurgitated pellets consisting of non-digestible portions of the owls’ diet, such as fur, bones, claws, beetle elytra, or feathers), prey remains, egg shell fragments, owl white wash, nest burrow decoration materials (e.g., paper, foil, plastic items, livestock or other animal manure, etc.), possible owl perches, or other items.

Appendix C. Habitat Assessment and Reporting Details

Habitat Assessment Data Collection and Reporting

Current scientific literature indicates that it would be most effective to gather the data in the manner described below when conducting project scoping, conducting a habitat assessment site visit and preparing a habitat assessment report:

1. Conduct at least one visit covering the entire potential project/activity area including areas that will be directly or indirectly impacted by the project. Survey adjoining areas within 150 m (Thomsen 1971, Martin 1973), or more where direct or indirect effects could potentially extend offsite. If lawful access cannot be achieved to adjacent areas, surveys can be performed with a spotting scope or other methods.
2. Prior to the site visit, compile relevant biological information for the site and surrounding area to provide a local and regional context.
3. Check all available sources for burrowing owl occurrence information regionally prior to a field inspection. The CNDDB and BIOS (see References cited) may be consulted for known occurrences of burrowing owls. Other sources of information include, but are not limited to, the Proceedings of the California Burrowing Owl Symposium (Barclay et al. 2007), county bird atlas projects, Breeding Bird Survey records, eBIRD (http://ebird.org), Gervais et al. (2008), local reports or experts, museum records, and other site-specific relevant information.
4. Identify vegetation and habitat types potentially supporting burrowing owls in the project area and vicinity.
5. Record and report on the following information:
    a. A full description of the proposed project, including but not limited to, expected work periods, daily work schedules, equipment used, activities performed (such as drilling, construction, excavation, etc.) and whether the expected activities will vary in location or intensity over the project's timeline;
    b. A regional setting map, showing the general project location relative to major roads and other recognizable features;
    c. A detailed map (preferably a USGS topo 7.5' quad base map) of the site and proposed project, including the footprint of proposed land and/or vegetation-altering activities, base map source, identifying topography, landscape features, a north arrow, bar scale, and legend;
    d. A written description of the biological setting, including location (Section, Township, Range, baseline and meridian), acreage, topography, soils, geographic and hydrologic characteristics, land use and management history on and adjoining the site (i.e., whether it is urban, semi-urban or rural; whether there is any evidence of past or current livestock grazing, mowing, disking, or other vegetation management activities);
    e. An analysis of any relevant, historical information concerning burrowing owl use or occupancy (breeding, foraging, over-wintering) on site or in the assessment area;
    f. Vegetation type and structure (using Sawyer et al. 2009), vegetation height, habitat types and features in the surrounding area plus a reasonably sized (as supported with logical justification) assessment area; (Note: use caution in discounting habitat based on grass height as it can be a temporary condition variable by season and conditions (such as current grazing regime) or may be distributed as a mosaic).

g. The presence of burrowing owl individuals or pairs or sign (see Appendix B);
h. The presence of suitable burrows and/or burrow surrogates (>11 cm in diameter (height and width) and >150 cm in depth) (Johnson et al. 2010), regardless of a lack of any burrowing owl sign and/or burrow surrogates; and burrowing owls and/or their sign that have recently or historically (within the last 3 years) been identified on or adjacent to the site.

Appendix D. Breeding and Non-breeding Season Surveys and Reports

Current scientific literature indicates that it is most effective to conduct breeding and non-breeding season surveys and report in the manner that follows:

Breeding Season Surveys

Number of visits and timing. Conduct 4 survey visits: 1) at least one site visit between 15 February and 15 April, and 2) a minimum of three survey visits, at least three weeks apart, between 15 April and 15 July, with at least one visit after 15 June. Note: many burrowing owl migrants are still present in southwestern California during mid-March, therefore, exercise caution in assuming breeding occupancy early in the breeding season.

Survey method. Rosenberg et al. (2007) confirmed walking line transects were most effective in smaller habitat patches. Conduct surveys in all portions of the project site that were identified in the Habitat Assessment and fit the description of habitat in Appendix A. Conduct surveys by walking straight-line transects spaced 7 m to 20 m apart, adjusting for vegetation height and density (Rosenberg et al. 2007). At the start of each transect and, at least, every 100 m, scan the entire visible project area for burrowing owls using binoculars. During walking surveys, record all potential burrows used by burrowing owls as determined by the presence of one or more burrowing owls, pellets, prey remains, whitewash, or decoration. Some burrowing owls may be detected by their calls, so observers should also listen for burrowing owls while conducting the survey.

Care should be taken to minimize disturbance near occupied burrows during all seasons and not to "flush" burrowing owls especially if predators are present to reduce any potential for needless energy expenditure or burrowing owl mortality. Burrowing owls may flush if approached by pedestrians within 50 m (Conway et al. 2003). If raptors or other predators are present that may suppress burrowing owl activity, return at another time or later date for a follow-up survey.

Check all burrowing owls detected for bands and/or color bands and report band combinations to the Bird Banding Laboratory (BBL). Some site-specific variations to survey methods discussed below may be developed in coordination with species experts and Department staff.

Weather conditions. Poor weather may affect the surveyor's ability to detect burrowing owls, therefore, avoid conducting surveys when wind speed is >20 km/hr, and there is precipitation or dense fog. Surveys have greater detection probability if conducted when ambient temperatures are >20º C, <12 km/hr winds, and cloud cover is <75% (Conway et al. 2008).

Time of day. Daily timing of surveys varies according to the literature, latitude, and survey method. However, surveys between morning civil twilight and 10:00 AM and two hours before sunset until evening civil twilight provide the highest detection probabilities (Barclay pers. comm. 2012, Conway et al. 2008).

Alternate methods. If the project site is large enough to warrant an alternate method, consult current literature for generally accepted survey methods and consult with the Department on the proposed survey approach.

Additional breeding season site visits. Additional breeding season site visits may be necessary, especially if non-breeding season exclusion methods are contemplated. Detailed information, such as approximate home ranges of each individual or of family units, as well as foraging areas as related to the proposed project, will be important to document for evaluating impacts, planning avoidance measure implementation and for mitigation measure performance monitoring.

Adverse conditions may prevent investigators from determining presence or occupancy. Disease, predation, drought, high rainfall or site disturbance may preclude presence of burrowing owls in any given year. Any such conditions should be identified and discussed in the survey report. Visits to the site in more than one year may increase the likelihood of detection. Also, visits to adjacent known occupied habitat may help determine appropriate survey timing.

Given the high site fidelity shown by burrowing owls (see Appendix A, Importance of burrows), conducting surveys over several years may be necessary when project activities are ongoing, occur annually, or start and stop seasonally. (See Negative surveys).

Non-breeding Season Surveys

If conducting non-breeding season surveys, follow the methods described above for breeding season surveys, but conduct at least four (4) visits, spread evenly, throughout the non-breeding season. Burrowing owl experts and local Department staff are available to assist with interpreting results.

Negative Surveys

Adverse conditions may prevent investigators from documenting presence or occupancy. Disease, predation, drought, high rainfall or site disturbance may preclude presence of burrowing owl in any given year. Discuss such conditions in the Survey Report. Visits to the site in more than one year increase the likelihood of detection and failure to locate burrowing owls during one field season does not constitute evidence that the site is no longer occupied, particularly if adverse conditions influenced the survey results. Visits to other nearby known occupied sites can affirm whether the survey timing is appropriate.

Take Avoidance Surveys

Field experience from 1995 to present supports the conclusion that it would be effective to complete an initial take avoidance survey no less than 14 days prior to initiating ground disturbance activities using the recommended methods described in the Detection Surveys section above. Implementation of avoidance and minimization measures would be triggered by positive owl presence on the site where project activities will occur. The development of avoidance and minimization approaches would be informed by monitoring the burrowing owls.

Burrowing owls may re-colonize a site after only a few days. Time lapses between project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance.

Survey Reports

Report on the survey methods used and results including the information described in the Summary Report and include the reports within the CEQA documentation:

1. Date, start and end time of surveys including weather conditions (ambient temperature, wind speed, percent cloud cover, precipitation and visibility);
2. Name(s) of surveyor(s) and qualifications;
3. A discussion of how the timing of the survey affected the comprehensiveness and detection probability;
4. A description of survey methods used including transect spacing, point count dispersal and duration, and any calls used;
5. A description and justification of the area surveyed relative to the project area;
6. A description that includes: number of owls or nesting pairs at each location (by nestlings, juveniles, adults, and those of an unknown age), number of burrows being used by owls, and burrowing owl sign at burrows. Include a description of individual markers, such as bands (numbers and colors), transmitters, or unique natural identifying features. If any owls are banded, request documentation from the BBL and bander to report on the details regarding the known history of the banded burrowing owl(s) (age, sex, origins, whether it was previously relocated) and provide with the report if available;
7. A description of the behavior of burrowing owls during the surveys, including feeding, resting, courtship, alarm, territorial defense, and those indicative of parents or juveniles;
8. A list of possible burrowing owl predators present and documentation of any evidence of predation of owls;
9. A detailed map (1:24,000 or closer to show details) showing locations of all burrowing owls, potential burrows, occupied burrows, areas of concentrated burrows, and burrowing owl sign. Locations documented by use of global positioning system (GPS) coordinates must include the datum in which they were collected. The map should include a title, north arrow, bar scale and legend;
10. Signed field forms, photos, etc., as appendices to the field survey report;
11. Recent color photographs of the proposed project or activity site; and
12. Original CNDDB Field Survey Forms should be sent directly to the Department's CNDDB office, and copies should be included in the environmental document as an appendix. (http://www.dfg.ca.gov/bdb/html/cnddb.html).

Appendix E. Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans

Whereas the Department does not recommend exclusion and burrow closure, current scientific literature and experience from 1995 to present, indicate that the following example components for burrowing owl artificial burrow and exclusion plans, combined with consultation with the Department to further develop these plans, would be effective.

Artificial Burrow Location

If a burrow is confirmed occupied on-site, artificial burrow locations should be appropriately located and their use should be documented taking into consideration:

1. A brief description of the project and project site pre-construction;
2. The mitigation measures that will be implemented;
3. Potential conflicting site uses or encumbrances;
4. A comparison of the occupied burrow site(s) and the artificial burrow site(s) (e.g., vegetation, habitat types, fossorial species use in the area, and other features);
5. Artificial burrow(s) proximity to the project activities, roads and drainages;
6. Artificial burrow(s) proximity to other burrows and entrance exposure;
7. Photographs of the site of the occupied burrow(s) and the artificial burrows;
8. Map of the project area that identifies the burrow(s) to be excluded as well as the proposed sites for the artificial burrows;
9. A brief description of the artificial burrow design;
10. Description of the monitoring that will take place during and after project implementation including information that will be provided in a monitoring report.
11. A description of the frequency and type of burrow maintenance.

Exclusion Plan

An Exclusion Plan addresses the following including but not limited to:

1. Confirm by site surveillance that the burrow(s) is empty of burrowing owls and other species preceding burrow scoping;
2. Type of scope and appropriate timing of scoping to avoid impacts;
3. Occupancy factors to look for and what will guide determination of vacancy and excavation timing (one-way doors should be left in place 48 hours to ensure burrowing owls have left the burrow before excavation, visited twice daily and monitored for evidence that owls are inside and can't escape i.e., look for sign immediately inside the door).
4. How the burrow(s) will be excavated. Excavation using hand tools with refilling to prevent reoccupation is preferable whenever possible (may include using piping to stabilize the burrow to prevent collapsing until the entire burrow has been excavated and it can be determined that no owls reside inside the burrow);
5. Removal of other potential owl burrow surrogates or refugia on site;
6. Photographing the excavation and closure of the burrow to demonstrate success and sufficiency;

7. Monitoring of the site to evaluate success and, if needed, to implement remedial measures to prevent subsequent owl use to avoid take;
8. How the impacted site will continually be made inhospitable to burrowing owls and fossorial mammals (e.g., by allowing vegetation to grow tall, heavy disking, or immediate and continuous grading) until development is complete.

Appendix F. Mitigation Management Plan and Vegetation Management Goals

Mitigation Management Plan

A mitigation site management plan will help ensure the appropriate implementation and maintenance for the mitigation site and persistence of the burrowing owls on the site. For an example to review, refer to Rosenberg et al. (2009). The current scientific literature and field experience from 1995 to present indicate that an effective management plan includes the following:

1. Mitigation objectives;
2. Site selection factors (including a comparison of the attributes of the impacted and conserved lands) and baseline assessment;
3. Enhancement of the conserved lands (enhancement of reproductive capacity, enhancement of breeding areas and dispersal opportunities, and removal or control of population stressors);
4. Site protection method and prohibited uses;
5. Site manager roles and responsibilities;
6. Habitat management goals and objectives:
    a. Vegetation management goals,
        i. Vegetation management tools:
            1. Grazing
            2. Mowing
            3. Burning
            4. Other
    b. Management of ground squirrels and other fossorial mammals,
    c. Semi-annual and annual artificial burrow cleaning and maintenance,
    d. Non-natives control – weeds and wildlife,
    e. Trash removal;
7. Financial assurances:
    a. Property analysis record or other financial analysis to determine long-term management funding,
    b. Funding schedule;
8. Performance standards and success criteria;
9. Monitoring, surveys and adaptive management;
10. Maps;
11. Annual reports.

Vegetation Management Goals

- Manage vegetation height and density (especially in immediate proximity to burrows). Suitable vegetation structure varies across sites and vegetation types, but should generally be at the average effective vegetation height of 4.7 cm (Green and Anthony 1989) and <13 cm average effective vegetation height (MacCracken et al. 1985*a)*.
- Employ experimental prescribed fires (controlled, at a small scale) to manage vegetation structure;

- Vegetation reduction or ground disturbance timing, extent, and configuration should avoid take. While local ordinances may require fire prevention through vegetation management, activities like disking, mowing, and grading during the breeding season can result in take of burrowing owls and collapse of burrows, causing nest destruction. Consult the take avoidance surveys section above for pre-management avoidance survey recommendations;
- Promote natural prey distribution and abundance, especially in proximity to occupied burrows; and
- Promote self-sustaining populations of host burrowers by limiting or prohibiting lethal rodent control measures and by ensuring food availability for host burrowers through vegetation management.

Refer to Rosenberg et al. (2009) for a good discussion of managing grasslands for burrowing owls.

Mitigation Site Success Criteria

In order to evaluate the success of mitigation and management strategies for burrowing owls, monitoring is required that is specific to the burrowing owl management plan. Given limited resources, Barclay et al. (2011) suggests managers focus on accurately estimating annual adult owl populations rather than devoting time to estimating reproduction, which shows high annual variation and is difficult to accurately estimate. Therefore, the key objective will be to determine accurately the number of adult burrowing owls and pairs, and if the numbers are maintained. A frequency of 5-10 years for surveys to estimate population size may suffice if there are no changes in the management of the nesting and foraging habitat of the owls.

Effective monitoring and evaluation of off-site and on-site mitigation management success for burrowing owls includes (Barclay, pers. comm.):

- Site tenacity;
- Number of adult owls present and reproducing;
- Colonization by burrowing owls from elsewhere (by band re-sight);
- Evidence and causes of mortality;
- Changes in distribution; and
- Trends in stressors.

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Mines and bats: the impact of open-pit mining on bat activity

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Areas used in open-pit mining often undergo sudden and extensive landscape changes, including habitat fragmentation. With mining activity predicted to expand, understanding the impacts of this habitat loss on wildlife is key to developing effective mitigation at new mine developments. Despite this, research into the impacts of open-pit mines in general, and on bat populations in particular, is largely lacking. Here, we investigated potential impacts of a recently re-established open-pit mine in southwest Britain on bat activity in the surrounding landscape, using remote monitoring techniques. Distance from the mine site boundary was found to be an important predictor of bat species richness and activity levels, with the effect on richness extending to approximately 900 m from the site and the effect on activity potentially extending beyond the sampling range (1,200 m). The effect of distance from the site boundary on species richness also varied with the proportion of woodland cover. It appears that habitat loss within the mine site boundary may have reduced bat movement because of barrier effects. The study highlights the need for further research into the impacts of mines on bats.

Key words: activity, Chiroptera, disturbance, habitat, industry, mining, richness

INTRODUCTION

The dramatic alteration of ecosystems by human populations, particularly since the industrial revolution, has significantly impacted global biodiversity (Steffen *et al*., 2011). The mining industry was crucial in industrialisation and remains so in today's digital age, with the increased emphasis on technology and battery metals such as cobalt and lithium, but the discovery, extraction and processing of minerals is environmentally disruptive, with impacts potentially persisting long after the closure of a mine (Bebbington *et al*., 2008; Spitz and Trudinger, 2008). Mining currently occurs on every continent other than Antarctica and exploration emphasis is now shifting toward areas that have been little explored or previously had restricted accessibility due to politics, legislation or infrastructure (Protocol on Environmental Protection to the Antarctic Treaty, 1991, Art. 8, Doc. No. 102-22, opened for signature 4 Oct 1991; Filho, 2003).

As a result of this past and recent expansion, mining can be a major anthropogenic source of environmental degradation and habitat loss worldwide (Kutz, 2007). Surface mining (largely comprised of strip mining and open-pit mining) accounts for over 80% of ore mined each year, and can lead to sudden and extensive land use change as it requires the removal of vegetation and overburden in order to access an ore deposit (Ramani, 2012; Sonter *et al*., 2014). Given that the extraction stage of mining typically lasts from 10–30 years, biodiversity within the development footprint of open pit mines often experiences ongoing habitat fragmentation and loss impacts (Newmont Mining Corporation, 2018). Even for highly mobile animals like bats, habitat loss can decrease roost availability, reduce foraging opportunities and destroy strategic flyways (Campbell *et al*., 1996; Bambini *et al*., 2011).

Although bats make up one fifth of extant mammal species, many populations are now in decline with over 21% of species classified as Threatened or Near Threatened (IUCN, 2019). Due to their long lifespans and low reproductive output, any mining activity which reduces habitat availability to bats could result in population declines and populations will be slow to recover (Voigt and Kingston, 2016). However, there has been little investigation of potential impacts of mining on bat populations (Barclay, 2014). In addition to habitat loss, the

blasting, transportation and processing of materials during open-pit mining could result in acoustic disturbance effects (Manwar *et al*., 2016). For acoustic predators like bats, noise pollution could compromise foraging efficiency, and therefore reduce activity in the noisy areas (Senzaki *et al*., 2016). However, relatively little is known about the effects of anthropogenic noise on bats, although studies suggest that species using passive listening to locate prey or those echolocating at low frequencies (< 35 kHz) are likely to experience greater disruption from anthropogenic noise (Schaub *et al*., 2008; Bunkley *et al*., 2015).

To ameliorate impacts of disturbance and habitat loss within mining landscapes, habitat restoration is increasingly being used as a tool to slow or prevent biodiversity loss (Burgar *et al*., 2015). In addition to carrying out habitat restoration following mine closure, environmental enhancement is now frequently implemented while mining is still underway (Tischew and Kirmer, 2007). For local bat populations this ecological compensation includes habitat creation or enhancement to provide strategic flyways and additional foraging resources and the provision of bat boxes to offer roosting opportunities (although this only applies to species which roost within tree cavities or buildings or exhibit roost plasticity — Mering and Chambers, 2014; Nielsen and Kelly, 2016). However, despite the emphasis on promoting best practice methodologies through Environmental Impact Assessments (but see Richardson *et al*., 2019), research investigating the impacts of open pit mines on bat populations is lacking (Voigt and Kingston, 2016; Carvalho, 2017). Understanding the extent of potential landscape level effects on species richness and bat activity will enable better management recommendations and ultimately more effective conservation of bat populations (Gorresen and Willig, 2004).

Here, we exploited the opportunity to investigate the impacts of a recently re-established open pit mine on bat populations in the UK. Although tungsten was discovered at the Drakelands site in Southwest England in 1867, historic mineral working only occurred from 1919–1920 and 1934–1944. Mineral working was later re-established in 2014, and Drakelands is now one of only two mines with an annual tungsten concentrate production capacity of more than 3,000 tonnes outside of China (Wolf Minerals Ltd, 2018). Chemical pollution at the site is strictly controlled, with local water sources regularly checked for leached contaminants. Further, light pollution is regulated across the site, with many areas remaining unlit, and light levels along boundary vegetation kept below 4 lux (Gillingham, 2014). The mine processing plant emits noise 24 hours per day, the high frequency portion of this ranging from 12–40 kHz (measured using an Anabat ultrasonic detector (SD2 model — Titley Scientific, Lancashire, UK)) which falls within the auditory range of European bat species (Luo *et al*., 2014). High frequency noise attenuates relatively rapidly in an outdoor environment, therefore the range of ultrasonic noise emitted from the processing plant is likely to be fairly limited (Makarewicz, 1998). Other than blasting, which occurs during the daylight hours but may still have some impact on bats roosting in proximity to the extraction pit, the mine processing plant represents the most significant source of noise locally, with background noise levels in the surrounding area remaining low (West Virginia Department of Environmental Protection, 2006). Therefore, Drakelands represents an ideal study site to investigate the extent of potential impacts of habitat loss and noise on local bat populations at an open pit mine. In order to assess possible impacts, we used remote acoustic monitoring techniques to measure bat activity and species richness in relation to distance from the planning boundary of the mine site.

Materials and Methods

Study Area

The study sampled the landscape surrounding Drakelands mine, in the county of Devon in Southwest Britain (8 km^2; 50°24’47”N, 4°00’58”W — Fig. 1). The Drakelands area is largely composed of agricultural land, interspersed with patches of broadleaf woodland (20%) and a small proportion of conifer plantation (4%). The region has a maritime climate, with mean annual temperatures of 10.5°C and an annual rainfall of approximately 1,000 mm (ClimaTemps, 2017). Bordering Dartmoor National Park, Drakelands mine is situated adjacent to operating China clay mines and is located 2 km from the nearest urban area. The extraction pit measures 850 m × 450 m, with the site footprint covering an area of approximately 4 km^2 (Wolf Minerals Ltd, 2018). Development of the site required the removal of vegetation and destruction of three roosts (one tree roost, two building roosts) used by low numbers of common pipistelle *Pipistrellus pipistrellus* (n = 5), soprano pipistelle *Pipistrellus pygmaeus* (n = 5), greater horseshoe bat *Rhinolophus ferrumequinum* (n = 7) and brown long-eared bat *Plecotus auritus* (n = 3), carried out under European Protected Species Licences. In order to compensate for the loss of bat habitats, extensive mitigation measures have been implemented across the site including habitat creation, the strengthening of commuting routes by thickening hedges, installation of bat boxes and buildings, and a sensitive lighting regime (SLR Consulting, 2013). The majority of these measures are contained within the area of the planning boundary.

FIG. 1. Map detailing the location of Drakelands mine in Southwest England, UK

Field Procedure

A series of 17 line transects was designed in order to evenly sample the landscape surrounding the Drakelands site (Fig. 2). Each transect consisted of five sampling locations, positioned at approximately 20, 300, 600, 900 and 1,200 metres from the planning permission boundary of the mine. A maximum distance of 1,200 metres was selected in order to minimise the potential confounding impacts of the nearby town on bat activity. The landscape to the north of the Drakelands site was not sampled, in order to avoid confounding impacts of near-by China clay pits. Acoustic monitoring was conducted at each transect point for a duration of five consecutive nights, using one of five static Anabat ultrasonic detectors (SD1 and SD2 model — Titley Scientific, Lancashire, UK). Detectors were placed in weatherproof boxes and elevated to 1m above ground level on a tripod, tilted upwards at an angle of approximately 45°, and set to record from 30 minutes before sunset until sunrise. In order to account for potential differences in sensitivity between the detectors a randomised schedule was determined, so that each of the transect sampling points were measured equally by each of the five detectors. All five sampling points within each transect were monitored simultaneously, to avoid bias due to differing environmental conditions between locations. Transects were completed in a random order, with four transects sampled from September−October 2016 and the remaining transects sampled from March−May 2017; the selection of the sampling period was limited by funding constraints. The placement of each acoustic detector was recorded with a Garmin eTrex 10 GPS (Garmin Ltd, Southampton, UK), to determine the actual distance to the mine site. In order to investigate potential species differences in responses to the impacts of the mine resulting from different foraging ecologies, the proportion of woodland cover in the 100 m buffer surrounding each monitoring point was calculated using the Centre for Ecology and Hydrology Land Cover Map 2015 (Rowland *et al*., 2017) and ArcGIS 10.2.2 (ESRI, 2011). Environmental conditions were recorded for each night of sampling using the Global Forecast System (total precipitation, average temperature and average wind speed), as these factors influence levels of bat activity (Fischer *et al*., 2009).

Data were visualised in AnalookW (Titley Scientific, Lancashire, UK), and echolocation calls were visually inspected

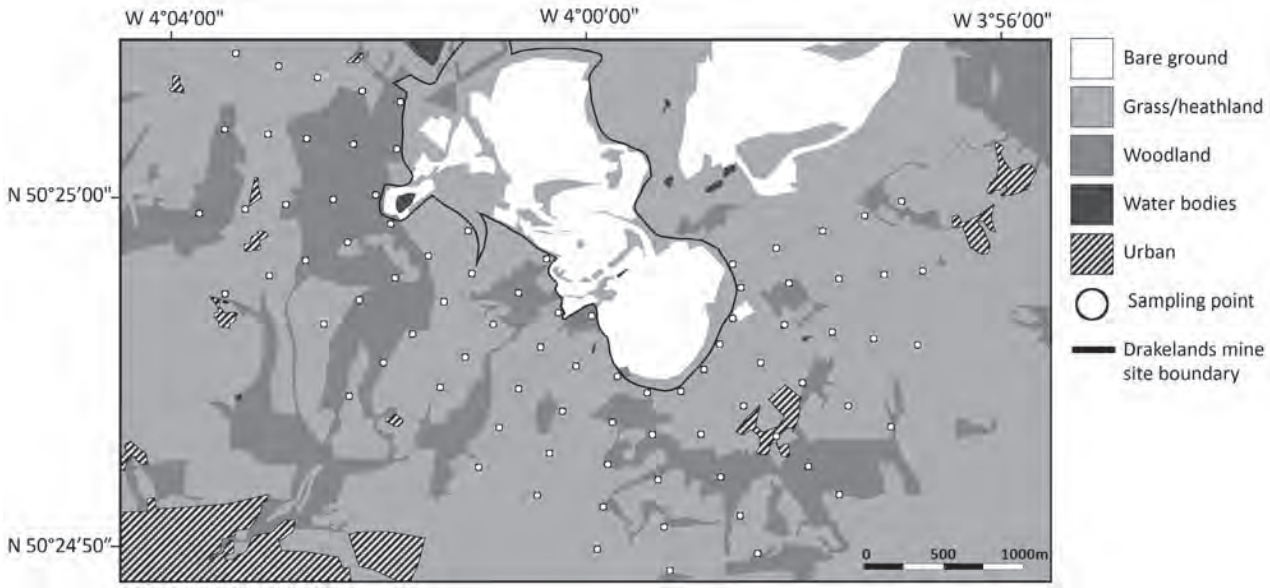

FIG. 2. Map detailing the 17 line transects, positioned at 20, 300, 600, 900, and 1,200 metres from the Drakelands mine site boundary

and assigned to species or genus based on comparison to a reference library of known species and the echolocation parameters provided in the literature by Russ (2012). Echolocation calls assigned to *Myotis* and *Plecotus* were only identified to a genus level, as many of these calls are too similar for accurate species-level assignment (Kunz and Parsons, 2009). Echolocation calls for which confident identification was not possible were labelled 'unknown', this was largely due to calls being too faint, and occasionally because the parameters of a call fell between those of two species. All echolocation calls of the same species identified within a one-minute period were classed as one 'pass'. Species richness was calculated for each night of monitoring, consisting of the sum of the number of species detected (or genus for *Myotis* and *Plecotus*) and excluding those labelled 'unknown'. Total activity was calculated for each night of monitoring as the sum of the number of passes of all species, including those labelled 'unknown', and while bat activity cannot confer abundance, the number of bat passes detected within a unit of time can be a useful measure for comparing the relative functional importance of locations within a study site (Ober and Hayes, 2008).

Data Analysis

Statistical analyses were conducted in R Studio using R version 3.3.1 (R Core Team, 2018) and the ggplot2 package (Wickham, 2016) for graphics. All response variables were assessed for normality, homogeneity of variance and over dispersion using standard diagnostic procedures. Assumptions were checked and appropriate transformations were made to reduce residual variance where necessary (Grueber *et al*., 2011). Generalised Linear Mixed Models (GLMM) were constructed using the package 'lme4' (Bates *et al*., 2015) to investigate whether distance from the mine site had an effect on species richness and total activity. Species richness models were fit using GLMMs by Laplace Approximation with a Poisson error distribution, BOBYQA optimization and a 'log' link function using the package 'lme4' (Bates *et al*., 2015). Activity models were fit using GLMMs by maximum likelihood, with a zero-inflated negative binomial distribution and a 'log' link function using the package 'glmmTMB' (Brooks *et al*., 2017).

The global models contained the fixed effects of distance from the mine site (km), proportion of woodland cover, average wind speed (mph), total precipitation (mm), average temperature (°C) and an interaction between distance and woodland cover. All models contained the random effects of date (to account for temporal autocorrelation) and location (to account for pseudo-replication as multiple nights of monitoring were conducted at each location). Potential spatial autocorrelation was assessed for the variables of species richness and total activity using Moran's I (Paradis *et al*., 2004). Spatial autocorrelation was only found to be significant in species richness (Moran's I: 0.064; $P < 0.001$), therefore the variable of 'Transect ID' was included as a random effect in all species richness models to account for this. Detector I.D. was not included in models, as preliminary analysis revealed that there was no significant differences in performance between detectors in the range of species detected or the total number of calls detected. Lunar phobia (changing foraging habitats or activity schedules as a result of moonlight) does not appear to affect behaviour in the six UK-resident bat species in which this phenomenon has been studied (Karlsson *et al*., 2002; Roeleke *et al*., 2018). As a result, we did not anticipate that moonlight intensity would significantly effect on bat activity in our study and this parameter was not included in our analyses. Models were built using all possible combinations of predictors using the package 'MuMIn' (Barton, 2017) and then ranked using Akaike's Information Criterion corrected for small sample size (AICc), which penalizes models with many explanatory variables (Burnham and Anderson, 2010). Each model was then given an Akaike weight (ΔAICc), and based on the difference in these values, the best fitting models were arrived at. Models for which $\Delta AICc \leq 2$ were considered to have equivalent support and were validated by visual examination of residuals and q-q plots (Bolker *et al*., 2009). According to some model selection methods, the model containing the fewest parameters of those with equivalent support, would be the optimal model (Vandekerckhove *et al*., 2015). However, given that this is an ecological study with substantial noise, where more than one model received equivalent support the top-ranked models ($\Delta AICc \leq 2$) were averaged to create a final model (Whittingham *et al*., 2006). Model averaging was performed by combining parameter estimates from different models in a weighted average to generate a predictive model, using the natural average method (Grueber *et al*., 2011). Confidence intervals were calculated for all parameters included in the final averaged model. Parameters for which the confidence intervals did not include zero were considered useful predictors of species richness and total activity. In order to investigate potential non-linear trends between the species richness and distance from the mine site, we ran simple generalised additive models within each tercile of woodland cover separately, using the package 'mgcv' with a gaussian error distribution and identity link function (Wood, 2011).

Ethical Standards

Permission for field work was granted by respective landowners. Bat activity was surveyed using passive acoustic monitoring and therefore bats were not affected in any way.

Results

A total of 13,610 bat passes were recorded during the study, and this represented at least 11 species (see Supplementary Table S1 for the detection frequency of each species/ genus). Data were not obtained for 14% of sampling locations, due to equipment failure and livestock interference.

In investigating the factors that influence species richness, two of the models generated were considered to have equivalent support ($\Delta AICc \leq 2$ — Table 1). Following model averaging, confidence intervals indicated that distance to the mine site was an important predictor of species richness, with differing trends depending on the proportion of woodland cover (Supplementary Table S2). Within the lower and middle terciles of woodland cover species richness rose gradually with increasing distance from the mine site. However, within the upper tercile of woodland cover species richness increased more steeply with increasing distance (Fig. 3). Visual

TABLE 1. The two top-ranking species richness models for which ΔAICc ≤ 2, which were included in model averaging. Also shown is the null model, which does not contain distance or woodland cover. Shown is the deviance (Dev), the number of model parameters (*K*), the Akaike's Information Criterion (AICc), the difference in Akaike's Information Criterion between each model and the top-ranked model (ΔAICc) and the Akaike's weight (w_i)

Model name	Model rank	Structure of fixed effects (Response = species richness; random effects = date and location)	Dev	*K*	AICc	ΔAICc	w_i
Model 1	1	Distance + woodland cover + wind + precipitation + temperature	1052.9	9	1071.4	0.0	0.51
Model 2	2	Distance* woodland cover + wind + precipitation + temperature	1052.6	10	1073.2	1.8	0.21
Null	6	Temperature + precipitation + wind	1064.6	7	1078.9	7.5	0.01

inspection of the generalised additive models reveals a non-linear trend within the upper tercile of woodland cover, with species richness rising sharply with increasing distance from the mine site, and plateauing at approximately 900 m (Fig. 4). Other important predictors of species richness were precipitation, temperature and wind, with high levels of precipitation and wind correlating with lower richness, and high temperatures correlating with greater richness.

In investigating the factors that influence total bat activity, four of the models generated were considered to have equivalent support (ΔAICc ≤ 2 — Table 2). Following model averaging, confidence intervals indicated that distance to the mine site was an important predictor of total activity, with the level of activity increasing with distance (Supplementary Table S3 and Fig. 5). Other important predictors of activity were precipitation, temperature and wind, with high levels of precipitation and wind correlating with lower activity, and high temperatures correlating with greater activity.

DISCUSSION

An improved understanding of the impacts of open pit mines on bats is crucial for informed management strategies and to help maintain the social contract that exists between mining companies and society at large. There is currently very little information available on these impacts, and we partly address that paucity here. Using model averaging techniques we found that bat species richness and activity levels increased with distance from the Drakelands mine. The effect of distance from the mine site boundary on species richness depended on

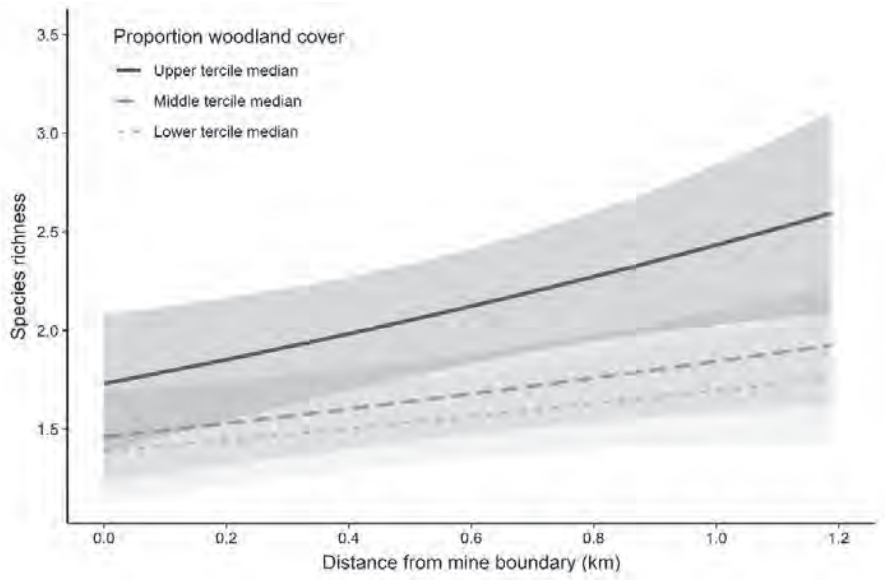

FIG. 3. The relationship between species richness and distance from the mine site, according to the proportion of woodland cover (predicted by Model 2, using averaged values of other fixed effects). Medians of each tercile of woodland cover are 0, 0.133, and 0.576. As can be seen, more species were detected as sampling moved away from the mine site boundary

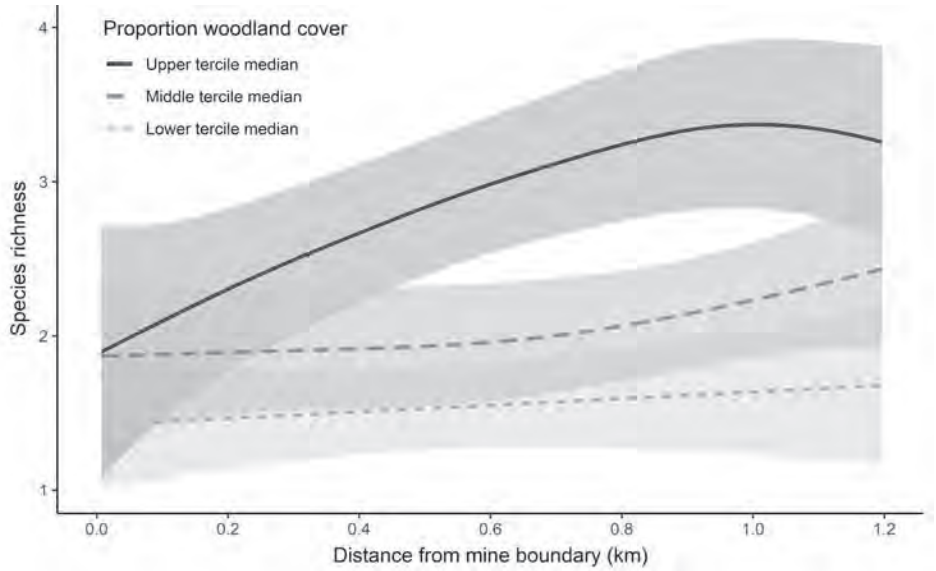

FIG. 4. Bat species richness as a function of distance from the mine site boundary. Simple generalised additive models were used to investigate potential non-linear trends between species richness and distance from the mine site, run separately within each tercile of woodland cover. Here, predictions for the three separate models are displayed on one graph to allow easy comparison. Medians of each tercile of woodland cover are 0, 0.133, and 0.576. In all models there was an increase in species richness to at least 1 km from the mine site boundary

the woodland cover around the mine. Within areas of low and medium woodland cover species richness rose gradually with increasing distance from the mine site. However, within areas of relatively high woodland cover (mean value of 62%) species richness rose more steeply, from 1.9 at the mine site boundary to 3.4 at a distance of 900 m. Given that the majority of the mitigation measures that have been implemented are contained within the site boundary, the impacts of the mining development on bat activity and species richness in the surrounding landscape may be somewhat softened.

It is important to note that the interaction between species richness and woodland cover was not likely to be driven by differences in habitat quality among monitoring locations. The vast majority of monitoring points that were situated in low cover habitats were within grasslands that were used for the grazing of livestock, and not arable farming which is often associated with reduced bat activity and species richness (Vaughan *et al*., 1997). All wooded areas were mature and predominantly broadleaf and furthermore, the wooded areas close to the mine site generally contained more water bodies, which should increase their quality for bat foraging (Vaughan, 1997). The largest woodland patch was also located close to the mine site boundary, although size of woodland patch is not necessarily correlated with the level of bat richness it supports (Law *et al*., 1999; Estrada and Coates-Estrada,

TABLE 2. The four top-ranking total activity models for which ΔAICc ≤ 2, which were included in model averaging. Also shown is the null model, which does not contain distance or woodland cover. Shown is the deviance (Dev), the number of model parameters (*K*), the Akaike's Information Criterion (AICc), the difference in Akaike's Information Criterion between each model and the top-ranked model (ΔAICc) and the Akaike's weight (w_i)

Model name	Model rank	Response = Total activity; random effects = date and location	Dev	*K*	AICc	ΔAICc	w_i
Model 3	1	Distance + precipitation + temperature + wind	2589.4	9	2608.0	0.0	0.25
Model 4	2	Distance + woodland cover + precipitation + temperature + wind	2587.5	10	2608.2	0.2	0.22
Model 5	3	Distance * woodland cover + precipitation + temperature + wind	2586.8	11	2609.7	1.7	0.10
Model 6	4	Distance + precipitation + temperature	2593.3	8	2609.7	1.7	0.10
Null	6	Temperature + precipitation + wind	2594.1	8	2610.6	3.2	0.07

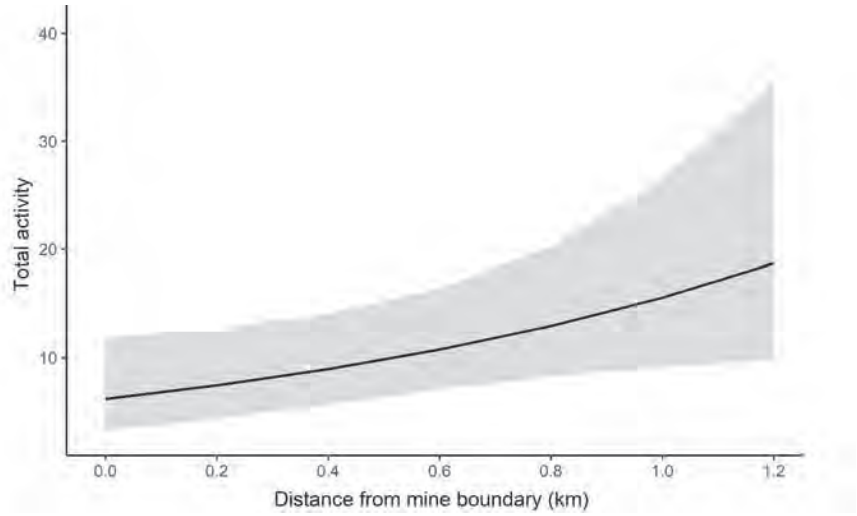

FIG. 5. The relationship between total activity and distance from the mine site (predicted by Model 3, using averaged values of other fixed effects). As the distance from the mine site boundary increased, there was an increase in total bat activity (the total number of passes recorded)

2002). Thus, it seems distance from the mine and woodland cover are both important in determining species richness.

The noise emitted from the mine processing plant may contribute towards the relatively low species richness observed in woodland habitats, close to the site boundary. Studies suggest that by masking insect generated sounds, noise pollution may reduce the foraging efficiency of both *Plecotus auritus* and Bechstein's bat *Myotis bechsteinii*, which are thought to use passive listening to locate prey and are specialised to forage within woodland habitat (Anderson and Racey, 1993; Siemers and Swift, 2006; Schaub *et al*., 2008). Avoiding areas that are degraded by noise and shifting foraging activity further from the site boundary would contribute to the increased species richness further from the site boundary within areas with high woodland cover. A field trial of the impacts of broadband noise at gas compressor stations found some bat activity was reduced to a radius of at least 80 m from the plant suggesting noise is important for some bats (Bunkley *et al*., 2015). However, sound attenuates with distance and we still saw effects up to 900 m from the mine.

A more likely explanation for the patterns detected is that the decreased species richness close to the mine could be linked to the loss of foraging areas, roosting habitat and commuting routes within the site boundary, which would reduce movement of bats in the direction of the mine, generating a barrier effect (Fensome and Mathews, 2016). The susceptibility of bat species to barrier effects varies in accordance with foraging ecology and wing morphology. Long-thin-winged species adapted to fly within low clutter habitats are thought to be less impacted by habitat loss barriers, compared with manoeuvrable species with broad, short wings which forage close to environmental clutter (Norberg and Rayner, 1987; Jones *et al*., 2003; Meyer *et al*., 2008). Furthermore, studies investigating the barrier effects of roads indicate species that forage in open spaces are willing to cross busy highways, whereas clutter specialists rarely do (Kerth and Melber, 2009; Berthinussen and Altringham, 2012*a*, 2012*b*). While we cannot conclusively state that activity decreases were driven by elevated impacts of the mine on clutter specialists, our findings are consistent with the loss of foraging habitats creating barrier effects, especially given the patterns identified (i.e., the interaction between woodland cover and distance). If our interpretation of the patterns detected is correct, effects could be further compounded by impacts on home range size. The short, broad wings of high-clutter specialists impose increased costs on comuting, and therefore the home range of these species tend to be smaller (Norberg and Rayner, 1987; Safi and Kerth, 2004). The relatively small area of habitat loss within the study site is therefore likely to have a greater impact at the local level on high clutter specialists, and a lesser impact on low clutter specialists with greater mobility which may be more affected by landscape level factors at large spatial scales (Fuentes-Montemayor *et al*., 2013).

Distance from the mine site boundary was also found to positively correlate with total nightly bat

activity. As noted above, variation in habitat quality and noise pollution are unlikely to explain this pattern over the distances covered by our surveys. We suggest instead that habitat loss and commuting route disruption because of the mine site probably drives this effect. Consistent with this interpretation, large roads can act as barriers to bats with activity increasing by 23% 1,200 meters from the road (Berthinussen and Altringham, 2012*b*). Here we focussed on total bat activity rather than species-level activity, but total activity was dominated by *P. pipistrellus* (78.1% of calls). Given that *P. pipistrellus* is a generalist and may less disrupted by human activity and habitat loss, the activity decrease toward the mine site boundary may well be greater for some individual species, but testing this requires additional data (Davidson-Watts *et al*., 2006; Richardson *et al*., 2019).

Finally, and consistent with many other studies, we found that that high wind speeds and rainfall resulted in reduced activity generally, while high temperatures correlated with higher species richness and activity (Taylor, 1963; Reichard *et al*., 2010; Voigt *et al*., 2011; Barros *et al*., 2014). These patterns are thought to be due to temperature related shifts in insect activity, variation in the energetic costs of thermoregulation, and sensory constraints on echolocation as a result of rainfall. Our study did not take place during the peak months of bat activity (June–August) (Russ *et al.,* 2006), but despite this, shifts in activity and species richness were still evident. The maternity season occurs during seasonal peak-activity and this may have generated other patterns too. For example, during lactation, female bats often adopt a bimodal (or in some cases trimodal) activity pattern, returning to the maternity roost to suckle offspring during the night (Maier, 1992; Swift, 1980). This could result in elevated activity in the vicinity of maternity roosts, and, depending on the locations of the maternity roosts, potentially alter measured impacts of the mine on bat activity in the surrounding landscape.

To conclude, our findings suggest that open pit mining reduces the activity of some bat species nearby, with negative impacts on species richness potentially extending up to 900 m from the mining activity. We also identified a threefold reduction in total bat activity close to the mine. These trends were observed despite the extensive mitigation measures that have been implemented across the site. To our knowledge, this is the first attempt to quantify impacts of open pit mines on bat populations in the wider landscape. At new open-pit mining developments bat mitigation should seek to develop substantial commuting routes to connect isolated woodland habitat patches with the wider landscape and consider enhancing existing woodland habitats that are located within 1 km of the mine site boundary. Additionally, during link-road construction underpasses created on existing commuting routes may reduce barrier effects for clutter-specialists that fly close to ground-level. Clearly, further research into the species-specific responses of bats to barrier effects is needed to better predict impacts in the wider landscape of new developments.

Supplementary Information

Contents: Supplementary Tables. Table S1. Summary table for number of bat passes per species, and detection frequency; Table S2. Model-averaged parameter estimates: effects of each parameter on species richness in the area surrounding Drakelands mine. Shown is the model-averaged means (Estimate), associated standard error (SE) and confidence intervals (5%, 95%); Table S3. Model-averaged parameter estimates: effects of each parameter on total activity in the area surrounding Drakelands mine. Shown is the model-averaged means (Estimate), associated standard error (SE) and confidence intervals (5%, 95%). Supplementary Information is available exclusively on BioOne.

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Nonlinear survival of imperiled fish informs managed flows in a highly modified river

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Abstract. Water is a fundamental resource in freshwater ecosystems, and streamflow plays a pivotal role in driving riverine ecology and biodiversity. Ecologically functional flows, managed hydrographs that are meant to reproduce the primary components of the natural hydrograph, are touted as a potential way forward to restore ecological functions of highly modified rivers, while also balancing human water needs. A major challenge in implementing functional flows will be establishing the shape of the managed hydrograph so as to optimize improvements to the ecosystem given the limited resources. Identifying the shape of the flow–biology relationship is thus critical for determining the environmental consequences of flow regulation. In California's Central Valley, studies have found that increased streamflow can improve survival of imperiled juvenile salmon populations during their oceanward migration. These studies have not explored the potential nonlinearities between flow and survival, giving resource managers the difficult task of designing flows intended to help salmon without clear guidance on flow targets. We used an information theoretic approach to analyze migration survival data from 2436 acoustic-tagged juvenile Chinook salmon from studies spanning differing water years (2013–2019) to extract actionable information on the flow–survival relationship. This relationship was best described by a step function, with three flow thresholds that we defined as minimum (4259 cfs), historic mean (10,712 cfs), and high (22,872 cfs). Survival varied by flow threshold: 3.0% below minimum, 18.9% between minimum and historic mean, 50.8% between historic mean and high, and 35.3% above high. We used these thresholds to design alternative hydrographs over the same years that included an important component of functional flows: spring pulse flows. We compared predicted cohort migration survival between actual and alternative hydrographs. Managed hydrographs with pulse flows that targeted high survival thresholds were predicted to increase annual cohort migration survival by 55–132% without any additions to the water budget and by 79–330% with a modest addition to the water budget. These quantitative estimates of the biological consequences of different flow thresholds provide resource managers with critical information for designing functional flow regimes that benefit salmon in California's highly constrained water management arena.

Key words: California; flow regulation; functional flows; migration; resource management; salmon; survival; telemetry.

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Introduction

In rivers, natural flow regimes are directly linked with ecological processes that govern the life history of aquatic organisms, and are a major determinant of biodiversity (Bunn and Arthington 2002). Identifying the shapes of flow–ecology relationships is therefore critical for determining the biological consequences of water withdrawal or flow regulation on the ecosystem and to establish well-informed water management rules and recommendations (Rosenfeld 2017). Water resource use and development in watersheds has altered natural flow regimes, which in turn has altered riverine ecosystems, and is generally acknowledged to have considerable negative impacts on native biota (Pringle et al. 2000). As water resources become increasingly overtaxed due to population growth and climate change (Tanaka et al. 2006, Palmer et al. 2008), the task of balancing human and ecosystem needs will become more urgent and politically charged (Arthington et al. 2018). More than ever, objective, science-based approaches are needed for informing the development of water resource allocation targets (Petts 2009).

Few freshwater systems illustrate the management challenges of balancing environmental resources with the restoration of a collapsing ecosystem better than California's Central Valley (CCV) watershed. Here, water is heavily regulated as it supports a multi-billion dollar agricultural economy as well as tens of millions of urban and suburban water users (Speir et al. 2015). The ecosystem is vastly different than it was historically, with many native fish populations diminishing, and increasingly extreme climatic events impacting water availability (Hanak and Lund 2012). Researchers at the nonpartisan Public Policy Institute of California have suggested that restoration of native fish populations and general ecosystem health in the CCV is unattainable under the current regulatory status quo (Mount et al. 2019). These same authors propose that ecosystem-based management of the CCV is a potential way forward. Two key changes would be the adoption of ecologically functional flows (Yarnell et al. 2015, 2020) and an ecosystem water budget. Functional flows are managed hydrographs that are meant to reproduce the primary components of the natural, unimpaired hydrograph so as to restore related geomorphic, biogeochemical, or ecological functions, while also balancing human water needs. An ecosystem water budget is essentially a water right for the environment: a set amount of water than may be allocated as resource managers see fit to improve the condition of the ecosystem. If these two key changes were implemented throughout the CCV, one of the major challenges will be establishing the shape and magnitude of the managed hydrograph so as to optimize improvements to the ecosystem, given a fixed water budget. A key part of this challenge is predicting the biotic responses to different flow targets.

In the CCV, hydrologic infrastructure and water management have strongly modified the hydrograph of most river systems, including the Sacramento River, resulting in reduced winter and spring discharges (Brown and Bauer 2009). The spring rainfall and snowmelt recession is a critical facet of the CCV Mediterranean-type flow regime, and alterations to this hydrograph strongly affect riverine species which have evolved to use high spring flows resulting from winter and spring rain-fed and snowmelt runoff (Yarnell et al. 2010). Among them, CCV Chinook salmon (*Oncorhynchus tshawytscha*) populations have been particularly impacted by water management in frastructure and altered flow regimes (Yoshiyama et al. 1998, Kimmerer 2008). Of the five historic Chinook salmon populations in the CCV, one has been extirpated, one is listed as endangered, one is listed as threatened, and the other two are listed as Species of Concern under the Endangered Species Act (ESA).

One of the primary impacts of the water management infrastructure and altered flow regimes in the CCV on salmon is the reduction in spring outmigration (i.e., seaward) survival of juvenile salmon (Kjelson et al. 1981, Notch et al. 2020). Importantly, the survival bottleneck at this life stage has significant repercussions throughout the Chinook salmon lifecycle (Michel 2019). Therefore, one vital aspect for implementation of functional flows in the CCV is to assess how they will impact juvenile Chinook salmon during their spring outmigration to the Pacific Ocean. One promising component of proposed functional flows in the CCV is the implementation of spring pulse flows (Yarnell et al. 2015), as these may recreate the ideal outmigration conditions salmon historically benefitted from.

To date, studies have found strong, positive linear relationships between survival and flow in CCV rivers (Kjelson et al. 1981, Zeug et al. 2014, Henderson et al. 2019, Notch et al. 2020). However, when environmental resources are also commercially important for competing needs, this creates a problem: How to allocate limited resources if the only guidance managers have is that more is better for the population or ecosystem process in question? This difficulty often results from the statistical techniques traditionally used by ecologists, which by design only reveal linear relationships between populations or ecosystem processes and the environment. Yet, these relationships are rarely linear (Hunsicker et al. 2016, Rosenfeld 2017), and these nonlinearities can play a critical role in the population or ecosystem dynamics. Several studies have shown that nonlinear responses of ecosystems to environmental resource changes could initiate catastrophic regime shifts and local population extinction events (Scheffer et al. 2001). Therefore, it is important to explore possible nonlinearities between environmental resources and ecosystem processes, with the particular objective of finding information that is more actionable to resource managers. This is especially pertinent to Pacific salmon stocks that are often found in the middle of constrained resource management arenas (Munsch et al. 2020).

We investigated the link between flow variations in the Sacramento River, the primary Chinook salmon river in the CCV watershed, and outmigration survival of juvenile Chinook salmon. We also evaluated hypothetical outmigration survival rates in the context of alternative flow regimes. We addressed the following questions: (1) Is there evidence of nonlinearity in the flow–survival relationship in the Sacramento River? (2) If so, how can knowledge of the nonlinear relationship be used to enact ecologically functional flows that benefit juvenile Chinook salmon? Finally, we weigh the efficacy of two different alternative flow regimes on increasing population-level Chinook salmon outmigration survival rates.

Methods

Study area

The Sacramento River is the largest river in California and supports the second largest population complex of Chinook salmon on the U.S. West Coast. However, the Sacramento River has been severely altered from its historic state, with major dams constructed throughout its watershed, extensive water diversions in place for municipal, industrial, and agricultural uses, and diking for flood control and land reclamation. Shasta Reservoir and its downstream forebay Keswick Reservoir are key components in the interface between human alterations and the ecosystem in the Sacramento River. These reservoirs block passage to historic salmonid spawning and rearing habitat upstream and also regulate downstream flow. During all months, the large majority of streamflow in the Sacramento River is regulated by reservoir operations, which alters the seasonal patterns of the natural hydrograph, including the homogenization and reduction of flows during some critical salmon rearing and migration periods (Brown and Bauer 2009), as well as altering other environmental conditions, such as water temperature and turbidity.

All of the juvenile winter-run Chinook salmon (ESA endangered status), significant portions of the juvenile spring-run Chinook salmon (ESA threatened status), and juvenile fall/late-fall-run Chinook salmon (ESA species of concern) must navigate a portion of the Sacramento River with several large-scale, and hundreds of small-scale, water diversions. In the late spring, when a large portion of these juveniles outmigrate, natural seasonal reductions in tributary inputs coincide with increases in water diversions; the cumulative impacts of which result in incrementally lower flows in the more downstream reaches, until the confluence with the Feather River, the largest tributary of the Sacramento River (Fig. 1). This pattern is primarily expressed in a region (hereafter "region of interest") extending from the last major tributary before the Feather River on the upper end, the confluence with Deer Creek (Tehama County, river kilometer [rkm–distance from the Pacific Ocean by way of river] 425), to the Feather River confluence on the lower end (Sutter County, rkm 204; Fig. 2). We presume that detrimental impacts of low flows are primarily expressed in this region, where flows in the late spring are often the lowest of the year. In addition, flows in this region are considerably lower relative to the portions of the Sacramento

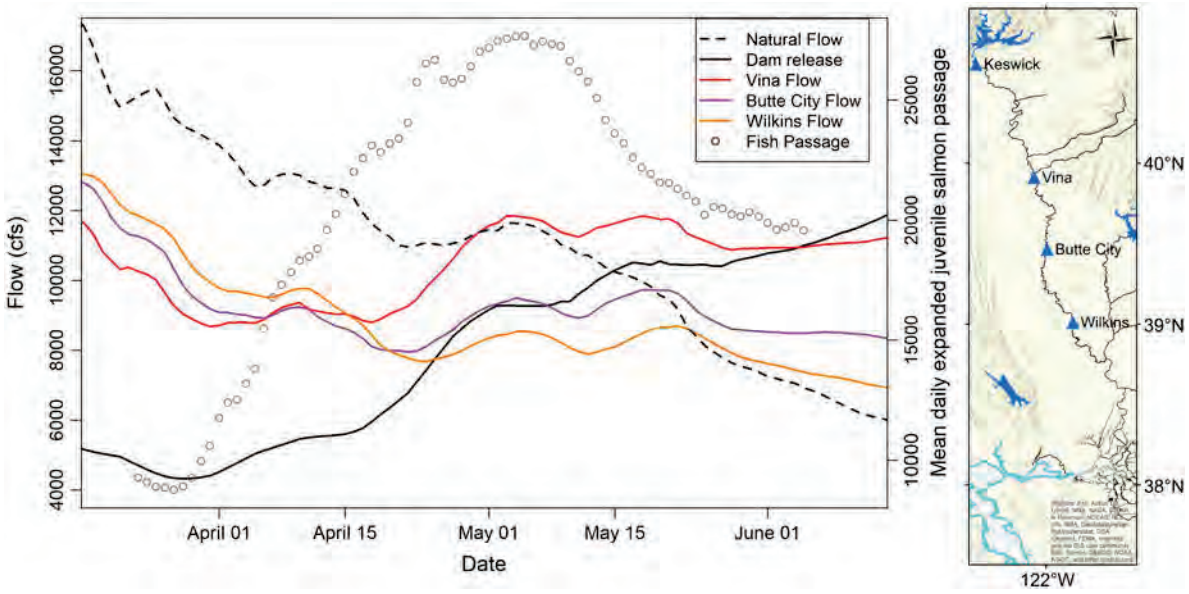

Fig. 1. Mean daily Sacramento River hydrographs for the spring period from 2000 to 2019, (excluding those classified as wet: 2006, 2011, 2017, 2019), mean daily natural hydrograph (dashed line), and mean daily expanded juvenile salmon passage (gray points, data from USFWS Red Bluff rotary screw traps, 38 rkm upstream of the region of interest). Flow levels (in cfs) are plotted through time at several gauges along the river, starting from Keswick gauge (dam release: USGS station number 11370500) on the upstream end to Wilkins Slough gauge (USGS station number 11390500) on the downstream end (color legend inset has gauges listed in order from upstream to downstream). The mean daily natural flow regime is the sum of the full natural flow statistic on the California Data Exchange Center (http://cdec.water.ca.gov) for the Bend Bridge (BND) gauging station, along with the daily flow from Mill Creek (USGS 11381500) and Deer Creek (USGS 11383500) gauges. It is therefore representative of the estimated full natural flow entering the region of interest. A 10-d moving average smoothing has been applied to all hydrographs and fish passage data. All stream gauges are operated by either USGS, US Bureau of Reclamation, or California Department of Water Resources.

River upstream and downstream, both of which are not characteristic of historic conditions. The survival rate of acoustic-tagged juvenile Chinook salmon in certain sections of this region is the lowest on the Sacramento River (Michel et al. 2015, Notch et al. 2020).

Study fish and season

The large majority of juvenile Chinook salmon in the Sacramento River rear and outmigrate during the winter or spring months (Fisher 1994). Historically, these seasons typically provided adequate flows and cool water temperatures to allow for juveniles to rear in, and transit through, downstream regions. At present, flows are only occasionally adequate for outmigration or off-channel rearing in most years. This is primarily due to reduced reservoir releases in order to store water for use in the summer months, after the outmigration window (Sturrock et al. 2020). In the winter and early spring, flows increase in the downstream direction from Keswick to Wilkins Slough until mid-April (Fig. 1), driven by tributary inflows that greatly exceed diversions. After mid-April, there is an inversion in this pattern, and flows are substantially lower at Wilkins Slough compared to Keswick (Fig. 1), resulting from cumulative diversions greatly exceeding tributary inflows during the agricultural irrigation season. It is during this same mid- to late spring period, after the inversion, that a significant portion of natural-origin juvenile salmon outmigrate through this region (Fig. 1). In addition, most CCV juvenile Chinook salmon

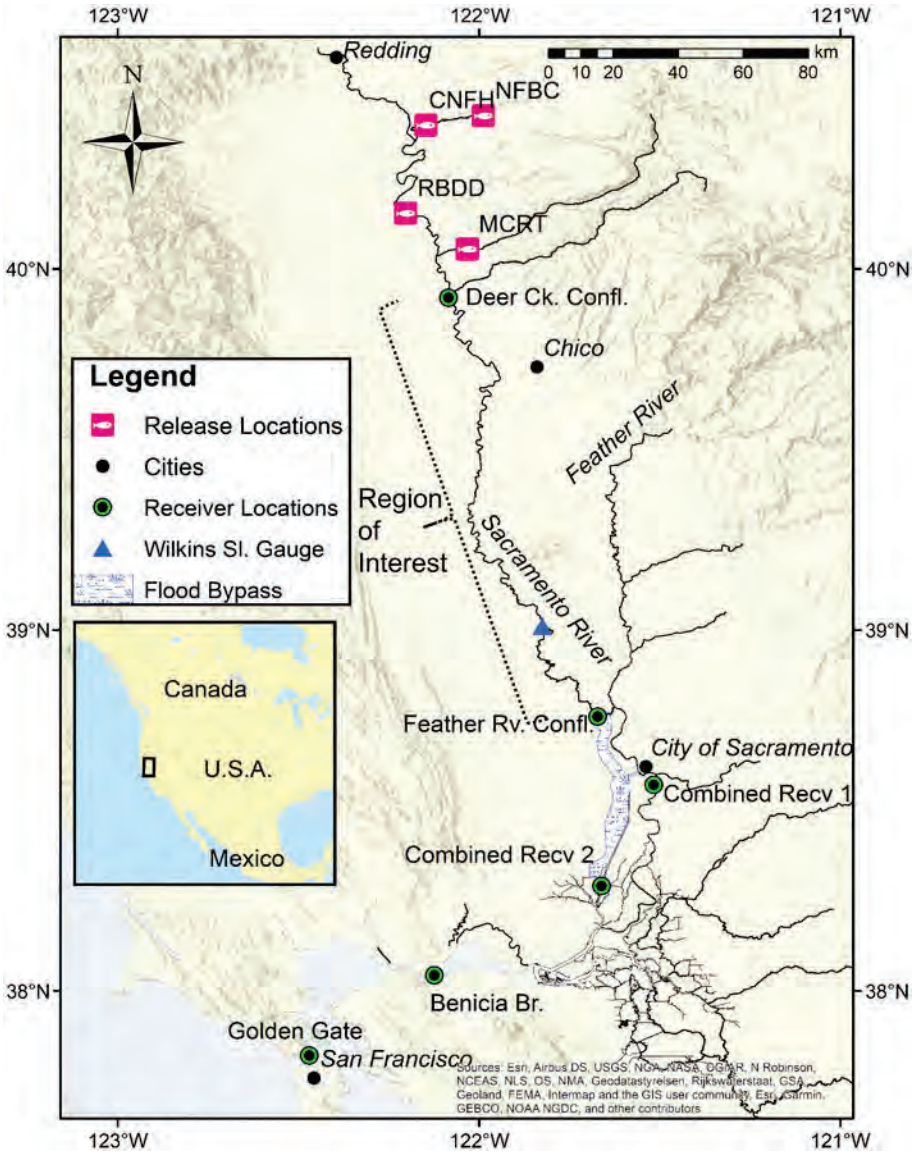

Fig. 2. Study area, release locations, and receiver locations. Region of interest spans from the confluence with Deer Creek to the confluence with Feather River. Release location abbreviations are CNFH, Coleman National Fish Hatchery; NFBC, North Fork Battle Creek; RBDD, Red Bluff Diversion Dam; and MCRT, Mill Creek rotary screw trap.

hatchery releases also peak in spring (Huber and Carlson 2015), during which their outmigration survival rates also appear to be sensitive to flow rates (Zeug et al. 2020).

Acoustic telemetry studies investigating the survival and movement of juvenile salmon in the Sacramento River have proliferated in recent years (Michel et al. 2015, Cordoleani et al. 2018, Notch et al. 2020). We compiled all the available spring period (15th March–15th June) acoustic tagging data for the Sacramento River and selected fish that were released upstream of the region of interest (above rkm 425): 3402 in total. Of those fish, only fish that were known to have entered the region of interest played a large role in parameterization

of the flow–survival relationship explored in this analysis. Fish that did not appear to survive to the region of interest may have simply not been detected entering the region and therefore play a small role in the parameterization of the flow–survival relationship. The number of fish that were known to enter the region of interest amounted to 2436 acoustic-tagged fish from six different years, including wild and hatchery fish, and fish from three of the four Sacramento River Chinook salmon populations (Table 1).

Acoustic telemetry

Wild fish were collected using rotary screw traps deployed in the Sacramento River and Mill Creek, while hatchery fish were collected from hatchery raceways. Fish were tagged using similar methods across years and populations as described by Deters et al. (2010). Acoustic tags were surgically implanted into the coelomic cavity of the anesthetized fish and closed using one or two interrupted sutures, depending on tag model. Wild fish were allowed to recover in a net pen for approximately 12 h post-surgery and released on-site after sunset. Hatchery fish were allowed to recover for up to 24 h post-surgery and released on-site, or trucked to a release location using an aerated hatchery transport tanker. All release sites were located at least 25 rkm upstream of the region of interest (Fig. 2), such that by the time fish arrived to the region of interest any potential influences of handling, trucking, or release site on survival should have largely been expressed and should have little to no effect on survival estimates in the region of interest.

All fish were tagged and tracked using the Juvenile Salmon Acoustic Telemetry System (McMichael et al. 2010). Tags were programmed to transmit at three-, five-, or ten-second intervals depending on tag type, enabling them to function for a minimum of 27, 32, and 52 d, respectively. Tag size depended on the study population and ranged in size from 10.5 mm long × 5.2 mm high × 3.0 mm wide to 10.7 mm long × 5.0 mm high × 2.8 mm wide. The transmissions from the tags were detected and the unique tag number recorded by autonomous receivers from different manufacturers (ATS [Isanti, Minnesota, USA], Teknologic [Edmonds, Washington, USA] or Lotek Wireless [Newmarket, Ontario, Canada]). All receiver locations had two or more receivers to maximize detection probability. In an effort to reduce the tag burden in study fish, a maximum 5% tag-to-fish weight ratio was observed. This allowed for fish as small as 75 mm to be tagged and released. Fish tagged ranged from 75 to 120 mm fork length (mean 86.8, standard deviation [SD] 5.8).

Table 1. Wild and hatchery tagged fish groups included in our analysis from 2013 to 2019.

Population	Origin	Year	Release dates	Release location	*N*	Genetic population origin
Mill Creek	Wild	2013	Mid-April to mid-May	MCRT	48	74% CCV fall-run 26% CCV spring-run
Coleman	Hatchery	2013	Mid-April	CNFH	285	100% CCV fall-run
Mill Creek	Wild	2015	Mid-April to mid-May	MCRT	110	44% CCV fall-run 56% CCV spring-run
Coleman	Hatchery	2016	Early-April to late-April	CNFH	540	100% CCV fall-run
Mill Creek	Wild	2017	Mid-April to late-April	MCRT	24	100% CCV fall-run
Coleman	Hatchery	2017	Early-April to late-April	CNFH	370	100% CCV fall-run
Sacramento River	Wild†	2017	June 6	RBDD	33	100% CCV fall-run
Sacramento River	Wild†	2018	Early-May to early-June	RBDD	207	100% CCV fall-run
Livingston Stone	Hatchery	2019	March 26	NFBC	199	100% Sacramento winter-run
Coleman	Hatchery	2019	April 11	CNFH	140	100% CCV fall-run
Coleman	Hatchery	2019	Late-May	RBDD	480	100% CCV fall-run
Total		2013–2019	Late-March to early-June		2436	

Notes: CCV, California's Central Valley. Release locations are further described in Fig. 2. Genetic population assignments made using protocols outlined in Clemento et al. (2011).

† Fish captured in rotary screw traps in the Sacramento River and tagged were assumed to be wild, although some hatchery fish may have been misidentified and incidentally tagged.

Cormack-Jolly-Seber model

We used the Cormack-Jolly-Seber (CJS) model for live recaptures within Program MARK (White and Burnham 1999) using the RMark package (Laake 2013) in R statistical software (vers. 3.6.1; R Core Team 2019) to estimate survival as well as to assess the fit of different flow relationships with survival. For species that express an obligate migratory behavior such as Chinook salmon, a spatial form of the CJS model can be used, in which recaptures (i.e., tagged fish detected downstream from release) occur along a migratory corridor. The model determines if a fish not detected at a given receiver location was ever detected at any receiver downstream of that specific receiver, thus enabling calculation of maximum-likelihood estimates for detection probability of all receiver locations (p), survival (Φ), and 95% confidence intervals for both (Lebreton et al. 1992).

If a predator consumes an acoustic-tagged salmon and swims downstream past the next receiver location, the CJS model would incorrectly assign that fish as having survived the reach in which it was consumed. In the river above tidal influence, Chinook salmon express obligate anadromy and do not typically travel upstream (i.e., against current) once migration has begun; any movements in the upstream direction are likely predator movements. We therefore used the entirety of detection data available in the Sacramento River for each year (>12 receiver locations per year) to truncate the detection history of each fish to only include detections leading up to the first upstream movement, if one occurred.

We then subset the remaining detection data to only include receiver locations that bookend the region of interest. After release, the first receiver location was at the Deer Creek confluence (rkm 425), at the upstream end of the region of interest. The second receiver location was located just below or above the Feather River confluence depending on the year (rkm 204 or 211, respectively), and therefore, the reach between these receiver locations encompassed the entire region of interest (Fig. 2). We also included additional receiver locations further downstream in the detection history to allow for an estimation of detection probability at the Feather River confluence location. However, during high flow events, such as in 2017 and 2019, a portion of the Sacramento River spilled into a flood bypass located just upstream of the Feather River confluence (Fig. 2). Since this introduced a secondary migration route, we used a combination of receivers at the end of the bypass (located at Liberty Island, Solano County) and receivers in the mainstem Sacramento River (located at City of Sacramento, Sacramento County) to create a synthetic recapture event in the detection history, ensuring both potential routes were covered. These data were only included in the analysis to better estimate detection probability at the end of the region of interest. Finally, we also used two downstream receiver locations to further improve detection probability estimation, one at Benicia Bridge (Contra Costa County, rkm 52) and at the Golden Gate, the entrance to the Pacific Ocean (rkm 1).

Flow–survival relationship

Each fish was assigned a value equal to the mean flow over the entire travel time from passing the Deer Creek confluence to first detection at the Feather River confluence. For fish not detected at the Feather River confluence (either due to mortality upstream, or imperfect detection probability; representing 75.3% of all fish), we imputed travel time by creating probability density functions (p.d.f.s) from all known travel times for each tagging group (i.e., rows in Table 1) using kernel density estimation ("density" function in R statistical software). We then imputed travel time by randomly selecting a point along the p.d.f. for that fish's tagging group. We used flow values from the United States Geological Survey's (USGS) Sacramento River at Wilkins Slough gauging station (USGS station number 11390500). This location was nearest to the downstream end of the region of interest and represented the minimum flows that fish would experience during the late spring period (15th April and later; Fig. 1).

We created an initial CJS model by grouping fish based on 5% quantile bins of the flows they experienced. These survival groups, parameterized in the model by dummy variables, were allowed to only impact survival estimates of the region of interest (i.e., reach 2: Deer Creek confluence to Feather River confluence, Φ_{reach2}).

To explore nonlinearity in the flow–survival relationship, we employed model selection using

the Bayesian Information Criterion (BIC) to assess the parsimony of different flow–survival modeling structures. We created multiple CJS models that allowed the relationship between flow and survival in the region of interest (reach 2: Deer Creek confluence to Feather River confluence) to take linear, log-linear, polynomial, cubic spline curve, and threshold (i.e., step function) forms. We used flow values for individual fish as individual covariates in the first four model types and as a grouping variable (dummy variable) for the threshold model. We also explored the potential for multiple thresholds in the flow–survival relationship. For all models, detection probability was allowed to vary by receiver location and tagging group. More details on the flow–survival modeling effort can be found in Appendix S1.

Spring pulse flow scenarios and theoretical survival improvements

Where we found strong evidence of a nonlinear flow–survival relationship, we assessed different management strategies that could use this information to improve cohort outmigration survival of salmon in the Sacramento River. We generated two hypothetical implementations of pulse flows during the spring period for the study years (2013–2019). The first implementation scenario allowed for sustained flows that would result in the highest survival rates based on the nonlinear flow–survival relationship. Sustained flows were centered around the average date of peak spring juvenile salmon outmigration (April 19th, based on 2005–2019 expanded juvenile salmon capture data from USFWS's Red Bluff rotary screw traps, https://www.fws.gov/redbluff/rbdd_biweekly_final.html) and scheduled to last as long as possible given the water budget. The second scenario represented an adaptive management implementation of spring pulse flows: Following a substantial increase in daily catch rates at the Red Bluff rotary screw traps, flows were temporarily increased (for four days) to the levels that would result in the highest survival rates based on the nonlinear flow–survival relationship. The maximum number of four-day pulse flow events was enacted given the available water budget. Days with substantial increases in catch rates at the rotary screw traps are proximate estimates of periods of peak outmigration of juvenile salmon, and we estimated these days to be when both (1) total expanded catch exceeded 10,000 juvenile salmon and (2) the increase was more than one standard deviation over the mean from the previous 10 d. Finally, we used two water budgets for these scenarios: a realized water budget (which consisted of the totality of water released from Keswick Dam during the spring of each year) and an ecosystem water budget, which added 150 thousand acre-feet (TAF) to the realized water budget each year.

We used the expanded combined daily catch of all runs of Chinook salmon for determining peak outmigration triggers. Expansion factors were based on capture efficiency trials operated by USFWS Red Bluff Office, and the resulting expanded total catch numbers represent the total number of fish passing the screw trap at Red Bluff. The rotary screw traps are 38 river kilometers upstream of the region of interest and therefore approximately represent the daily number of fish entering the region of interest during their outmigration. The screw traps are operated continuously, except during the passage of significant numbers of hatchery fish or during storm conditions (B. Poytress, *personal communication*). As a result, some spring sampling days are missing from our study period. Furthermore, some days of significant hatchery fish catches were also removed from the dataset; these days were identified as days when expanded daily catch total surpassed 80,000 fish.

To estimate the realized water budget, we multiplied the sum of the mean daily flow estimates (cfs) from 15th March to 15th June from the Keswick Dam gauge (USGS station number 11370500) by 1.983×10^{-3} to convert to volume (TAF). To benefit outmigrating salmon, the nonlinear flow–survival targets from the most parsimonious CJS model would need to be realized at the Wilkins Slough gauge, so we estimated a daily net change between Keswick Dam and Wilkins Slough. This approximates the net difference between water inputs (tributaries) and water exports (water diversions) between the Keswick Dam and Wilkins Slough at a daily time step. Finally, all alternative flow regimes had three important regulatory constraints: (1) minimum Keswick flows of 3250 cfs (National Marine Fisheries Service 2009 Biological Opinion and

Conference Opinion on the Long-Term Operations of the Central Valley Project and State Water Project: NMFS 2009 BiOp), (2) maximum Keswick flow reduction rate of 15% per day (U.S. Bureau of Reclamation 2008 Central Valley Project Biological Assessment), and (3) no alteration to any daily Keswick releases that were deemed to be for flood control (>20,000 cfs).

We then modeled the impact of the different flow implementation scenarios on cohort outmigration survival of spring-outmigrating juvenile Chinook salmon. We used parametric bootstrapping, where the pertinent logit-transformed survival distribution from the CJS model (given flow levels at Wilkins Slough for that day) was resampled corresponding to the expanded daily total catch at the Red Bluff screw traps. We estimated the mean logit-scale survival from the totality of samples across all days of the spring period, and then re-scaled (inverse-logit transform). For missing daily catch values, we imputed catch using a linear interpolation of the time series. Finally, to provide a baseline for assessing the potential survival gains of each scenario, we estimated the cohort outmigration survival for the status quo (using the observed spring hydrograph in the years 2013–2019).

Results

We found strong evidence of nonlinearity in the flow–survival relationship (CJS model with grouping based on 5% quantile flow bins, Fig. 3). Survival was positively related to flow for values up to 10,000 cfs, followed by a sharp increase in survival near 10,000 cfs, at which point survival asymptotes at approximately 50%.

Out of 724,567 models we tested, the triple threshold models were the most parsimonious, with 12 that were within two BIC points of the top model. We estimated survival parameters and threshold values (4259, 10,712, and 22,872 cfs) from these 12 models using model averaging. The threshold models were substantially better supported than any of the other model types tested (ΔBIC > 29). Furthermore, these threshold models, as well as all polynomial and spline models, were better supported than the linear, log-linear, and full models (ΔBIC > 146), indicating strong support of a nonlinear flow–survival relationship.

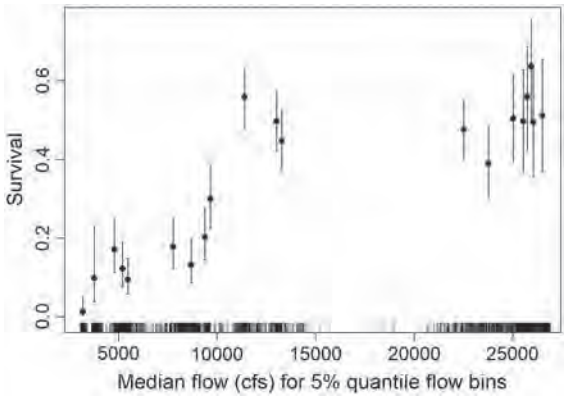

Fig. 3. Survival as a function of flow. Survival estimates (points) with 95% confidence intervals (bars) for groups at 5% quantile bins of experienced flow, plotted at the median value of bins (in cfs) on the *x*-axis. Flow experienced per fish is indicated by vertical tick marks along the *x*-axis.

In order to better understand model fit across the range of potential flow thresholds, for each flow value tested in the threshold models, we estimated the mean BIC of all models that included that flow value as one of its thresholds (Fig. 4). With similar results to the model selection exercise, models with flow thresholds around 4259, 10,712, and 22,872 cfs had strong support (i.e., lower mean BIC). We labeled these minimum (4259 cfs), historic mean (10,712 cfs), and high (22,872 cfs). The historic mean threshold had highest support of the three thresholds

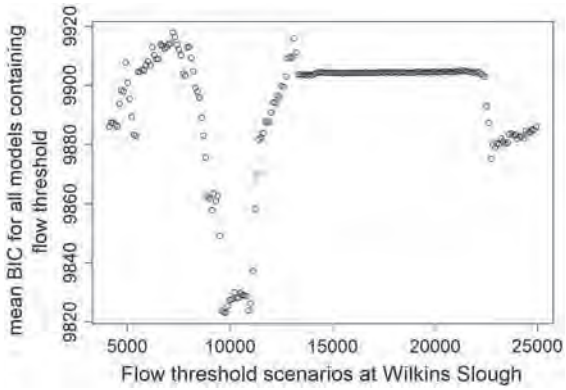

Fig. 4. Mean BIC scores per threshold value as a function of flow. A lower BIC value indicates a stronger supported model.

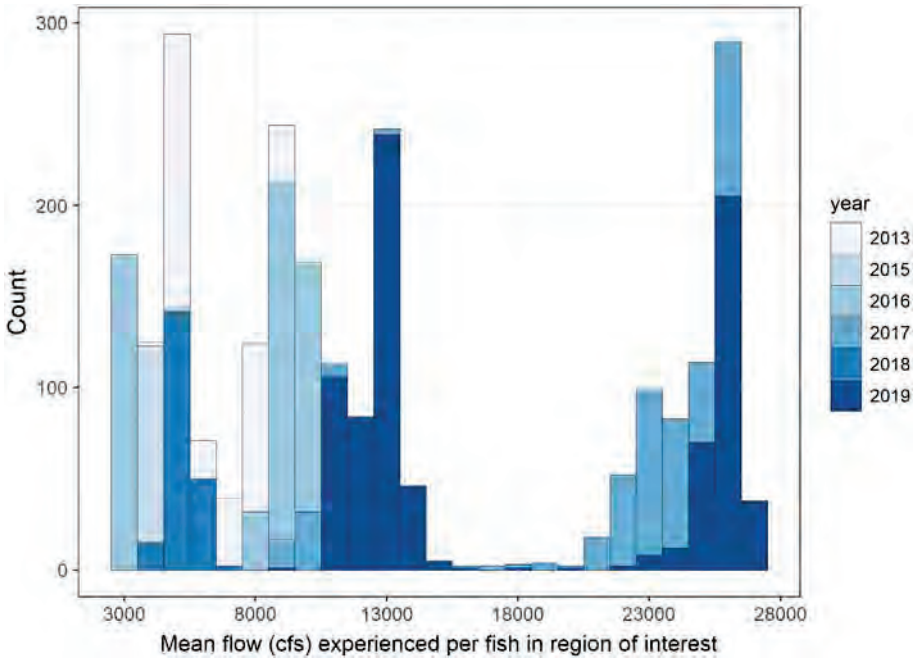

Fig. 5. Frequency of flow values used in analysis by year. Values are mean flow (cfs, as measured at Wilkins Slough gauge), both empirical and imputed, for all fish. Flow bin sizes are 1000 cfs, and bar colors indicate the relative number of fish by year for each flow bin.

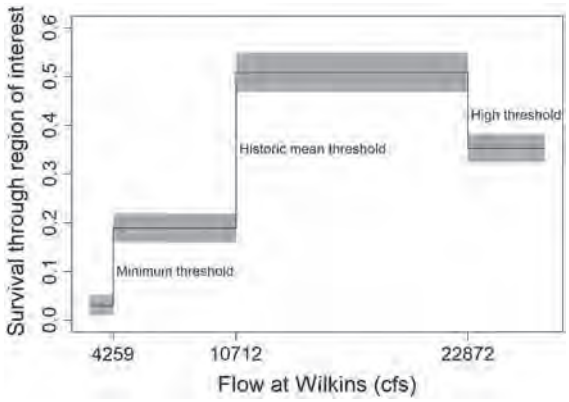

Fig. 6. Thresholds of predicted survival as a function of flow at Wilkins Slough. Predictions are based on the model averaged parameters from the most parsimonious triple threshold models, with mean thresholds at 4259, 10,712, and 22,872 cfs, with 95% confidence intervals (gray fill).

(Fig. 4). Few fish experienced flow values between approximately 14,000 and 21,000 cfs (Fig. 5), and therefore, model fit did not vary significantly with thresholds found in this range.

We used model averaged parameter estimates to predict survival for the range of flow values (Fig. 6). There was a 6.3-fold increase in survival from flows below 4259 cfs (0.03) to flows between 4259 and 10,712 cfs (0.189). There was a 2.7-fold increase in survival from flows between 4259 and 10,712 cfs to flows above 10,712 cfs (0.508). Overall, there was a 16.9-fold increase in survival from flow below 4259 to flows above 10,712 cfs. Finally, survival decreased above the 22,872 cfs threshold to 0.353. Survival was significantly different between groups, with non-overlapping 95% confidence intervals. The 22,872 cfs threshold may be an artifact of lower detection efficiencies associated with fish utilizing additional high flow migration routes with less receiver coverage.

We compared modeled cohort outmigration survival rates among five different water release scenarios for five water years with the modeled survival rates for actual flows (Fig. 7). Water years 2013 (dry), 2014 and 2015 (critical), and 2016 and 2018 (below normal) represent three classes of water supply scarcity in the Sacramento River Basin (http://cdec.water.ca.gov/re

portapp/javareports?name=WSIHIST). For dry year 2013 and below normal years 2016 and 2018, the three alternative scenarios using the available water budget resulted in survival rate increases ranging from 55% to 98%, while the scenarios with an additional 150 TAF resulted in survival rates increases ranging from 79% to 119%.

For critical years 2014 and 2015, the realized water budgets were not sufficient to allow for the alternative release scenarios, beyond just maintaining flows above the low flow threshold for as long as possible (resulting in survival rate increases of 83% and 132%, respectively). Scenarios using an additional 150 TAF resulted in survival rate increases ranging from 130% to 330%.

Discussion

Streamflow is a master variable in stream ecology, influencing biological and physical habitat characteristics, and if not managed properly, flow alteration can be a serious threat to freshwater ecosystems. Yet, water management decisions continue to be poorly informed by environmental research (Davies et al. 2013, Horne et al. 2016). In the Sacramento River Basin, surface water demands exceed supplies in all but the wettest years (Grantham and Viers 2014), and there is a pressing need to optimally allocate those limited resources to meet management objectives, including ecosystem benefits. We identified threshold responses in salmon outmigration survival across a range of observed instream flow rates. These relationships are valuable tools for updating water management practices aimed at balancing competing demands. Applying our minimum threshold (4259 cfs) as a lower critical flow boundary for spring flows could result in a 6.3-fold increase in outmigration survival. Flows above the historic mean threshold (10,712 cfs) could provide an additional 2.7-fold increase in survival. Flows above this threshold could be enacted when the resources are available, especially if coordinated with hatchery releases or peak wild salmon migration periods. All else being equal, these survival gains could result in concomitant increases in adult escapement. These modeled survival benefits justify the need to identify ways to exceed these flow thresholds more consistently and for longer periods during the spring months.

High flows promote favorable outmigration conditions for Chinook salmon juveniles, resulting in increased survival to the ocean (Connor et al. 2003, Smith et al. 2003). We identified an optimal threshold of 10,712 cfs, which we labeled historic mean, as it is similar to the long-term average of natural spring flow conditions under which Chinook salmon have evolved in this system (Fig. 1). One potential mechanism for this threshold is high flows typically increase water turbidity, which may aid juveniles in evading predators (Gregory and Levings 1998). Alternatively, it is known that outmigrating juveniles move at higher speeds with higher flow (Berggren and Filardo 1993), limiting their exposure time to predators and other hazards. Movement speeds and survival rates of wild Chinook salmon juveniles in this section of the river are strongly correlated (Notch et al. 2020). Therefore, to determine whether movement speeds may be one of the mechanisms driving the 10,712 cfs threshold, we conducted a post hoc analysis of fish travel times through the region of interest as grouped by the flow threshold boundaries. A Kruskal–Wallis test indicated significant differences in travel time distributions between the groups ($P < 0.001$), and a Dunn's multiple comparison test indicated that travel times for fish experiencing flows between 10,712 and 22,872 cfs were significantly shorter than for fish experiencing all other flow levels (Fig. 8).

Flow levels above the historic mean threshold represent normal spring time flows under natural runoff and streamflow conditions up until approximately 15th May (Fig. 1). Yet, from 1993 to 2019 such flows were only achieved in 37% of days during the 15 April–15 May peak outmigration period, and only 10% of days in below average water years (Fig. 9), and were even less likely to occur later in the spring (Fig. 10). In late spring (after approximately 15 April), tributary flows subside and demand for agricultural water deliveries increase dramatically, a combination that creates progressively diminished instream flow in downstream reaches (Fig. 1). Sturrock et al. (2020) found that under current water management regimes, the low flows and high water temperatures that occur in the late spring are selective forces against the later-migrating smolt

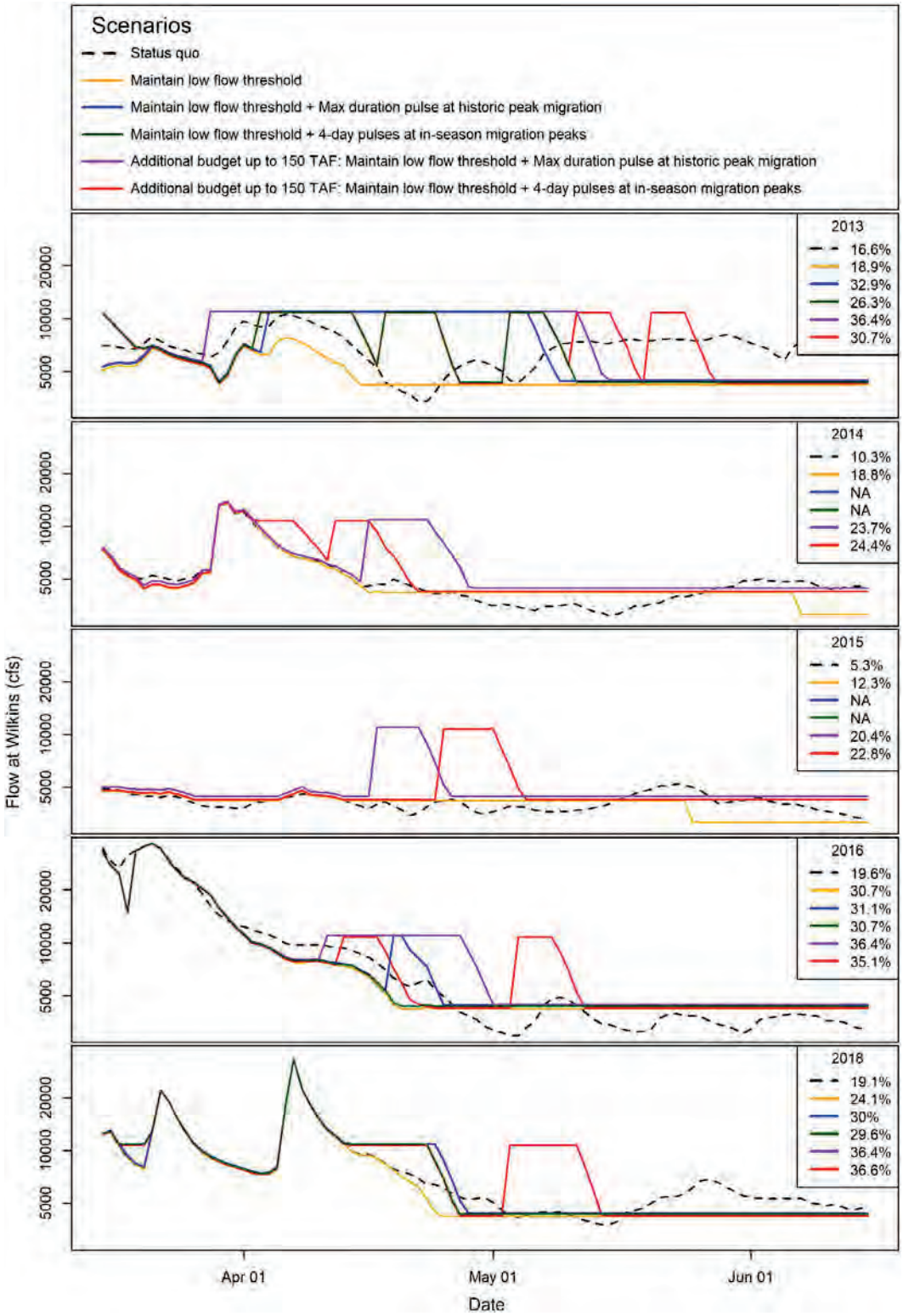

Fig. 7. Alternative flow scenario hydrographs using the flow–survival nonlinearities found in this study. Predicted cohort spring outmigration survival based on flow scenarios and daily fish passage at Red Bluff rotary

Fig. 7. Continued
screw traps are depicted in figure legends. Scenarios for 2017 and 2019 water years are not depicted, as wet conditions in those years precluded the need for pulse flows. In the historic drought years of 2014 and 2015, pulse flows were not possible based on realized water budget (NA for respective survival estimates in legend).

juvenile life-history type (>75 mm fork length [FL]). The implementation of spring pulse flows above the 10,712 cfs threshold could be a powerful tool to restore functional parts of the natural flow regime during critical periods of the salmon life history, and ultimately, the increased heterogeneity of flows may promote increased population diversity.

The mechanism driving the lower flow threshold (4259 cfs) is unclear. Anecdotal observations indicate that under certain low flow conditions, sections of the Sacramento River may have increased habitat heterogeneity, in particular with regard to pools and riffles where predator ambush habitat is likely created (C. J. Michel, *personal observation*). Flow influences other important environmental variables, such as water temperature, that might also have nonlinear relationships with survival. Because temperature and flow are highly correlated (flow and temperature experienced for these fish as measured at Wilkins Slough had a Pearson's correlation coefficient of 0.93) and flow is the most persistent driver of survival in the CCV (Henderson et al. 2019, Notch et al. 2020), we did not include temperature in this analysis. At very low flows during the latter end of the spring period, water temperature in the lower Sacramento River can approach the thermal tolerance of juvenile Chinook salmon. For fish outmigrating during flows lower than the low flow threshold, mean water temperature experienced was 19.9°C (0.5 SD) as measured at the Wilkins Slough gauge. At this temperature, salmon health and vulnerability to predation can be affected and ultimately lead to lowered survival (Marine and Cech 2004, Miller et al. 2014, Lehman et al. 2017, Michel et al. 2020). During most years, spring outmigration flows are above the lower threshold, and these unfavorable conditions are usually only observed during years of drought (e.g., 1994, 2013–2015; Fig. 10). However, in recent years, spring flows below this lower threshold have occurred in years of near average precipitation (i.e., 2016, 2018; Fig. 10), likely resulting from a complex suite of factors, including reservoir management strategies for conserving cold water for endangered winter-run Chinook salmon, and increasing water deliveries for out-of-stream uses during the summer months.

Fig. 8. Distribution of fish travel times (log-scale) through the area of interest as a function of flows experienced with respects to the flow thresholds. Travel time is calculated for fish detected both at Deer Creek confluence and at Tisdale (rkm 269), representing the upper 74% of the region of interest. Travel times to the end of the region of interest (Feather River confluence) were not used as too few fish remained in the <4259 cfs group to accurately represent travel times for that group. Letters within the plot frame indicate significant differences between travel time distributions from a Dunn's multiple comparison test, at the 0.05 level.

Of the models we tested, the threshold models had strongest support, possibly because they allow for a sharp transition between survival levels as a result of small changes in flow across some ecologically important value. For example, exceeding a given threshold can lead to river bank overflow, which activates seasonal floodplains, providing juvenile salmon an alternative downstream migration route. This is the hypothesized mechanism for the high threshold (22,872 cfs): Tisdale Weir, within the region of interest, overtops at approximately this flow value, allowing fish to enter the Sutter Bypass. Survival decreased at flows above this

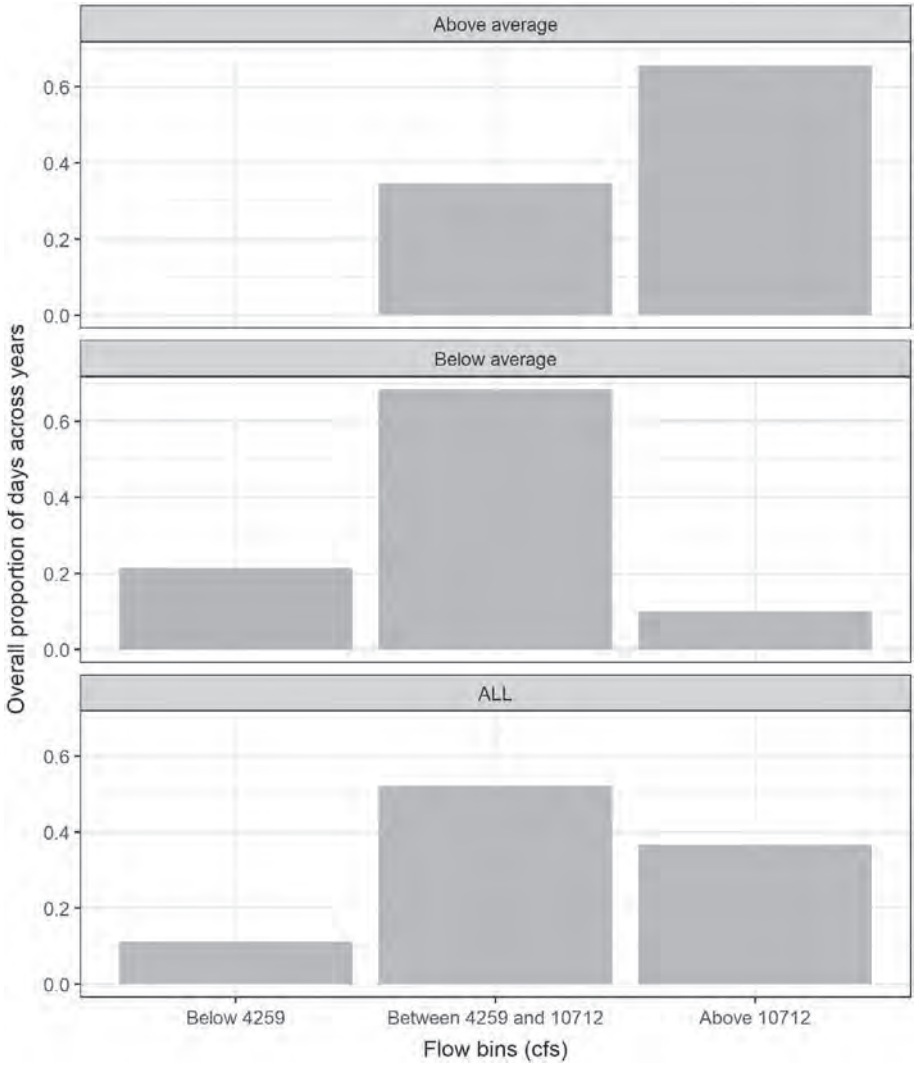

Fig. 9. Proportion of daily flows at Wilkins Slough that fall below, between, or above the two lower flow thresholds from 15th April to 15th May period from 1993 to 2019, split out by above average (i.e., wet and above normal) and below average (i.e., below normal, dry, and critically dry) water years, according to the Water Year Hydrologic Classification Index for the Sacramento Valley (http://cdec.water.ca.gov/reportapp/javareports?name=WSIHIST).

threshold, which could be evidence that fish utilizing this alternate route experienced decreased survival compared to fish remaining in the Sacramento River. While flood bypasses are generally considered to be high-quality rearing habitat for juvenile salmon (Sommer et al. 2001), there is little known about the relative survival of fish utilizing these habitats. Travel times for fish above the high threshold were significantly higher and are more widely distributed than for fish just below this threshold (Fig. 8), with fish taking up to 27 d to transit the region of interest. These slower moving fish may have been delayed as a result of spending time on floodplains, and their increased exposure time to potential stressors may explain their decreased survival in comparison to fish just below the high threshold that could not access the floodplains. This is consistent with the results of a similar study

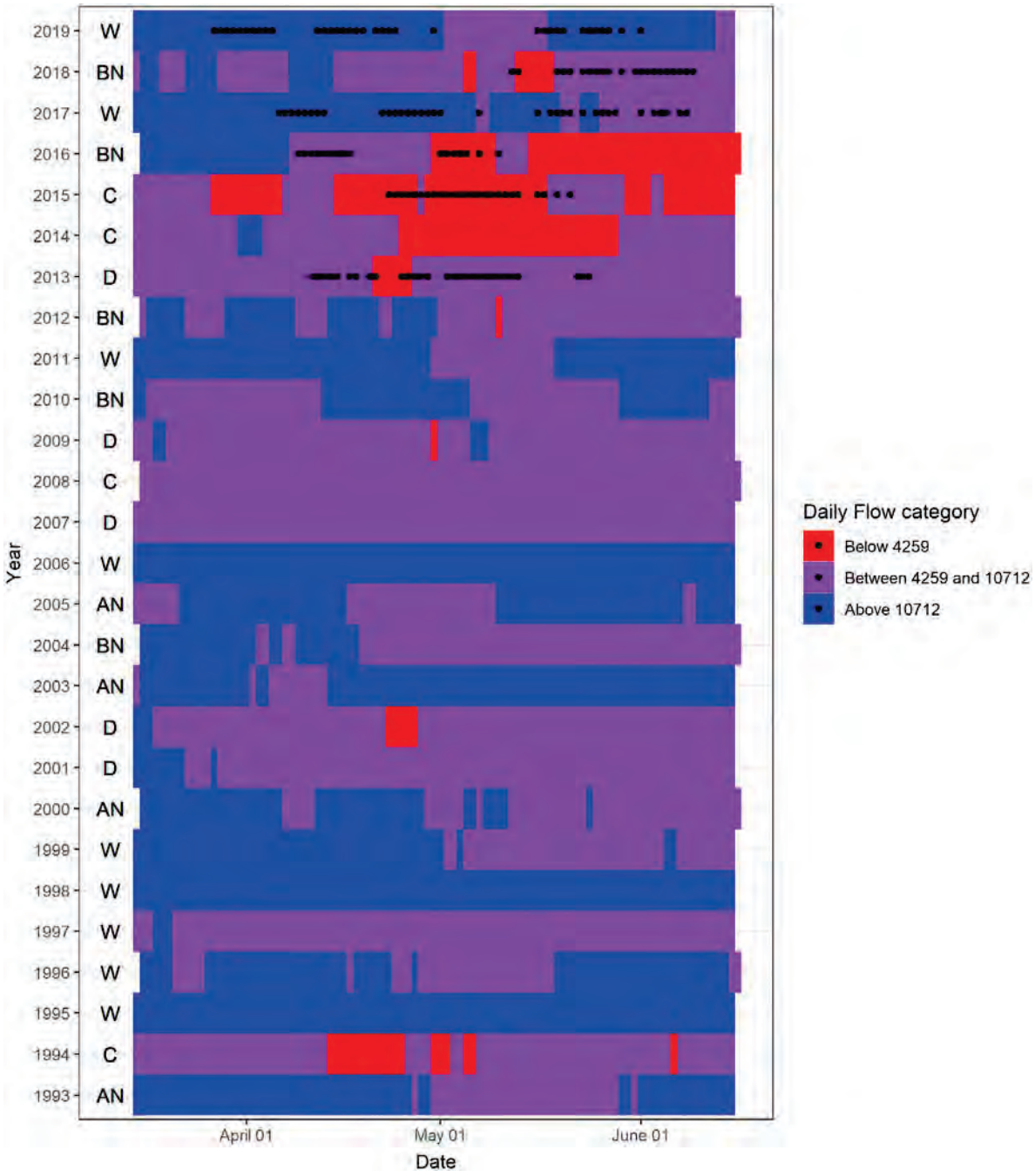

Fig. 10. Classification of flow values into the below 4259 cfs, between 4259 and 10,712 cfs, and above 10,712 cfs categories for each day of the spring outmigration period (15th March–15th June) for the years 1993–2019. Flow values are as measured at USGS Wilkins Slough gauging station on the Sacramento River. Black points represent days when acoustic-tagged fish were entering the region of interest. Text within box indicates the Water Year Hydrologic Classification Index for the Sacramento Valley (http://cdec.water.ca.gov/reportapp/javareports?name=WSIHIST); year type codes are W, wet; AN, above normal; BN, below normal; D, dry; and C, critically dry.

where survival per day was similar between release groups that traveled through a floodplain compared to those that traveled through the mainstem river, and yet due to longer travel times through the floodplain, the floodplain groups experienced overall lower survival rates (Pope et al. 2018). It should again be noted that the detection probability of fish utilizing the bypass route is likely lower, which could be a confounding driver of the high threshold.

The alternative flow regimes indicated that substantial survival gains over the status quo were possible by leveraging the thresholds we identified. These flow scenarios lead to increases in annual outmigration survival ranging between 57% and 130% without additions to the water budget and increases ranging from 79% to 330% with a modest 150 TAF addition to the water budget (Fig. 7). There were no clear and consistent differences in survival between the historic peak migration pulse flow scenario and the four-day adaptive pulse flow scenario, whether with the realized water budget or with the additional environmental water budget. We included an additional scenario where flows mimicked the status quo hydrograph, but flows were not allowed to dip below the minimum threshold, which alone led to substantial gains in survival in the Critical Dry water years 2014 and 2015 (Fig. 7). Adaptive pulse flow scenarios may be preferable to a single-pulse, fixed calendar date scenario in ways not measured in this study. For example, the adaptive implementation will be more responsive to hydrologic or biotic nuances of a given year and promote more diversity in outmigration timing.

Our analysis is consistent with many studies concluding that flow is a strong driver for Chinook salmon smolt spring outmigration survival. This period of time coincides with peak hatchery releases and peak natural-origin outmigration of fall-run Chinook salmon, the stock that supports an important commercial and recreational fishery, as well as peak outmigration of ESA threatened wild spring-run Chinook salmon smolts from Sacramento River tributaries. Spring-run Chinook salmon populations historically spawn at high elevations and therefore experience slower growth rates and delayed outmigration timing compared to other Chinook salmon populations (Yoshiyama et al. 1998). This delayed outmigration timing makes them particularly vulnerable to low flows in the late spring. Further, these late outmigrants are subject to asynchronous flow conditions between natal streams (when their initial downstream migration is triggered by snow melt or spring freshets in the tributary) and the mainstem Sacramento River, where they experience periods of low managed flows. Restoring the functionality of the spring flow regime during wild smolt outmigration is a critical step toward promoting sustainable fisheries (Jager and Rose 2003), as well as restoring a threatened population of salmon.

Other CCV native fish species may require different flow conditions during the spring, potentially creating water management conflicts. For example, high flows and cold water from dam releases may have detrimental impacts on threatened green sturgeon (*Acipenser medirostris*) in the Sacramento River (Zarri et al. 2019). Similarly, endangered winter-run Chinook salmon rely on cold water released from Shasta Reservoir during egg development in the summer, which is contingent on water operations that allow sufficient cold water availability in Shasta Reservoir for the summer months (Martin et al. 2017). Increasing spring flows for the benefit of fall-run and threatened spring-run Chinook salmon requires carefully balancing the needs of other protected species in the Sacramento River.

Our study focused on the flow–survival relationship for the smolt outmigration life history, as it was based on acoustically tagged fish, and tag size constraints precluding the tagging of smaller juveniles. However, other juvenile life-history types, namely fry and parr (approximately <55 mm and 55–75 mm FL, respectively), are important contributors to CCV Chinook salmon populations (Sturrock et al. 2020). While higher winter and spring flows also benefit fry and parr life histories (Sturrock et al. 2015, 2020), the flow thresholds defined in this study are for smolt outmigration and are likely not directly compatible with fry and parr life histories, which need flows appropriate for rearing. In addition, wild smolts were underrepresented in this analysis due to the difficultly in capturing adequately sized individuals for tagging, and the results we present are likely driven largely by survival dynamics of hatchery fish. Nonetheless, targeting ecologically functional flows that mimic the

shape of the historic flow regime under which these fish evolved should also benefit these other populations and promote life-history diversity.

Our study identifies key thresholds in the flow–survival relationships that can help water and fisheries managers evaluate trade-offs associated with different water management options that are, by law, supposed to balance instream and out-of-stream management objectives. We recommend that future studies attempt flow experiments to verify that migrating salmon would benefit as predicted from managed flow augmentation (such as pulse flows). It is likely that such pulse flows will engendered larger cohort-wide survival gains than predicted here: Flow pulses are known to promote juvenile Chinook salmon to initiate their downstream migration (Sykes et al. 2009), allowing a larger portion of the population to take advantage of the associated improvements in survival. Courter et al. (2016) used managed flow releases in the Yakima River, Washington, to show the positive impact of increased flow on Chinook salmon smolt survival, which was then used to implement a minimum flow target. Experimental pulse flows may also help decouple the mechanisms driving increased survival, because increased flows through reservoir releases may not affect temperature and turbidity the same as storm-related flow increases. Ultimately, functional flows in CCV should include a spring pulse flow component that mimics the characteristics of spring freshets and snowmelt events of a natural flow regime. These will benefit outmigrating smolts and also engender many other benefits to the ecosystem (Poff et al. 1997, Kiernan et al. 2012).

This is timely research as the frequency of drought events is predicted to increase in the CCV, creating additional stress to already vulnerable salmon populations (Yates et al. 2008). Munsch et al. (2019) showed a truncation of fish size and outmigration timing of juvenile Chinook salmon from the Sacramento River during warmer springs, which could lead to lower ocean survival. This highlights the influence of climate change on salmon species phenology and dynamics and the need for new flow management policies that include the potential impacts of future climate warming. In the Sacramento River, finding functional flows that could simulate ecologically critical aspects of the natural spring flow regime, especially in increasingly common dry water years, is a critical step in ensuring the resiliency of juvenile Chinook salmon and other native fish species into the 21st century.

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Data Availability

The data that support the findings of this study are openly available from the National Oceanic and Atmospheric Administration's ERDDAP data server at: https://oceanview.pfeg.noaa.gov/erddap/tabledap/FED_JSATS_detects.html. The authors report no conflict of interest.

Supporting Information

Additional Supporting Information may be found online at: http://onlinelibrary.wiley.com/doi/10.1002/ecs2.3498/full

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Ecological Values of Shallow-Water Habitats: Implications for the Restoration of Disturbed Ecosystems

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Abstract

A presumed value of shallow-habitat enhanced pelagic productivity derives from the principle that in nutrient-rich aquatic systems phytoplankton growth rate is controlled by light availability, which varies inversely with habitat depth. We measured a set of biological indicators across the gradient of habitat depth within the Sacramento–San Joaquin River Delta (California) to test the hypothesis that plankton biomass, production, and pelagic energy flow also vary systematically with habitat depth. Results showed that phytoplankton biomass and production were only weakly related to phytoplankton growth rates whereas other processes (transport, consumption) were important controls. Distribution of the invasive clam *Corbicula fluminea* was patchy, and heavily colonized habitats all supported low phytoplankton biomass and production and functioned as food sinks. Surplus primary production in shallow, uncolonized habitats provided potential subsidies to neighboring recipient habitats. Zooplankton in deeper habitats, where grazing exceeded phytoplankton production, were likely supported by significant fluxes of phytoplankton biomass from connected donor habitats. Our results provide three important lessons for ecosystem science: (a) in the absence of process measurements, derived indices provide valuable information to improve our mechanistic understanding of ecosystem function and to benefit adaptive management strategies; (b) the benefits of some ecosystem functions are displaced by water movements, so the value of individual habitat types can only be revealed through a regional perspective that includes connectedness among habitats; and (c) invasive species can act as overriding controls of habitat function, adding to the uncertainty of management outcomes.

Key words: restoration; shallow-water habitat; pelagic production; food web; freshwater ecosystems.

Introduction

Motivated by the recognition that human activities operate across landscapes to disrupt biological communities and their supporting functions, we have begun a new era of environmental management at the scale of large ecosystems (Vitousek and others 1997). Symptoms of ecosystem disturbance include the loss of biodiversity and the displacement of indigenous species by aliens. Because these symptoms are often responses to multiple stressors, strategies for ecosystem rehabilitation require multiple actions. One approach is based on the premise that habitat diversity is essential for biological diversity because a mosaic of connected habitats provides the full set of ecological and bio-

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geochemical functions required to sustain complex biological communities (Noss 1983). The costs of rebuilding lost habitat in disturbed ecosystems can be large, and the benefits are highly uncertain because our experience in the practice of ecosystem management through habitat restoration is still limited (Roe and Eeten 2002; Holl and others 2003). Performing studies prior to habitat restoration can reduce this uncertainty by identifying and measuring the ecological functions provided by specific habitat types (Engelhardt and Ritchie 2001; Lucas and others 2002). Here we present the results of such a study, which was designed to measure pelagic functions and assess their ecological value across a range of aquatic habitats in the highly disturbed Sacramento–San Joaquin River Delta.

California's Delta, which is situated at the confluence of two large rivers (Figure 1a) and was once a 1,400-km^2 wetland (Atwater and others 1979), receives about 30-km^3 of annual runoff from a 140,000-km^2 watershed (Knowles 2002). Between 1860 and 1940, most of the tidal wetlands were drained and transformed into a landscape of diked farm tracts within a network of channels that is now the hub of California's highly managed water supply. This transformation was followed by changes in biological communities at multiple trophic levels, some of which have been documented through monitoring programs sustained over the past four decades (Jassby and others 2002; Kimmerer 2002).

In this study, we measured biomass and calculated productivity of phytoplankton and mesozooplankton across a range of Delta habitats. We were motivated by multiple lines of evidence suggesting that primary and secondary production are low and limit production by native species of fish, including permanent residents (Delta smelt *Hypomesus transpacificus*, splittail *Pogonichthys macrolepidotus*) and migratory species (Chinook salmon *Oncorhynchus tshawytscha*) listed as threatened or endangered (Brown 2003). Previous studies have established that (a) phytoplankton primary production is the most important source of energy fueling production within metazoan food webs, even though the Delta receives large inputs of detritus from river inflow (Sobczak and others 2002); (b) primary production within the Delta is inherently low because of high turbidity and has declined more than 40% since 1975 (Jassby and others 2002); (c) the growth and reproduction of crustacean zooplankton are limited by low phytoplankton biomass (Müller-Solger and others 2002); and (d) stocks of zooplankton, including copepods, cladocerans, and rotifers, have declined significantly since the 1970s (Orsi and Mecum 1996). The declining productivity of pelagic food webs has been hypothesized to be a contributing factor to population declines of native fishes (Bennett and Moyle 1996), including species that are the target of a large-scale restoration program (Jacobs and others 2003).

A strategic goal of the CALFED Bay-Delta Ecosystem Restoration Program is to restore natural processes, and one of its objectives to increase productivity to support the recovery of native species (California Bay-Delta Authority 2004). It is presumed that the historic loss of shallow habitat has contributed to the decline in Delta pelagic primary and secondary productivity (CALFED 2000) and that the restoration of shallow habitat may reverse that trend by increasing productivity and rehabilitating food web processes that support higher trophic levels (CALFED 2001). The presumed link between production at the food web base and higher trophic levels is consistent with a cascading set of responses that followed the 1986 introduction of the alien clam *Potamocorbula amurensis* into the downstream estuary of San Francisco Bay (Nichols and others 1990). Within a year of its introduction, *P. amurensis* dominated macrobenthos biomass in the upper estuary, reaching densities sufficient to remove phytoplankton by filter-feeding faster than the phytoplankton growth rate. Primary production declined fivefold (Alpine and Cloern 1992), and over the following decades, populations of the copepod *Eurytemora affinis* and mysid shrimp *Neomysis mercedis* collapsed (Kimmerer and Orsi 1996) and abundances of native fishes declined significantly (Feyrer and others 2003). This carefully documented suite of responses is strong evidence that the disruption of forage production within pelagic/epibenthic food webs can contribute to stock declines of native fishes through forced diet shifts and food limitation. Independent evidence comes from observations that phytoplankton biomass (Schemel and others 2003) and juvenile Chinook salmon growth rates and survival (Sommer and others 2001) are significantly higher in shallow inundated floodplains than in the adjacent deep channel of the Sacramento River.

The presumption that shallow habitats support high pelagic productivity derives from the principle that phytoplankton growth rate varies inversely with habitat depth in nutrient-rich aquatic systems (Petersen and others 2003) and assumes that bottom–up control regulates productivity. High nutrient concentrations are characteristic of the Delta (Jassby and others 2002) and San Francisco Bay, where the phytoplankton growth rate ($P\mu$) fits an empirically derived function of irradiance (Cloern

and others 1985): $P\mu = -0.09 + 0.096E/(kH)$, where E is surface irradiance, k is the light attenuation coefficient, and H is water column depth. For the characteristic summer values of E (approximately 40 Einsteins m^{-2} d^{-1}) and k (2.0 m^{-1}) measured in our study, we can apply this function to specify a depth-scaling hypothesis for the Delta as $P\mu = -0.09 + 1.91/H$, implying that the water-column phytoplankton growth rate decreases as habitat depth increases and becomes zero at the critical depth of approximately 21.2 m.

Our study was designed around the hypothesis that plankton biomass and production also vary inversely with habitat depth, assuming that bottom–up processes regulate biomass and production at the food web base in this food-limited system. To test this hypothesis, we measured plankton biomass and computed a set of productivity indices across a range of habitat depths within the Delta ecosystem. Observations supporting this hypothesis would provide an objective empirical basis for the expectation that the creation of new shallow habitats will amplify food supply functions in pelagic food webs and promote the recovery of target species. Contradictory observations would demand an understanding of other controlling processes and a reconsideration of the ecosystem benefits to be derived from this restoration strategy.

Site Description and Methods

Study Site

The Delta is a complex physical system that transitions from a strictly riverine regime at its landward margin to a tidally oscillating interconnected network of channels and open-water areas at its seaward boundary. Situated at the head of San Francisco Bay, this freshwater ecosystem is subject to numerous physical influences, including primarily semidiurnal tides, river and stream inflow, wind stress, solar radiation, and anthropogenic manipulation of pumps, gates, and barriers. All of these factors influence the physical transport of water, solutes, particles, and suspended biota such as plankton.

Study Design

We focused our study in and around Franks Tract (FT) and Mildred Island (MI), subsided farm tracts that flooded when their bounding levees were destroyed by large floods in 1938 and 1983, respectively. We sampled 2 sites in FT (surface area, 12.9 km^2; mean depth, approximately 2.5 m), 2 sites in MI (surface area, 4.1 km^2; mean depth, approximately 5 m), and 12 sites in peripheral channels (Figure 1b). The distribution of sampled habitat depths follows the systemwide hypsograph (Figure 1a inset), spanning the range of depths in the central Delta. Our study focused on shallow aquatic habitats and their adjacent deep channels because CALFED strategic plans emphasize ecosystem restoration through the rehabilitation and creation of a broad range of interconnected habitats (CALFED 2000, Jacobs and others 2003; California Bay-Delta Authority 2004). This study was designed to contrast pelagic functions across a range of habitat depths and provide an empirical basis for anticipating the outcomes of habitat creation through planned restoration actions or the unintended flooding of farm tracts after levee failures caused by future seismic or hydrologic events.

The study was designed to capture diel/tidal variability (sampling in/around MI every 6 h over a 30 h period on 5–6 September 2001); weekly variability (in/around MI from 23 August to 13 September 2001); and the spring–summer transition (sampling in/around FT every 3 weeks from 10 April to 9 July 2002). Sampling was intensive in spring and summer because these are the seasons when zooplankton are most food limited (Müller-Navarra and others 2004) and the larval stages of fishes are most dependent upon zooplankton forage (Grimaldo and others 2004). Our study assessed plankton production and trophic transfers. Other functions associated with shallow-water habitat, such as the structural functions provided by submerged and emergent vascular plants, have been assessed by other researchers (for example, Grimaldo and others 2004). We sampled only the mesozooplankton because energy supplies from the microbial loop to metazoan food webs are small relative to phytoplankton primary production (Sobczak and others 2002).

Sample Collection and Analyses

Water samples were collected from 1–1.5 m below the surface using a Van Dorn sampler or peristaltic pump and stored on ice in the dark until processing. Duplicate aliquots were filtered onto GF/F filters, placed on dry ice, and stored at −80°C until analyzed for chlorophyll *a* concentration (Chl *a*) using a Turner TD700 fluorometer (Parsons and others 1984). Separate aliquots were filtered onto 0.4-μm polycarbonate filters and dried for gravimetric determination of suspended particulate matter (SPM) concentration (Hager 1994). We pooled our results with Chl *a* and SPM measure-

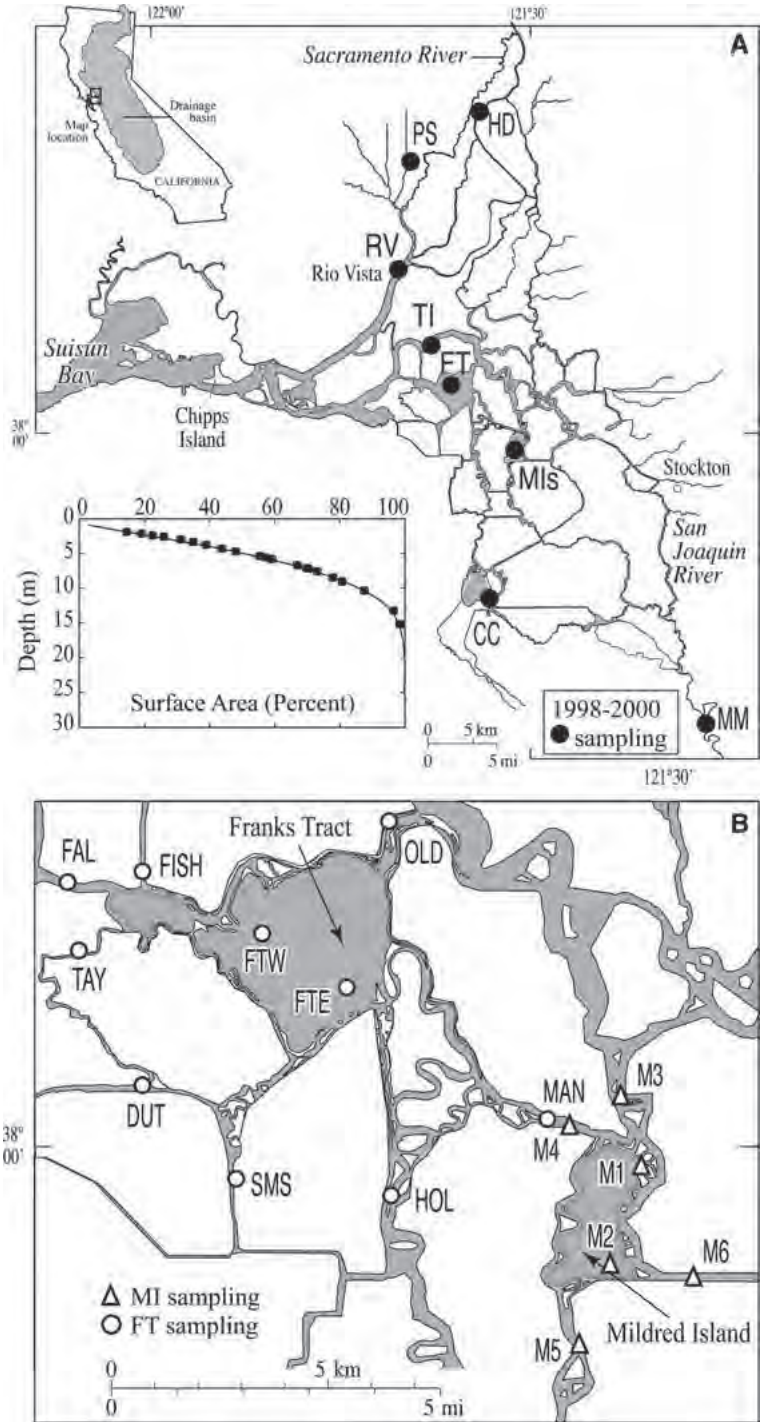

Figure 1. **A** The Sacramento–San Joaquin Delta, California, showing sites sampled by Sobczak and others (2002) during 1998–2000. (Inset): Central Delta tidally averaged habitat depth distribution by surface area. The *hypsograph line* shows cumulative percent surface area of the central Delta that is shallower than a given depth; *filled circles* represent depths of sampling sites in this study. **B** Enlarged view of the study area showing sites sampled in/around Mildred Island (MI) during 2001 (*open triangles*) and Franks Tract (FT) during 2002 (*open circles*).

ments made by Sobczak and others (2002) at eight locations (Figure 1a) during autumn 1998; spring, summer, and autumn 1999; and spring and summer 2000. Phytoplankton samples were collected in/around FT and during the 30-h MI sampling. These samples were preserved in acid-Lugol's solution and examined with a phase-contrast inverted microscope to identify the most common taxa and estimate their biomass (biovolume) from measured cell dimensions (see Cloern and Dufford 2005).

Nutrient samples, collected in/around MI during 2001, were filtered through 0.4-μm polycarbonate filters and analyzed for dissolved reactive phosphorus (DRP), dissolved silicate (DSi), nitrate, and nitrite using colorimetric techniques (Parsons and others 1984) with modifications for an Alpkem autoanalyzer. We report these results pooled with

the results from our previous studies in the central Delta during 1997 (May–November) and 1998–1999 (seasonally, sites in Figure 1b), when samples were analyzed for dissolved inorganic nitrogen (DIN = ammonium + nitrate + nitrite), DRP, and DSi using a Technicon AutoAnalyzer II and methods described by Hager (1994).

Zooplankton samples were collected with a 50-μm mesh, 0.5-m diameter net towed vertically or obliquely from the bottom to the surface. Within MI, tows were taken at two or three locations adjacent to the Chl *a* sampling sites and combined for a composite sample. Zooplankton were preserved in 5% buffered formalin with Rose Bengal dye. Subsamples were examined in a Sedgewick-Rafter cell, and all rotifers, copepods, and cladocerans were counted and identified to species or genus; lengths of 20 individuals in each category were measured. Copepod nauplii less than 0.20 mm were considered nonfeeding (N1-2) and not included in grazing-rate computations.

The nonindigenous freshwater clam *Corbicula fluminea* is a major consumer of phytoplankton biomass in the Delta (Lucas and others 2002), and we collected benthic samples to estimate *C. fluminea* biomass (CB, g ash-free dry weight m^{-2}) using a 0.05-m^2 van Veen grab. Clams retained on a 0.5-mm sieve were preserved in 10% formalin, followed by 70% ethyl alcohol. Dry weight of each individual was either measured directly (Crisp 1971) or estimated using length:weight relationships developed for each location and sampling period.

Water temperature was measured with a Sea-Bird CTD or Hydrolab DS4. The light attenuation coefficient (k) was either measured directly (using a LI-COR LI-192S quantum sensor) or estimated from Chl *a* and SPM with the following regression model: k = 0.76 + 0.076 SPM + 0.016 Chl *a* (R^2 = 0.81, n = 45). Daily surface irradiance (E) was measured by the California Irrigation Management Information System (http://www.cimis.water.ca.gov/cimis/data.jsp). The mean tidal amplitude across the Delta is approximately 1 m, and we assigned tidally averaged depths H to each sampling site from a 50-m bathymetric grid constructed for a hydrodynamic model and based on the California Department of Water Resources–compiled database of bathymetric surveys by various agencies (Monsen 2001).

Indices of Biomass, Production, and Ecological Efficiency

We used the results from this sampling program to compute indices of pelagic function as plankton biomass, productivity/trophic transfer, and ecological efficiencies (Table 1). To enable intercomparisons, all indices were based on carbon (C) as the currency of biomass and energy flow. Phytoplankton biomass, PB (mg C m^{-3}), was computed as Chl *a* multiplied by the mean C:Chl *a* ratio (32 mg C mg^{-1} Chl *a*), as determined from an empirical model (Cloern and others 1995) using 220 measurements of water temperature and irradiance across a gradient of Delta habitats from 1998 to 2000 (Sobczak and others 2002). Nutrient regulation of C:Chl *a* was not considered because dissolved inorganic nitrogen (N), phosphorus (P) and silicon (Si) concentrations are very high and rarely approach levels that limit phytoplankton growth in the Delta (Jassby and others 2002). Zooplankton biomass, ZB (mg C m^{-3}), was the cumulative biomass of 45 individual taxa/life stages, computed as the product of abundance a_i and carbon biomass m_i for each taxon (Table 1). Individual dry weights were estimated from either length measurements and published length–dry weight relationships (for example *Sinocalanus doerrii*, Dumont and others 1975; Uye 1982), or from published dry weight measurements for specific taxa (for example *Hexartha* sp, Dumont and others 1975; Bottrell and others 1976). Dry weight was converted to carbon biomass using carbon: dry weight ratios of 0.43 for *Eurytemora affinis*, 0.38 for *Pseudodiaptomus forbesi* (C. Hall unpublished), and 0.48 for other taxa (Andersen and Hessen 1991).

Areal gross primary productivity, Pg (mg C m^{-2} d^{-1}), was calculated from Chl *a* and irradiance using a model [Pg = 3.36 Chl *a* (E/k)] developed from ^{14}C assimilation assays of samples collected seasonally across the Delta (Jassby and others 2002). Net primary productivity was computed as Pg minus phytoplankton respiration rate, as estimated from a model that scales respiration with growth rate (Cloern and others 1995). Net volumetric primary productivity, PP (mg C m^{-3} d^{-1}), is areal primary productivity divided by habitat depth, H. We calculated depth-averaged phytoplankton specific growth rate, P_μ (d^{-1}), as $\ln[(PP\Delta t + PB)/PB]$, where Δt = 1 day. This procedure is valid for well-mixed water columns with vertically-homogeneous phytoplankton biomass. Profiles of temperature, conductivity, and fluorescence revealed vertical homogeneity or ephemeral stratification that typically disappeared in less than half a day.

We estimated zooplankton community grazing rate, ZG (mg C m^{-3} d^{-1}), from an Ivlev function describing ingestion rate as a hyperbolic function of phytoplankton biomass, where ingestion rate approaches a maximum at PB approximately equal to 300 mg C m^{-3}. The ingestion rate, I_i (mg C d^{-1}), of

Table 1. Indices of Plankton Biomass; Rates of Growth, Production, and Grazing; and Their Ratios as Ecological Efficiencies

Index	Description	Units	Computation	Reference
PB	Phytoplankton Biomass	mg C m^{-3}	= 32(Chl *a*)	Cloern and others (1995) Sobczak and others (2002)
ZB	Zooplankton Biomass	mg C m^{-3}	$= 1{,}000 \sum_{i=1}^{45} a_i m_i$, $m_i = f_z\ DW_i$	Andersen and Hessen (1991) C. Hall (personal communication)
PP	Phytoplankton Primary Productivity (net)	mg C m^{-3} d^{-1}	= (1/H) [0.85 Pg – 0.015 PB·H], Pg = 3.36(Chl *a*) (E/k)	Cloern and others (1995) Jassby and others (2002)
P_μ	Phytoplankton Growth Rate	d^{-1}	= ln[(PPΔt + PB)/PB], Δt = 1 day	
ZG	Zooplankton Grazing Rate	mg C m^{-3} d^{-1}	$= 1{,}000 \sum_{i=1}^{45} a_i I_i$, $I_i = 0.95 m_i^{0.8}\ e^{\alpha\ (T\ -\ T')}\ (1 - e^{-0.01PB})$	Cloern (1982) Bogdan and Gilbert (1982)
CG	Grazing by *Corbicula*	mg C m^{-3} d^{-1}	= (FR·PB)/H	Foe and Knight (1986) O'Riordan and others (1995)
ZB:PB	Potential Grazing Pressure	fraction	= ZB/PB	
ZG:PB	Phytoplankton Biomass Grazed Daily	fraction d^{-1}	= ZG/PB	
ZG:ZB	Zooplankton Daily Ration	fraction d^{-1}	= ZG/ZB	
ZG:PP	Primary Production Grazed Daily	fraction	= ZG/PP	
PP_{Res}	Residual Primary Production	mg C m^{-3} d^{-1}	= PP – ZG – CG	

Chl a, chlorophyll a (mg m^{-3}); a_i, abundance of zooplankton taxon i (number m^{-3}); m_i, carbon biomass (µg) of zooplankton taxon i; f_z, 0.48 (0.43 for Eurytemora, 0.38 for Pseudodiaptomus); DW_i, dry weight (µg) of zooplankton taxon i; Pg, areal gross primary productivity; H, mean water depth (m); E, daily surface irradiance (Einsteins m^{-2} d^{-1}, PAR); k, attenuation coefficient (m^{-1}); I_i, ingestion (µg C d^{-1}) of zooplankton taxon i; α, 0.069 (0.05 for rotifers); T, water temperature (°C); T', 10°C (or 16°C for rotifers); FR, filtration rate of Corbicula fluminea.

each taxon was computed as a function of phytoplankton biomass (PB), temperature (T), and body size (m_i) to account for size dependency of daily ration (Cloern 1982): $I_i = 0.95 m_i^{0.8}\ e^{\alpha(T-T')}(1-e^{-0.01PB})$, where α = 0.069 and T′ = 10°C for all taxa except rotifers (α = 0.05 and T′=16°C) (Bogdan and Gilbert 1982). This ingestion model is based on laboratory determinations of calanoid copepod feeding on phytoplankton in culture (for example, see Harris and Paffenhöfer 1976; Mullin and Brooks 1967) and may not accurately represent feeding by other taxa. However, calanoid copepods were found to contribute 63% of the cumulative biomass in all zooplankton samples (see below). Estimated grazing by rotifers, which contributed 31% of the cumulative biomass, was comparable to the lower end of direct measurements (for example, see Starkweather 1980).

We estimated *Corbicula fluminea* pumping rate, PR [ml (mg dry tissue wt)$^{-1}$ h^{-1}], using data published by Foe and Knight (1986) of siphon pumping rate PR and clam size as ash-free dry weight. Adjustments were made for water temperature, using a factor ($0.43e^{0.11T}$) based on laboratory experiments of Foe and Knight (1986). Clam filtration (and phytoplankton ingestion) rates are smaller than pumping rates because of inefficiencies caused by algal depletion in near-bed concentration boundary layers; we computed filtration rates, FR [m^3 m^{-2} d^{-1}], with the relationship derived by O'Riordan and others (1995), assuming maximum rates of water refiltration (that is, the approach estimates lower bounds on FR). From filtration rates, we calculated water column turnover rate (= FR/H, d^{-1}) and *Corbicula* grazing rates (CG = (FR·PB)/H, mg C m^{-3} d^{-1}, Table1). We classified habitats sampled during our study as ''colonized'' by *Corbicula* where CB exceeded 10 g dw m^{-2}. We determined occurrences (presence/absence) of *Corbicula* at other sampling locations from benthos surveys during 1998–2000 by the California Department of Water Resources (http://www.iep.ca.gov/data.html) and 2003 (F. Parchaso, personal communication).

High-resolution Spatial Mapping

During the September 2001 tidal cycle study of MI, we sampled continuously along horizontal transects to measure small-scale variability of phytoplankton biomass and SPM. Separate boats mapped water depth, Chl *a* fluorescence, and turbidity along transects inside MI and in surrounding channels during five consecutive slack tides. Water was pumped from 1.5 m to a Turner Designs 10-AU

fluorometer calibrated with Chl *a* samples and a Turner Designs 10-AU nephelometer calibrated with SPM samples. Fathometer depth, fluorescence, and turbidity were measured and stored on a data logger every 5 s, yielding over 24,000 data points, which were then binned into 1-min intervals. We computed primary productivity from Chl *a* and SPM at each transect location using the method described above and then estimated total daily primary production inside MI as the mean of all derived PP measurements along the interior transect.

Tidal Transport of Phytoplankton Biomass

Tidally driven advective and dispersive transport of phytoplankton biomass was measured using an RDI Instruments Acoustic Doppler Current Profiler (ADCP) and near-surface and near-bottom fluorometers (Turner Designs SCUFAs) moored in the opening between Mildred Island and its bounding channel (site M1, Figure 1b). The ADCP measured velocity profiles (binned into 0.5-m depth intervals), and the fluorometers measured fluorescence (calibrated with weekly Chl *a* samples) every 10 min for 40 days during August–September 2001. Velocity was converted to total discharge (water mass flux, Q, $m^3\ s^{-1}$) through the flow cross section using the rating process of Ruhl and Simpson (2005). Time series of discharge and Chl *a* (mean of near-surface and near-bottom measurements) were used to compute phytoplankton biomass transport as Chl *a* flux through the opening. Following Fischer and others (1979), we decomposed the total tidally averaged Chl *a* flux into two components: an essentially unidirectional background ''advective'' flux and a ''dispersive'' component resulting from ebb/flood differences in Chl *a* concentrations:

$$\langle \dot{C}(t) \rangle = \underbrace{\langle Q(t) \rangle \langle C(t) \rangle}_{\text{advective}} + \underbrace{\langle Q'(t) C'(t) \rangle}_{\text{dispersive}} \qquad (1)$$

where $\langle\ \rangle$ represents the tidal average (computed using a digital filter) (Walters and Heston 1982), $\dot{C}$ represents Chl *a* flux (mg s^{-1}), *t* is time, and ′ represents the time-varying fluctuation about the tidal mean.

Results

Nutrients

Dissolved inorganic nutrients did not approach concentrations that limit phytoplankton growth in any of the more than 200 samples we collected during 1997–1999 and 2001. Dissolved reactive phosphorus concentrations averaged 2.3 μM and were never lower than 0.5 μM (Figure 2a). Dissolved inorganic nitrogen averaged 34 μM and never fell below 3 μM (Figure 2b). Dissolved silica concentrations were never below 130 μM (data not shown). These results are consistent with monitoring data collected across the Delta from 1968 to 1998 (Jassby and others 2002) showing that potential nutrient limitation was extremely rare (DIN, DRP) or nonexistent (DSi) and with our assumptions that phytoplankton growth rate in the Delta is limited by light availability and not nutrient resources.

Phytoplankton

Phytoplankton growth rates ranged from 0.15 to 0.21 d^{-1} (= 0.2 to 0.3 doublings d^{-1}) at the deepest site and 0.55 to 0.93 d^{-1} (= 0.8 to 1.4 doublings d^{-1}) at the shallowest sites. This variability was highly correlated with habitat depth: $P\mu = 0.86 - 0.27 \ln[H]$, ($R^2 = 0.72$), (Figure 3a). If, as hypothesized, phytoplankton biomass is regulated primarily by growth rate, then PB should vary similarly with H. Over 2,000 measurements of Chl *a* within and around MI showed a complex, nonmonotonic relationship between phytoplankton biomass and habitat depth, with highest biomass occurring where H was approximately 3.5–5.5 m. However, Chl *a* was extremely variable among subhabitats within that narrow depth range (Figure 3b). Discrete sampling throughout the Delta over several years also showed that variability of PB (from 40 to 3,500 mg C m^{-3}) was irregular along the habitat depth gradient (Figure 4a) and unrelated to growth rate Pμ ($R^2 < 0.01$). High phytoplankton biomass was common at only three of 24 sampling locations, MM in the lower San Joaquin River and MIs and M2 in Mildred Island (Figure 1). Net primary production ranged from 4 to 1,200 mg C $m^{-3}\ d^{-1}$, but this variability was also weakly related to depth of the water column ($R^2 = 0.12$) or Pμ ($R^2 = 0.04$) (Figure 4b). This robust data set leads to rejection of our hypothesis that phytoplankton biomass varies systematically across gradients of habitat depth.

The phytoplankton community was dominated by a few taxa, including centric diatoms (*Cyclotella* spp., *Actinocyclus normanii*, *Skeletonema potamos*), cryptophytes (*Plagioselmis* sp., *Teleaulax amphioxeia*), *Cyanobium* sp., *Nannochloropsis* sp., and smaller components from other divisions (Table 2). Diatoms and cryptophytes have higher nutritional value than other algal taxa, partly be-

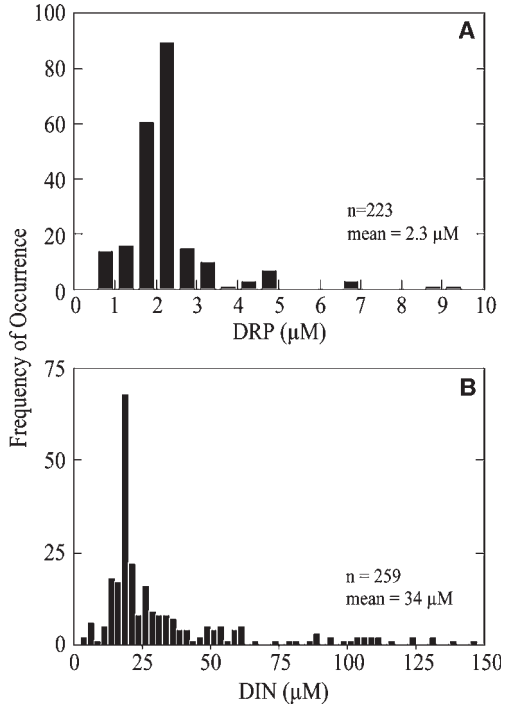

Figure 2. Frequency distributions of **A** dissolved reactive phosphorus (DRP) and **B** dissolved inorganic nitrogen (DIN) concentrations (µM) in the Delta during 1997–99 and 2001. Samples from 1997–99 were collected throughout the Delta (including our study area). Samples from 2001 were collected in/around MI during August and September. The number of samples and mean concentrations for the entire sampling period for each constituent are also shown.

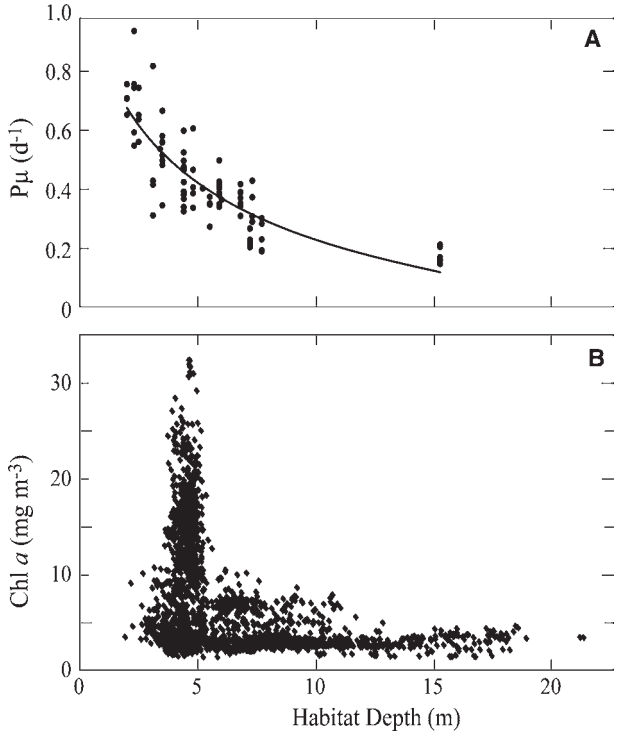

Figure 3. A Phytoplankton growth rate (Pµ) versus mean habitat depth. Growth rate was calculated from measured temperature, irradiance, and light attenuation in MI during 2001 and in Franks Tract (FT) during 2002. The logarithmic function was fit by least-squares regression: Pµ= 0.86 − 0.27 ln[H] (R^2 = 0.72). **B** Chlorophyll *a* (Chl *a*) concentrations measured during synoptic mapping plotted against habitat depth. Mapping was performed on five consecutive slack tides within and around MI on 5–6 September 2001.

cause of their enrichment in essential fatty acids (see, for example, Brett and others 2000). Their large contributions (diatoms 53% and cryptophytes 25%) to cumulative biomass in all samples and the small contributions from cyanobacteria indicate that phytoplankton biomass is an accessible, high-quality food resource for consumers in the Delta.

Zooplankton

Zooplankton biomass was also dominated by a few taxa, primarily the calanoid copepods *Pseudodiaptomus forbesi* and *Sinocalanous doerri* (Table 3). The cumulative biomass of all copepod life stages contributed 49% of zooplankton biomass in/around MI and 80% of biomass in/around FT. Rotifers (for example, *Hexarthra* sp., *Brachionus* sp., *Filinia* sp.) contributed 49% of zooplankton biomass in MI but only 8% in FT. Cladocerans (*Diaphanosoma brachyurum*, *Bosmina longirostris*, *Daphnia* sp.) were minor components in MI and contributed 11% of biomass in FT.

We hypothesized that zooplankton biomass would covary with phytoplankton biomass because zooplankton are food limited in many Delta habitats. Zooplankton biomass ranged from 4 to 55 mg C m^{-3} and was uncorrelated (R^2 = 0.01) with phytoplankton biomass (Figure 5a) or habitat depth. Estimated rates of zooplankton community grazing were similarly variable, ranging from 5 to 87 mg C $m^{-3}d^{-1}$. We used two indices to explore the apparent decoupling between phytoplankton and zooplankton biomass. The ratio ZB:PB, which measures the proportion of consumer to producer biomass, was highly variable (0.03 to 0.63) where phytoplankton biomass was low, but ZB:PB was always less than 0.1 where PB exceeded approximately 200 mg C m^{-3} (Figure 5b). The ratio ZG:ZB measures the mean daily ration (ingestion rate as a proportion of biomass) of zooplankton, and this index was also stable (around 2.3) in high-PB habitats and variable (0.7–2.2) in low-PB habitats (Figure 5c). A third

Table 2. Phytoplankton Community Composition and Percent Biovolume by Species in Mildred Island and Franks Tract and by Taxonomic Division for All samples

Percent of Total Biovolume	Division	Genus Species
Mildred Island		
39	Bacillariophyta	*Cyclotella atomus*
15	Cryptophyta	*Plagioselmis* sp.
13	Cyanophyta	*Cyanobium* sp.
10	Eustigmatophyta	*Nannochloropsis* sp.
7	Cryptophyta	*Teleaulax amphioxeia*
6	Bacillariophyta	*Skeletonema potamos*
3	Chlorophyta	*Choricystis* sp.
1	Cyanophyta	*Aphanothece* sp.
Franks Tract		
17	Bacillariophyta	*Actinocyclus normanii*
15	Bacillariophyta	*Cyclotella striata*
7	Bacillariophyta	*Cyclotella atomus*
3	Cryptophyta	*Teleaulax amphioxeia*
3	Bacillariophyta	*Melosira varians*
3	Bacillariophyta	*Skeletonema potamos*
2	Bacillariophyta	*Aulacoseira granulata*
2	Bacillariophyta	*Cyclotella meneghiniana*
2	Bacillariophyta	*Aulacoseira islandica*
All samples		
53	Bacillariophyta	
25	Cryptophyta	
9	Eustigmatophyta	
8	Cyanophyta	
3	Chlorophyta	
2	Chrysophyta, Pyrrophyta, Euglenophyta	

Only species that made up more than 1% of total biovolume are listed.

ratio (ZG:PB, not shown) revealed that zooplankton consumed less than 20% of the phytoplankton standing stock daily at most stations, even where PB was less than the presumed food-saturation algal biomass of 300 mg C m^{-3}.

Corbicula fluminea Biomass and Grazing Rate

The distribution of *Corbicula fluminea* was highly patchy, and its biomass ranged from 0 to 130 g dw m^{-2}. Overall, 14 of 23 sites were colonized by *Corbiculaj*, CB exceeded 10 g dw m^{-2} at 9 sites in/around FT and MI. Water-column turnover rates by *Corbicula* filtration ranged from 0.3 to 2.2 d^{-1} (filtering the overlying water column 0.4 to 3.2 times daily), and *Corbicula* grazing rates ranged from 20 to 510 mg C m^{-3} at the colonized sites. Five of the eight sites from the 1998–2000 sampling were considered to be colonized by *Corbicula* based on occurrences recorded during benthos surveys in 2003 (F. Parchaso, personal communication) and 1998–2000 (California Department of Water Resources).

Production–Consumption Balances

We used biomass measures and rate estimates to compute two indices of the balance between primary production and consumption. First, the ratio ZG:PP measures the fraction of daily primary production grazed by mesozooplankton. Although ZG and PP did not vary systematically across habitat types, this ratio was significantly and positively correlated with habitat depth ($y = -0.23 + 0.12x$, $R^2 = 0.56$) (Figure 6a). At habitat depths less than 8 m, ZG:PP was usually less than 1; but at the deepest habitat, ZG:PP usually exceeded 1 (daily zooplankton consumption exceeded phytoplankton production).

A second index was developed from a simple daily budget of phytoplankton biomass: $PP_{Res} = PP + \Delta PB - ZG - CG$, where ΔPB is the daily increment of phytoplankton biomass in a water parcel and

Table 3. Zooplankton Community Composition and Percent Biomass for Mildred Island, Franks Tract, and All Samples Combined

Division	%	Division	%	Division	%
Mildred Island					
Copepods	49	Herbivorous Rotifers	49	Cladocerans	2
Pseudodiaptomus forbesi	36.4	*Hexarthra* sp.	17.4	*Diaphanosoma brachyurum*	1.6
Nauplii	5.2	Unidentifed	11.0	*Bosmina longirostris*	0.6
Limnoithona tetraspina	3.1	*Brachionus* sp.	8.1	Other species	<0.5
Sinocalanus doerrii	2.1	*Filinia* sp.	4.7		
Acanthocyclops vernalis	1.4	*Monostyla* sp.	1.9		
Eurytemora affinis	<0.5	*Synchaeta bicornis*	1.8		
		Polyarthra sp.	1.3		
		Synchaeta sp.	1.3		
		Keratella sp.	0.9		
		Rotaria sp.	0.7		
		Other species	<0.5		
Franks Tract					
Copepods	80	Herbivorous Rotifers	8	Cladocerans	11
Sinocalanus doerrii	35.6	Unidentified	7.0	*Bosmina longirostris*	4.9
Pseudodiaptomus forbesi	29.0	Other species	<0.5	*Daphnia* spp.	2.6
Nauplii	11.3			*Graptolaberis* sp.	1.4
Eurytemora affinis	2.2			*Diaphanosoma brachyurum*	0.9
Acanthocyclops vernalis	1.7			Unidentified	0.7
Limnoithona tetraspina	0.6			Other species	<0.5
All samples					
Copepods	63	Herbivorous Rotifers	31	Cladocerans	6

Taxa that made up less than 0.5% are not shown.

PP_{Res} is a residual term representing the balance between all processes. If daily changes in biomass, ΔPB, are small, (Figure 8b), we can assume steady state and estimate the residual term as $PP_{Res} = PP - ZG - CG$. The residual PP_{Res} was positive and highly correlated with PP where *Corbicula* was absent ($R^2 = 0.99$), but it was small or negative and uncorrelated with PP where *Corbicula* was abundant (Figure 7a). The daily phytoplankton balance was uncorrelated with zooplankton grazing, regardless of *Corbicula* presence (Figure 7b). The residual PP_{Res} was generally negative and highly correlated with *Corbicula* grazing where the clam was present ($R^2 = 0.77$, Figure 7c).

Tidal Transport

A 40-day series of current measurements illustrates the strongly tidal nature of water flow between northern MI at its adjacent channel. Volumetric flow rate during August–September 2001 (Figure 8a) oscillated approximately twice daily, with maximum instantaneous flow rates of 200–400 m^3 s^{-1}. Chl *a* concentration was also periodic (Figure 8b), containing a combination of diurnal and semidiurnal frequencies of variability (L. V. Lucas and others unpublished). Superimposed on an ambient advective flux of Chl *a* through the Delta system was a dispersive flux of Chl *a* (Figure 8c) caused by tidal time-scale pumping of higher Chl *a* water from MI to the channel. On average, this dispersive flux (<Q′ Chl *a*′>) was oriented *out* of MI, meaning that phytoplankton biomass transported to the channel on northerly-flowing ebb tides did not all return on the subsequent flood tide. The mean daily dispersive flux through this opening between MI and the surrounding channel was 1.9 kg Chl *a* d^{-1} (60.8 kg C d^{-1}). The coupled transport of zooplankton is also likely to be important but we have insufficient data to assess zooplankton transport.

Discussion

What Processes Control Phytoplankton Biomass in a Nutrient-rich Ecosystem?

Our study began with the hypothesis that shallow aquatic habitats sustain high phytoplankton biomass (and therefore high secondary production) because algal growth is light limited and mean water-column irradiance scales inversely with habitat depth. Estimated growth rates did vary

systematically across gradients of habitat depth, with highest growth rates in shallow domains (Figure 3a). Shallow, nutrient-rich habitats sustain fast phytoplankton population growth, with maximal rates comparable to 1.4 doublings of biomass per day. However, shallow habitats do not necessarily sustain high algal biomass, and our initial hypothesis was rejected on the basis of high-resolution mapping (Figure 3b) and discrete sampling across the Delta over several years (Figure 4a). Rejection of the hypothesis motivates consideration of other processes that regulate phytoplankton biomass beyond growth rate, such as top-down regulation by zooplankton and *Corbicula* and tidally-driven transport processes.

Top–down Processes. Our results indicate that zooplankton grazing is not fast enough to control phytoplankton biomass in most habitats. Median ZG was only 40% of median PP, and the ratio ZG:PP shows that net production usually exceeds depth-integrated zooplankton grazing in habitats shallower than 8 m (Figure 6a). The significant linear relation in Figure 6a (which remains significant with a similar slope and intercept upon removal of the deepest station, M1) implies that the pelagic component of shallow habitats functions as a (large) net source of algal biomass. However, deep pelagic systems are net consumers of primary production because algal respiration consumes a large fraction of photosynthetic production in the deep aphotic zone, leaving a small residual insufficient to meet the zooplankton grazing demand.

Phytoplankton biomass and production were consistently low in habitats colonized by *Corbicula fluminea* (Figure 4). *Corbicula* grazing rates were, on average, eight times higher than zooplankton grazing rates in those colonized habitats. The residual production PP_{Res} provides an index for measuring the effect of *Corbicula* grazing. Whereas shallow pelagic systems routinely functioned as net sources of phytoplankton biomass (Figure 6a), this trend was not true when we accounted for losses to *Corbicula* grazing (Figure 6b). Despite higher phytoplankton growth rates in shallow habitats, consumption by *Corbicula* rendered nearly all colonized shallow habitats phytoplankton sinks ($PP_{Res} < 0$), (Figure 6b). Residual production PP_{Res} was regulated by *Corbicula* grazing at colonized sites, indicating strong top–down control (Figure 7c); however, PP_{Res} was highly correlated with primary production at uncolonized sites, indicating bottom–up control of biomass (Figure 7a). The power of *Corbicula* grazing as a control on phytoplankton biomass accumulation in Delta habitats is consistent with the proposition that turbulent, light-limited systems are susceptible to declines in primary production due to invasive bivalves (Caraco and others 1997). Our results show that *Corbicula* colonization will determine a habitat's value to the pelagic food web, supporting the idea that top–down controls can have stronger ecosystem-level effects than bottom–up controls in aquatic systems (Moulton 1999).

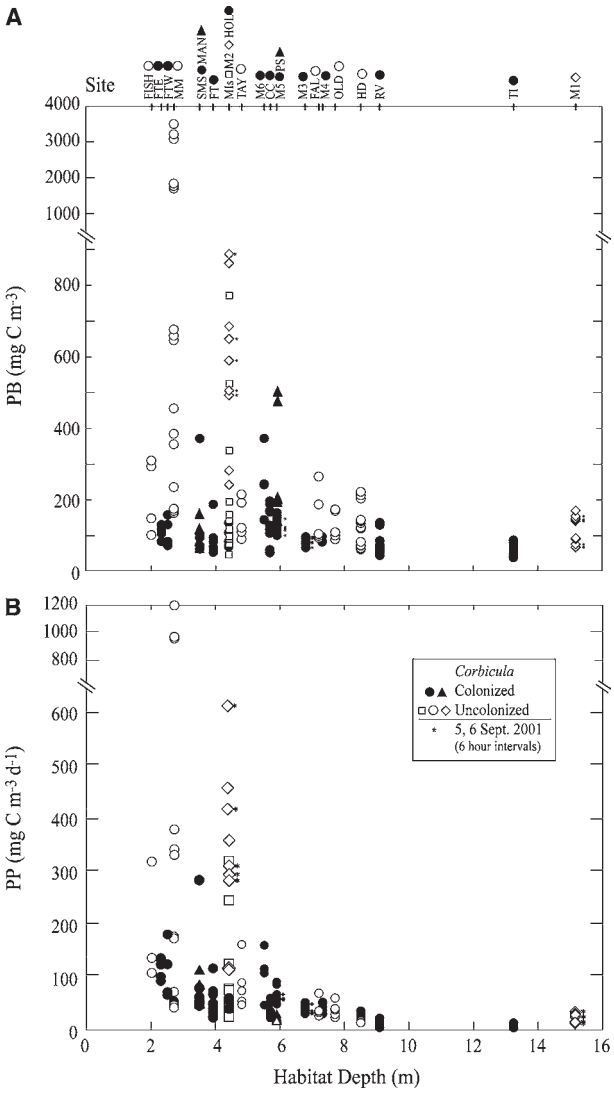

Figure 4. **A** Phytoplankton biomass (PB). **B** Net primary production (PP) versus mean habitat depth. Samples were collected during 1998–2000 (Sobczak and others 2002), 2001 (MI) and 2002 (FT). *Open symbols* indicate stations where *Corbicula* was rare or absent (''uncolonized''). *Filled symbols* indicate stations where *Corbicula* was abundant (''colonized''). *Asterisks* next to symbols indicate samples taken every 6 h over 30 h on 5–6 September 2001. Stations and corresponding symbols are detailed on the top *x*-axis at appropriate depths; stations with common depths are distinguished by different symbols.

Export from Shallow to Deep Habitats. Transport by advection and tidal dispersion must be an important process in the Delta because some habitats are net producers and others are net consumers of phytoplankton biomass (Figure 6). In the absence of transport, biomass would build in the producing habitats and become depleted in the consuming habitats. Some shallow sites uncolonized by *Corbicula* (FISH, TAY) failed to support elevated (>320 mg C m^{-3}) phytoplankton biomass (Figure 4), suggesting that biomass is transported away from productive habitats faster than it can accumulate. Lucas and others (2002) attributed low Chl *a* concentrations in northern MI to vigorous tidal exchange with the adjacent channel and consequent dispersion of low Chl *a* channel water into MI. We measured the dispersive Chl *a* flux at this location for 40 days; the results showed large tidal oscillations but net (tidally averaged) export of phytoplankton biomass from MI to the exterior channel (Figure 8c). The combination of tidally oscillating currents within a domain of spatially - variable Chl *a* drives a dispersive transport of phytoplankton from producing habitats to consuming habitats. Tidal transports could also amplify systemwide grazing losses by exposing phytoplankton to patchily distributed *Corbicula* along tidal excursions (approximately 10 km in deep narrow Delta channels).

Thus, fast transport and fast *Corbicula* grazing are the key processes leading to the decorrelation between phytoplankton growth rate and biomass distribution. Phytoplankton biomass provides no information about these governing processes, so biomass alone is a weak indicator of the ecological value of aquatic habitats.

Why Are Phytoplankton and Zooplankton Biomass Uncorrelated?

We hypothesized that zooplankton biomass would covary with phytoplankton biomass because the algal food supply is commonly suboptimal for the growth of pelagic consumers across the Delta. However, producer and consumer biomass were uncorrelated (Figure 5a). We will therefore consider three processes that dampen or cloud the trophic linkage between phytoplankton and zooplankton.

Adaptive Feeding Efficiency. From a fixed, Eulerian frame of reference, the highly variable ratio ZB:PB suggests high variability in the yield of zooplankton per unit of phytoplankton biomass and that this yield is highest at low food levels (Figure 5b). This pattern derives from the ingestion model, which is grounded in a rich history of feeding experimentation showing that particle capture is a nonlinear, asymptotic function of food density (for example, see Harris and Paffenhöfer 1976; Mullin and Brooks 1967). Although the ingestion rate of individual taxa was computed as a function of temperature, size-dependent optimal rations, and food availability, the computed ration for the zooplankton community (ZG:ZB) was strongly influenced by the asymptotic Ivlev ingestion function (Figure 5c). The index ZG:ZB shows that variability of daily ration above PB of approximately 300 mg C m^{-3} (2.1 to 2.5 d^{-1}) is much smaller than variability of the food resource PB (up to 880 mg C m^{-3}). This highly damped propagation of variability from food concentration to ingestion is a consequence of feeding mechanics and behavior that enable calanoid copepods to efficiently exploit a dilute phytoplankton suspension (minimum daily ration was 70% of biomass per day), (Figure 5c) and rapidly attain a maximum ration that does not grow with further increases in food concentration. This nonlinear feeding function describes a compensatory mechanism that buffers the effect of food variability on zooplankton ingestion and production (Pace and others 1999).

Food Subsidies and Habitat Connectivity. An Eulerian reference frame misses the tidal time-scale transports of water parcels and their contained plankton across habitat gradients, so it is difficult to assess the complexities of phytoplankton–zooplankton coupling from fixed-point sampling. Transport within and between habitats can suppress the ''local'' trophic cascade effect by facilitating habitat food subsidies. Water and suspended particles are exchanged between habitats over the course of a tidal cycle (Monsen and others 2002), and transport can act as a mechanism for *net* displacement of particles (including phytoplankton) from one habitat type to another (Lucas and others 2002). Calculations of percent production consumed by zooplankton (ZG:PP) indicate that a food deficit exists in habitats deeper than about 10 m, implying an external source of phytoplankton to sustain zooplankton nutrition in deep habitats (Figure 6a). Furthermore, the index PP_{Res} reveals production deficits in both shallow habitats (primarily due to *Corbicula* grazing) and deep ones (Figure 6b). These recipient habitats may be subsidized by the net transport of food from neighboring connected donor habitats, such as southern MI, where residual production averaged 290 mg C m^{-3} d^{-1}.

Phytoplankton biomass may be transported across other boundaries (than the northern opening) along the perimeter of MI. Time series of Chl *a* in MI suggest that phytoplankton biomass is rela-

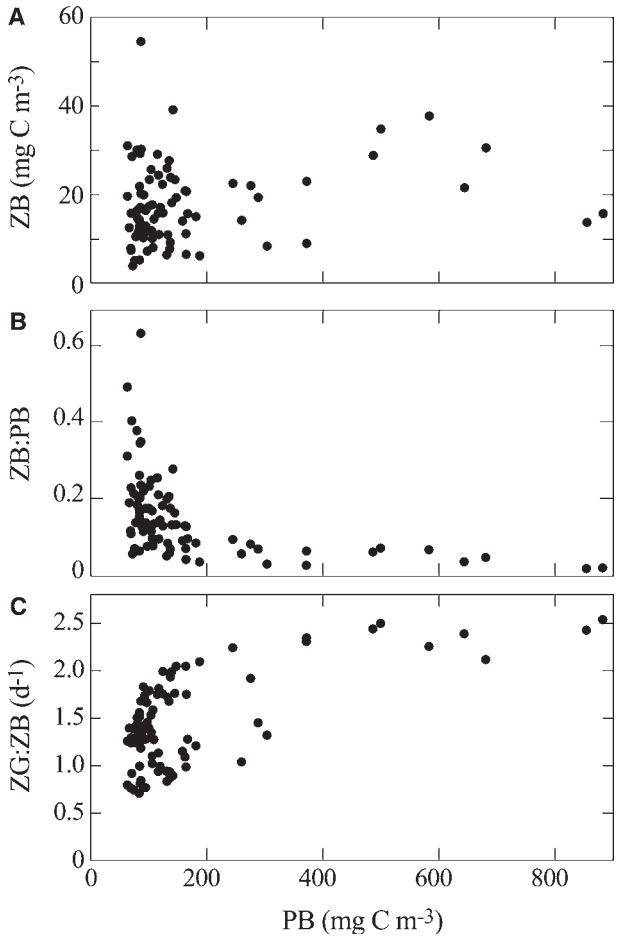

Figure 5. A Zooplankton biomass (ZB). **B** Potential grazing pressure (ZB:PB). **C** the zooplankton daily food ration (ZG:ZB) against phytoplankton biomass (PB) from samples collected in/around MI during 2001 and FT during 2002.

tively stable over periods of days (Figure 8b), indicating that a positive value for PP_{Res} represents production that may be exported from the habitat. We calculated total residual production for the interior of MI ($PP_{Res–MI}$) to estimate the potential daily flux of C from MI. We subtracted average consumption by *Corbicula* (7 mg C m^{-3} d^{-1}) and zooplankton (48 mg C m^{-3} d^{-1}) within MI from a total daily PP of 180 mg C m^{-3} d^{-1} (calculated from the high-resolution mapping data) to arrive at a potential daily C export of 2,380 kg C d^{-1} (using a volume for MI of 1.9×10^7 m^3, Monsen and others 2002). This export of shallow-habitat derived phytoplankton would subsidize 22–23 km^2 (around five times MI's surface area) of channel habitat sparsely colonized by *Corbicula* (for example, M4 or M6) or about 2 km^2 (only one-half of MI's surface area) of heavily colonized channel habitat with large deficits (for example, M3 and M5), (Figure 7c). Here, $PP_{Res–MI}$ illustrates the potential value of a donor habitat like MI to the entire system; however, the value of such donor habitats will decrease as more habitats are colonized by *Corbicula*.

Fish Predation. Zooplankton dynamics can be tightly regulated by predation (Jeppesen and others 2003), so top–down processes can also explain the weak correlation between zooplankton and phytoplankton biomass. Fish predation was not measured in our study, but low values of ZB:PB (less than 0.2) in the majority of samples (Figure 5b) are comparable to values in lakes where high predation pressure is exerted on zooplankton by planktivores (Jeppesen and others 2003). Grimaldo and others (2004) found that ichthyoplankton abundance was higher in southern MI (where mean ZB:PB = 0.05) than in the north (where mean ZB:PB = 0.23), suggesting that zooplankton production efficiency (as biomass per unit of food resource) is influenced by spatially variable predation.

Implications for Habitat Restoration Programs

This study was designed to assess pelagic functions in a disturbed ecosystem that is now the focus of large-scale restoration. One practical value of ecosystem science can come from the application of fundamental principles to guide strategic plans for meeting management targets, such as the amplification of functional diversity or the sustainability of native species. Our collective experience in applying ecological principles to meet restoration goals is limited, so lessons from site-specific studies might be useful starting points for designing assessments of habitat functional variability in other large ecosystems. The results presented here offer three lessons that may extend beyond the Sacramento–San Joaquin Delta and could provide a basis for comparing our evolving experiences in the application of ecosystem science to management of other large aquatic ecosystems.

Performance Measures of Ecosystem Management. Other large-scale programs of ecosystem rehabilitation (Clark and Zaunbrecher 1987; Walters and others 1992) are built from frameworks of adaptive management in which the outcomes of restoration actions are followed through monitoring and then lessons are applied to refine guiding conceptual models and next-phase management actions (Holling 1978; Walters 1986; Ringold and others 1996). Our results illustrate the importance of monitoring design for measuring the performance of management actions. For example,

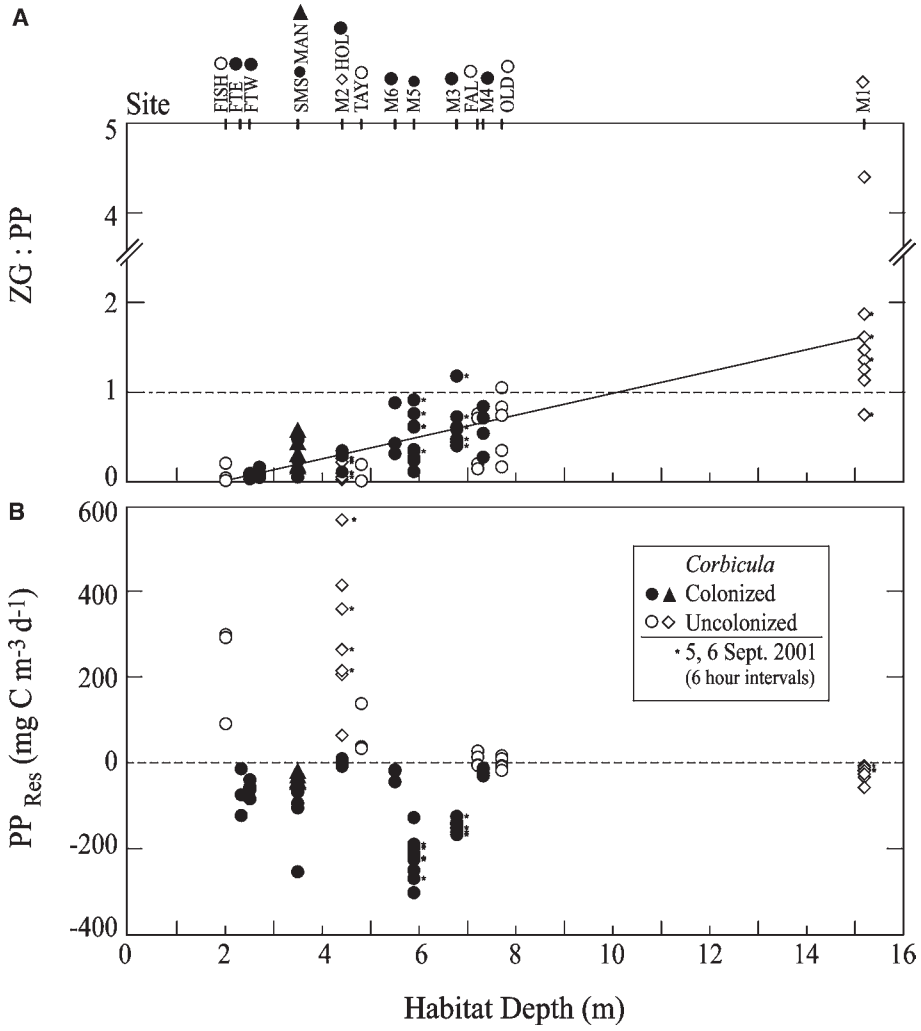

Figure 6. **A** The ratio of zooplankton grazing to primary production (ZG:PP). **B** Residual primary production (PP_{Res}) versus mean habitat depth from samples collected in/around MI in 2001 and FT in 2002. *Open symbols* indicate stations where the invasive clam, *Corbicula*, was rare or absent (''uncolonized''). *Filled symbols* indicate stations where *Corbicula* was abundant (''colonized''). *Asterisks* next to symbols indicate samples taken every 6 h over 30 h on 5–6 September 2001. Station and corresponding symbols are detailed on the top *x*-axis. **A** The *horizontal dashed line* divides surplus and deficit habitats based on zooplankton consumption alone. The *trendline* represents the linear fit of ZG:PP ($y = -0.22 + 0.13x$, $R^2 = 0.57$) with depth. **B** For PP_{Res}, the *horizontal dashed line* separates potential donor ($PP_{Res} > 0$) and recipient ($PP_{Res} < 0$) habitats when consumption by both zooplankton and *Corbicula* is taken into account.

if the goal is to amplify production in food webs that sustain endangered or threatened species, then the biomass of primary and secondary producers could be monitored to test the hypothesis that habitat creation leads to increased stocks of forage biota and their food supply. However, biomass alone is not a sufficient metric for interpreting the outcomes of habitat creation because it provides no information about the underlying processes of biomass change. We show here that phytoplankton biomass in a low-productivity ecosystem is only weakly related to phytoplankton growth rate across habitat gradients because other processes (transport, mixing, and consumption) contribute to biomass variability.

Success in the experimental application of adaptive management depends on monitoring to provide sufficient information for both *measuring* and *understanding* the outcomes of habitat creation, so that subsequent phases can incorporate improved mechanistic knowledge of the linkages between habitats and the functions they provide. In the absence of process measurements, indices can be derived to provide strong clues about the functional responses of manipulated ecosystems. For example, ZG:PP and PP_{Res} indices distinguish habitats that function as net producers or net consumers of algal biomass. Efficiency indices (ZG:ZB, ZB:PB) provide clues about why consumer and producer biomass and production are weakly correlated, even where consumers are food limited. Thoughtful design of post–ecosystem manipulation data collection and analysis might be just as important to the success of adaptive management as the design of ecosystem manipulations themselves.

Habitat Connectivity. Ecosystem restoration is guided by the principle that habitat mosaics support the diversity of functions required to sustain complex communities (Noss 1983). Our results reinforce the concept that system responses to enhanced habitat diversity are strongly set by the patterns and rates of connectivity between habitats

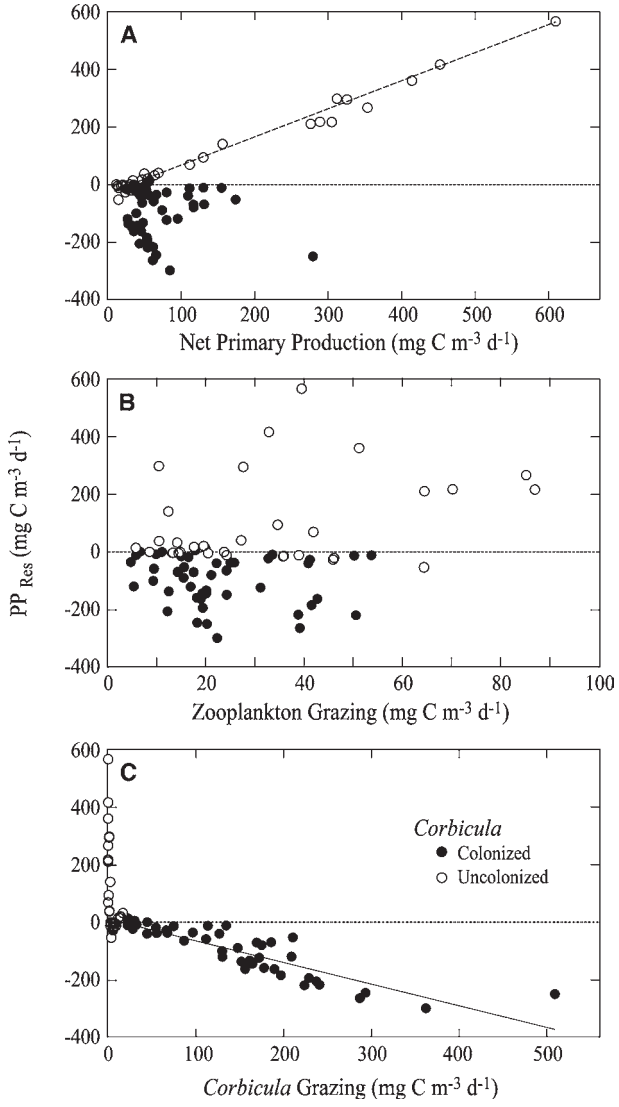

Figure 7. Residual phytoplankton production (PP_{Res}) versus **A** net primary production (PP). **B** zooplankton grazing (ZG). **C** *Corbicula* grazing (CG) from samples collected during 2001 (MI) and 2002 (FT). *Open circles* indicate sites where *Corbicula* was rare or absent (''uncolonized''). *Filled circles* indicate sites where *Corbicula* was abundant (''colonized''). *Trend lines* represent significant correlations of **A** PP_{Res} at uncolonized sites with PP ($R^2 = 0.99$, $P < 0.001$) and (**C**) PP_{Res} at colonized sites with CG (inverse correlation, $R^2 = 0.77$, $P < 0.001$).

(Polis and others 1997; Reiners and Driese 2001). Connectivity in aquatic systems is driven by water flows and mixing that transport materials, energy, and biota, leading to displacements of ecological values from one habitat to another. For example, we show that shallow habitats support high phytoplankton growth rates such that net primary production exceeds local zooplankton consumption, whereas light-limited deep habitats do not supply sufficient primary production to sustain local zooplankton consumption. Shallow autotrophic habitats can export algal biomass and fuel secondary production in adjacent deep heterotrophic habitats, but only if these donor and recipient habitats are physically connected.

Full assessment of the ecological values of different aquatic habitats requires measurement of hydraulic connectivity and its influence on regional-scale responses to habitat-scale processes. In complex, dynamic environments, high-frequency monitoring may be critical to quantify and understand connectivity between habitats. We see this in the tidal dispersive flux of phytoplankton biomass between northern MI and its neighboring channels: MI's contribution of phytoplankton biomass to adjacent channels results from the correlation of hourly-scale variations in current velocity and phytoplankton biomass. This flux component would not be discernable with temporally coarse (for example, weekly or monthly) measurements of flow and Chl *a*. Therefore, high-frequency monitoring may be necessary for the accurate quantification of the rates of material transport between adjacent habitats or sub habitats, especially in geometrically complex tidal environments. Such fundamental knowledge of hydrodynamic transport processes may be a general prerequisite for success in the design of management strategies and the interpretation of biotic and functional responses to habitat manipulations.

Invasive Species and Ecosystem Restoration. The global translocation of species is now recognized as a central mode of anthropogenic disturbance of ecosystems and their biological communities (Vitousek and others 1996; Cohen and Carlton 1998). We show here how alien species can exert a powerful constraint on the outcomes of management actions to rehabilitate ecosystems and their functions that sustain native species. Across a low-productivity ecosystem where zooplankton biomass and its algal food supply have declined significantly, phytoplankton biomass is persistently low in habitats colonized by the alien clam *Corbicula fluminea*. On a systemwide scale, *Corbicula fluminea* consumes more primary production than crustacean zooplankton, and food competition between benthic and pelagic consumers is one factor in the decline of zooplankton stocks here, as in ecosystems colonized by the zebra mussel *Dreissena polymorpha* (Caraco and others 1997; Jack and Thorp 2000) or other bivalves such as *Potamocorbula amurensis* (Nichols and others 1990; Alpine and Cloern 1992).

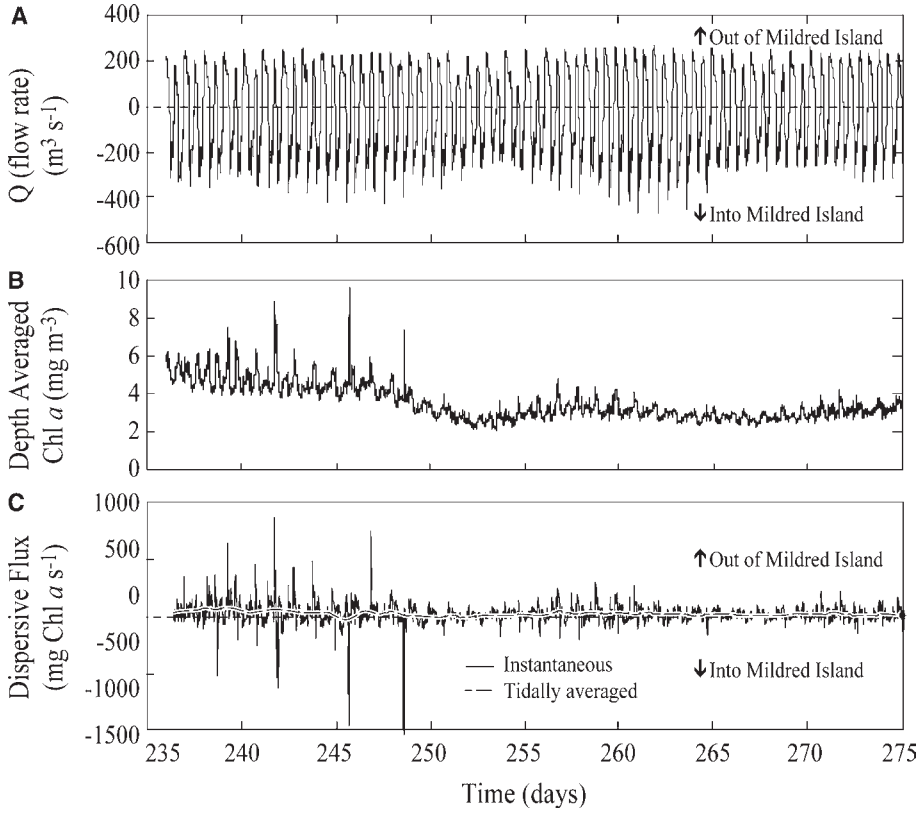

Figure 8. Time series at the northern opening of MI of **A** flow rate (Q). **B** depth-averaged Chlorophyll *a* (Chl *a*). **C** instantaneous and tidally averaged (*smoothed line*) dispersive flux of Chl *a* through the northern opening. Data were collected at 10 min intervals from 23 August to 1 October 2001. Positive values for flow rate and dispersive flux indicate flow or flux out of MI through the northern opening; negative values indicate flow or flux into MI through the northern opening. Tidally averaged dispersive flux (**C**, *smoothed line*) was generally positive (or out of MI).

The unexplained patchy distribution of *Corbicula fluminea* in the Sacramento–San Joaquin Delta implies high uncertainty in the outcomes of creating new aquatic habitats (Lucas and others 2002). New habitats colonized by *Corbicula* will function as net consumers of phytoplankton biomass and contribute little forage production in pelagic food webs. Uncolonized shallow habitats will amplify production in pelagic food webs. Although we can, to some extent, engineer habitat attributes such as bathymetry, quality of source waters, and hydrodynamic transports, we cannot control or even predict which biological communities will colonize new habitats and how those communities will evolve over time–which underscores the need for adaptive management strategies in ecosystem restoration. The alien clam *Corbicula fluminea* is a key species in this ecosystem, and its strong top–down control of phytoplankton biomass and production is a severe constraint on our capacity to amplify pelagic production through habitat creation. Alien species are equally compelling constraints on the recovery of native species in other large ecosystems (Sakai and others 2001). Perhaps the single most effective strategy for ecosystem rehabilitation is the preemptive strategy of aggressively curtailing the further translocation of aliens (Vitousek and others 1996).

Conclusions

The emerging era of landscape-scale environmental management provides opportunities to apply and test ecological principles to meet the goals of ecosystem rehabilitation programs. This study, which compared a small subset of ecological functions across habitat gradients in one ecosystem, illustrates three principles that may be general. First, adaptive management is a learning process, and success depends on the thoughtful design of the experimental component of post–ecosystem manipulation data collection and synthesis just as it depends on the thoughtful design of ecosystem manipulations; generic monitoring designs may not fully exploit the opportunities for learning. Second, a key to understanding and managing complex landscapes is knowledge of the patterns and rates of connectivity among habitats that drive fluxes of energy, resources, and biota and therefore determine the ecosystem-scale outcomes of habitat creation. Finally, invasive species can disrupt key processes and severely constrain the benefits of habitat restoration. The role of *Corbicula fluminea* as an invasive keystone species in the Sacramento–San Joaquin River Delta illustrates the need for aggressive strategies to curtail species introductions as a component of ecosystem rehabilitation.

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EXHIBIT C

7 March 2025

Carmen Borg
Shute, Mihaly & Weinberger LLP
396 Hayes Street
San Francisco, CA 94102
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Subject: **CEMEX Rockfield Modification Project, Fresno County, CA**
Acoustical Comments on Draft Environmental Impact Report
Salter Project 25-0038

Dear Carmen:

Comment 58C-1

As requested, we reviewed Subchapter 4.13 Noise of the Draft Environmental Impact Report (DEIR) for the subject Project. We also reviewed information in several sections of Appendix H (Noise Assessment).

SUMMARY

In our opinion, the DEIR does not implement adequate thresholds for blasting and does not sufficiently assess or mitigate potential acoustical impacts to both nearby people and wildlife. The DEIR, therefore, fails to protect the community from future excessive noise and vibration. Our comments focus on the following issues:

1. Blasting impact analysis thresholds fail to adequately address human disturbance at nearby sensitive receptors, while focusing solely on damage criteria instead. Therefore, nearby residences and recreational areas could be exposed to excessive vibration that could be startling and disruptive, resulting in complaints, and result in a significant impact under CEQA. The related blasting analysis and mitigation measures should be updated to be stricter and to ensure that noise and vibration impacts are adequately reduced, to the greatest extent feasible. In addition, the required community engagement and communication efforts should be improved. Finally, the blast monitoring, reporting, and review efforts should also be improved.
2. Processing operations are projected to exceed noise impact thresholds at night and operating hours are to be extended. The proposed operational noise mitigation is inadequate as it fails to require specific noise reduction measures. The Project should "guarantee" a solution that mitigates the potential noise impacts in the original construction, rather than take a "wait-and-see" approach with a lengthy retrofit process that would follow complaints.

3. The DEIR also fails to fully analyze the noise and vibration impact of the Project on wildlife. Beyond the impact analysis for fish, the DEIR includes no noise or vibration thresholds, analysis, or mitigation for other wildlife in nearby areas. In particular, an analysis of blasting noise, vibration, and "airblast" should be included.

Comment 58C-1 Cont.

BACKGROUND

Comment 58C-2

The Project includes changes to the operation of the Rockfield Quarry sites in Fresno County. The existing aggregate (rock, sand, and gravel) mining and processing operations occur at the Plant Site and the Quarry Site. The proposed Project includes expanded mining operations in two stages as listed in the Project Description section of the DEIR Executive Summary. The Project would include 100 years of additional mining including new hard rock mining at the Quarry Site to a depth of 600 feet requiring the use of rock blasting that is anticipated to occur once or twice per week.

As currently proposed, blasting vibration would be clearly noticeable to nearby residents. At an unknown or unscheduled time of day, people would experience a mixed sensation of feelable vibration at the ground or in their home's structure and an impulsive air pressure wave. This is expected to be accompanied by secondary effects such as a rattle at windows, hung pictures, or other objects in their homes. Depending on the setting, people's activities, and their sensitivity, these weekly unanticipated experiences would likely be disturbing.

SECTION 1 – COMMENTS ON BLASTING

Comment 58C-3

#1.A – Thresholds for Evaluation of Blasting Vibration Ignore Human Disturbance

Impact 4.13-6 assesses the potential for the Project to generate substantial ground-borne vibration and airblast "vibration" as a result of blasting. The analysis of ground-borne blasting vibration is based solely on the potential for Project-related blasting to cause damage to nearby structures. For reference, the DEIR thresholds used to address potential blasting vibration impact vary from 0.75 inch/second to 2.0 inches/second, depending on the frequency of the resulting vibration. Thresholds for human disturbance from blasting vibration are not included. This is a notable oversight as there are several sensitive receptors as close as 250 feet from the Project area as well as recreational users of Lost Lake Park to the north. A revised analysis must employ stricter thresholds to facilitate analysis of impacts to nearby residents. We have the following supporting comments. Relevant excerpts of referenced documents are enclosed in the Appendix.

1. **Federal Transit Administration (FTA)**: It is generally accepted that ground-borne vibration thresholds to address human disturbance are more strict than standards related to building damage. For example, the DEIR presents significance thresholds from the FTA[1] for both building damage and human annoyance. These are excerpted below (Tables 4.13-10 and 4.13-11, DIER page 4.13-35). These tables clearly indicate stricter standards for the evaluation of vibration with respect to human disturbance. However, the DEIR blasting vibration impact analysis ignored the thresholds listed in Table 4.13.11.

Comment 58C-4

Table 4.13-10
FTA Thresholds for Assessing Damage to Structures

Building Category	Level RMS VdB[1]
I. Reinforced-concrete, steel or timber (no plaster)	102
II. Engineered concrete and masonry (no plaster)	98
III. Non-engineered timber and masonry buildings	94
IV. Buildings extremely susceptible to vibration damage	90

Table Source: Table 7-5 of FTA 2018.
Table Notes:
1. 1 RMS velocity in decibels (VdB) re 1 micro-inch per second.

Table 4.13-11
FTA Thresholds for Assessing Groundborne Vibration Annoyance Potential

Land Use Category	Impact Levels RMS (VdB)		
	Frequent Event[1]	*Occasional Events[b]*	*Infrequent Events[c]*
Category 1: Buildings where vibration would interfere with interior ops.	65[d]	65[d]	65[d]
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

Table Source: Table 6-3 of FTA 2018.
Table Notes:
a. "Frequent Events" is defined as more than 70 vibration events of the same source per day.
b. "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.
c. "Infrequent Events" is defined as fewer than 30 vibration events of the same source per day.
d. This criterion limit is based on levels that are acceptable for most moderately-sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels.

2. **U.S. Bureau of Mines Commentary**: The DEIR references a report published by the U.S. Bureau of Mines (RI 8507[2], DEIR page 4.13-35). Thresholds of significance for potential building damage from blasting vibration are drawn from this report. However, this report includes commentary related to human disturbance as follows:

Comment 58C-5

[1] FTA reference document: *Transit Noise and Vibration Impact Assessment Manual*, FTA Report No. 0123 (September 2018)

[2] U.S. Bureau of Mines Report of Investigations 8507, *Structural Response and Damage Produced by Ground Vibration from Surface Mine Blasting* (1980)

Comment 58C-5 Cont.

> *"Human reactions to blasting can be the limiting factor. Vibration levels can be felt that are considerably lower than those required to produce damage. Human reaction to vibration is dependent on event duration as well as level. Particle velocities of 0.5 in/sec from typical blasting (1-sec vibration) should be tolerable to about 95 pct of the people perceiving it as "distinctly perceptible." Relevant to whole-body vibration reaction is the degree that the vibration interferes with activity (sleep, speech, TV viewing, reading), presents a health hazard, and affects task proficiency. For people at home, the most serious blast vibration problems are house rattling, fright (fear of damage or injury), being startled, and for a few, activity interference. Complaints from these causes can be as high as 30 pct at 0.5 in/sec, and this is where good public relations attitudes and an educational program by the blaster are essential."* (RI 8507, page 68)

These statements from the U.S. Bureau of Mines report (RI 8507) indicate that people can feel vibration at considerably lower levels than those required to produce damage. And complaint rates could be as high as 30 percent for blasting vibration at 0.5 inch/second.

Comment 58C-6

3. U.S. Office of Surface Mining Reclamation and Enforcement (OSMRE): The DEIR also references the *Blasting Guidance Manual* (March 1987, DEIR Page 4.13-36) published by OSMRE in identifying significance thresholds for blasting vibration. This document also includes the following commentary:

> *"Most authorities agree that the threshold of human perception for blast vibration ground motion is around 0.03 inches per second. Depending on activity, sensitivity, and whether or not the subject knows when the event is to occur, a few humans can sense ground motion as low or lower than most instruments are able to: about 0.01 inch per second! Although complaints can occur at any level perceptible to humans, they are unusual below 0.08 inches per second or so. As peak particle velocities increase and as local and individual sensitivities increase, so will the number of complaints.* ***At, say, 0.25 inches per second****, a level that is eminently safe (*) and well within OSMRE limits, except below 2 Hz,* ***complaints can be expected****."* [emphasis added] (OSMRE Blasting Guidance Manual, page 37)
>
> [* note the author means "safe" with respect to building damage]

Comment 58C-7

4. Federal Highway Administration: The U.S. Federal Highway Administration publication No. FHWA-HI-92-001 titled *Rock Blasting and Overbreak Control* (December 1991) also includes commentary on human sensitivity to vibration. The FHWA report states that "vibration is a fact of daily life" but that "other vibration that contrasts sharply, because it is not part of the daily experience but is unusual, has been designated acultural. It surprises a person, is disturbing, and causes an acute awareness." (FHWA, page 275). This FHWA publication also summarizes previous research on the subject, characterizing human response to vibration as listed in the excerpted Table 10.10 (FHWA, page 275). The DEIR selected threshold of significance or 0.75 inch/second would be considered "severe" according to the FHWA guidance. A "severe" human response to blasting vibration should not be considered acceptable for the next 100 years of hard rock mining at the Project site.

FHWA Table 10.10 Human Response

Response	Particle Velocity
Noticeable	0.02 in/s
Troublesome	0.2 in/s
Severe	0.7 in/s

Comment 58C-7 Cont.

5. **Caltrans**: This comments above are also supported by the Caltrans *Transportation and Construction Vibration Guidance Manual* (April 2020), which states that " Ground vibration and air overpressure can be felt at levels that are well below those required to produce any damage to structures." (Caltrans Manual, page 75). Table 21 below (excerpted from the Caltrans Manual, Page 75), indicates that blasting vibration of 0.75 inch/second (threshold selected in the DEIR) would be considered between "strongly perceptible" and "mildly unpleasant." This characterization demonstrates that it is prudent to select thresholds of significance for blasting vibration that are lower or more strict that the thresholds related to building damage in order to adequately address human disturbance.

Comment 58C-8

Table 21. Human Response to Blasting Ground Vibration and Air Overpressure

Average Human Response	PPV (in/sec)	Airblast (dB)
Barely to distinctly perceptible	0.02–0.10	50–70
Distinctly to strongly perceptible	0.10–0.50	70–90
Strongly perceptible to mildly unpleasant	0.50–1.00	90–120
Mildly to distinctly unpleasant	1.00–2.00	120–140
Distinctly unpleasant to intolerable	2.00–10.00	140–170

6. **Australian Standards**: As further support, consider the Australian Standard AS 2187.2-2006 titled *Explosives – Storage and Use, Part 2: Use of Explosives*. In this standard, the recommended blasting ground vibration limits regarding damage are aligned with the Project DEIR blasting vibration damage thresholds. However, the Australian Standard further adds the following blasting "ground vibration limits for human comfort" (AS 2187.2-2006, Table J4.5(A))

Comment 58C-9

Australian Standard AS 2187.2-2006: Excerpt of Ground Vibration Limits for Human Comfort

Category	Type of Blasting Operations	Peak Component Particle Velocity
Sensitive Site*	Operations lasting more than 12 months or more than 20 blasts	5 mm/s [0.2 inch/s] for 95% blasts per year, 10mm/s [0.4 inch/s] maximum unless agreement is reached with the occupier that a higher limit may apply
Sensitive Site*	Operations lasting for less than 12 months or less than 20 blasts	10 mm/s [0.4 inch/s] maximum unless agreement is reached with the occupier that a higher limit may apply
Occupied non-sensitive sites, such as factories and commercial premises	All blasting	25 mm/s [1 inch/s] maximum unless agreement is reached with the occupier that a higher limit may apply.

** A sensitive site includes houses and low-rise residential buildings, theatres, schools, and similar buildings occupied by people*

Due to the close proximity of sensitive receptors (as close as 250 feet) and the long-term nature of the Project, ground-borne vibration from blasting should be mitigated to a more conservative threshold than the building damage thresholds used in the DEIR. The DEIR has ignored the FTA human sensitivity thresholds offered in the DEIR and ignored commentary from the U.S. Bureau of Mines, the U.S. OSMRE, and the U.S. FHWA. These U.S. publications along with the referenced Australian Standard provide evidence that a stricter standard would be feasible and appropriate to address potential for human disturbance. By failing to incorporate human disturbance thresholds into the blasting analysis, nearby residences and recreational areas could be exposed to excessive vibration that could be startling and disruptive, resulting in complaints, and should be considered a significant impact under CEQA. Therefore, the DEIR has failed to fully address the impact analysis required by CEQA and the related blasting analysis and mitigation measures should be revised.

Comment 58C-9 Cont.

#1.B – Thresholds for Evaluation of Blasting "Airblast" also Focus on Building Damage

Comment 58C-10

Impact 4.13-6 also assesses the potential for the Project to generate substantial "noise", "airborne vibration," or "airblast" as a result of blasting. "Airblast" refers to the low-frequency pressure wave transmitted through the air from an underground blast. The DEIR's analysis of airblast is based on guidance found in the U.S. Bureau of Mines publication RI 8485 *Structural Response and Damage Produced by Airblast* (1980). This document and the referenced thresholds focus on building damage. For reference, the DEIR threshold used to address potential impact from airblast is 0.01295 psi or 133 dB. This threshold is purported in the DEIR to "prevent damage and human disturbance." However, using the same threshold to address both concerns does not account for the fact that humans are more sensitive than buildings and can be disturbed by lower levels. The US Bureau of Mines Publication RI 8485 also includes this commentary on human disturbance, indicating the human annoyance occurs at lower thresholds than building damage:

> *"[Airblast] Levels exceeding 120 dB will produce some annoyance from rattling and fright, with as much as 5 to 10 pct of homes exhibiting such disturbances at the maximum level of 134 dB (0.1-Hz high-pass). Public reaction depends strongly on the blaster's public relations and the general attitudes of the neighbors to the economic and social requirement for the blasting."* (RI 8485, page 66)

Focusing on the airblast damage threshold again pays inadequate attention to the potential disturbance of sensitive residential neighbors related to the secondary effects of blasting airblast, such as the rattling of windows.

The Caltrans *Transportation and Construction Vibration Guidance Manual* (April 2020), which states that "Ground vibration and air overpressure can be felt at levels that are well below those required to produce any damage to structures." (Caltrans Manual, page 75). Table 21 below (excerpted from the Caltrans Manual, Page 75) indicates that airblast overpressure of 133 dB (thresholds selected in the DEIR) would be perceived in the range of "mildly to distinctly unpleasant." These characterizations demonstrate that it is prudent to select a threshold of significance for blasting airblast that is lower or more strict that the thresholds related to building damage in order to adequately address human disturbance.

Table 21. Human Response to Blasting Ground Vibration and Air Overpressure

Average Human Response	PPV (in/sec)	Airblast (dB)
Barely to distinctly perceptible	0.02–0.10	50–70
Distinctly to strongly perceptible	0.10–0.50	70–90
Strongly perceptible to mildly unpleasant	0.50–1.00	90–120
Mildly to distinctly unpleasant	1.00–2.00	120–140
Distinctly unpleasant to intolerable	2.00–10.00	140–170

As further support, consider the Australian Standard AS 2187.2-2006 titled *Explosives – Storage and Use, Part 2: Use of Explosives*. In this standard, the recommended blasting damage airblast limits are aligned with the Project DEIR blasting vibration damage thresholds. However the Australian Standard further adds the following "airblast limits for human comfort" (AS 2187.2-2006, Table J5.4(A))

Australian Standard AS 2187.2-2006: Excerpt of Airblast Limits for Human Comfort

Category	Type of Blasting Operations	Peak Sound Pressure Level
Sensitive Site*	Operations lasting more than 12 months or more than 20 blasts	115 dBL for 95% blasts per year, 120 dBL maximum unless agreement is reached with the occupier that a higher limit may apply
Sensitive Site*	Operations lasting for less than 12 months or less than 20 blasts	120 dBL maximum unless agreement is reached with the occupier that a higher limit may apply
Occupied non-sensitive sites, such as factories and commercial premises	All blasting	125 dBL maximum unless agreement is reached with the occupier that a higher limit may apply.

** A sensitive site includes houses and low-rise residential buildings, theatres, schools, and similar buildings occupied by people*

Comment 58C-10 Cont.

#1.C – DEIR Should Include Additional Community Engagement and Relations Efforts

Comment 58C-11

In addition to stricter thresholds or limits to be applied to blasting to address human disturbance, additional community relations efforts can and should be incorporated into the Project Blasting Protocols. As stated by the U.S. Bureau of Mines (in publication RI 8507, page 68) "*good public relations attitudes and an educational program by the blaster are essential*." Clear communication and notification of blasting events can benefit an adjacent community and reduce the impact of blasting activities. The blasting Mitigation Measure 4.13-6 and related Blasting Protocols (DEIR, Appendix H-6) includes monitoring and "complaint response procedures." However, the Project should not wait until after complaints are received to implement further community engagement. Additional effective community relations efforts should be incorporated into the standard blasting protocol procedures so they are implemented prior to and during blasting and monitoring (not only after complaints are received). The following measures should be included in the DEIR:

- Revise the mitigation measure to require blasting to be scheduled at the same time of day each day that blasting occurs (i.e., on the hour at a certain hour of the day). Based on our experience, awareness of blasting has helped people to more easily tolerate blasting vibration and airblast that is noticeable.
- Revise the mitigation measure to require notification of residents within 2,000 feet at the time of blast. This could be offered as a subscription for notifications via text message or similar means.

#1.D – The DEIR Should Require Peer Review of the Blast Monitoring Results

Comment 58C-12

The blasting Mitigation Measure 4.13-6 and related Blasting Protocols (DEIR, Appendix H-6) includes monitoring requirements and mandatory reporting to the County. However, given the technical nature of the blasting protocols, it would be appropriate for blasting reports and monitoring results to be reviewed by a third party with expertise in assessing the results. This should occur at least at the early stages of blasting and when blasting within 600 feet of a sensitive receptor.

In addition, the current Blasting Protocols include monitoring only "at the closest residential/commercial property, the closest well, and at three points to the San Joaquin River embankment." This measure does not take into account potential monitoring equipment failure or faulty results. The DEIR should have required blast monitors at the two closest residential properties, not just one. Doing so would improve confidence in the measurement results to ensure that blasting related noise and vibration is minimized.

SECTION 2 – COMMENTS ON OTHER OPERATIONAL NOISE SOURCES

Comment 58C-13

#2.A – Proposed Operational Noise Mitigation is Inadequate

Impacts 4.13-2 and 4.13-3 assess increases in ambient noise levels from Plant Site and Quarry Site operations that could exceed local standards. The analysis indicates that operational noise at night is projected to exceed the thresholds of significance and the impacts without mitigation would be potentially significant (see Tables 4.13-16 and 4.13-17, DEIR pages 4.13-57 through 4.13-60).

To address these potential impacts, the related mitigation measures (4.13-2 and 4-13.3) take the approach of requiring the operator to "implement one or more of the" measures listed to reduce noise from site operations. The mitigation measure does not identify which of these optional measures is actually required or appropriate. One of those measures is noise monitoring after operations have already commenced. Therefore, only after impacts occur, complaints are received, and excessive noise levels are found through review of monitoring data would additional noise reduction measures be identified and implemented. And that process of justifying, coordinating, and implementing the additional mitigation measures could take significant time and efforts.

The "wait and see" approach taken by this mitigation measure is insufficient to fulfill the mandate of identifying significant impacts and implementing effective mitigation measures to reduce noise BEFORE the community is exposed to excessive noise. Only AFTER the Project operation is confirmed to generate excessive noise will noise reduction measures be implemented. Meanwhile, the operation continues to expose people to excessive noise during the potentially lengthy process developing further mitigation measures, conducting pricing and feasibility studies, and submitting the measures through an approval process. This noise mitigation approach is inadequate. Instead, the operational noise impact analysis must identify the specific sources or activities that are expected to generate significant construction noise and then develop specific, effective, and feasible noise reduction measures that would reduce noise to a less than significant level.

In summary, the proposed mitigation measures are inadequate as they fail to protect the community from excessive noise BEFORE it occurs. The mitigation fails to include specific measures that would be needed to reduce all potentially significant impacts.

Comment 58C-14

#2.B DEIR Does Not Demonstrate Efficacy of Operational Noise Mitigation

As mentioned in Comment #2A above, Mitigation Measures 4.13-2 and 4-13.3 take the approach of requiring the operator to "implement one or more of" a variety of measures to reduce noise from site operation. However, the DEIR provides no supporting information to demonstrate how one or more of the listed measures will actually reduce noise to a less-than-significant level. Without such effort to define the efficacy of the operational noise mitigation measures, the DEIR cannot conclude that noise would be reduced to a less-than-significant level.

#2.C Impact of Nighttime Noise is Compounded by Extended Operational Hours

Comment 58C-15

The above comments related to nighttime noise impact findings and mitigation are compounded by the fact that the Project includes extending the hours of processing operations during nighttime hours. DEIR pages 4.1-62 and 4.1-63 note that hours of operation would be revised as follows:

"Specifically, excavation as well as aggregate processing and recycling operations would be expanded from 6 p.m. to 7 p.m., and loading/unloading and aggregate trucking could occur between the hours of 4 a.m. and 9 p.m. under the proposed project, whereas under existing conditions the earliest operations begin between 4 a.m. and 6 a.m., depending on the time of year, and end at 6:00 p.m. year-round."

Extended operations before 6 a.m. and after 7 p.m. come with increased risk and potential for sleep and speech disturbance for the nearby sensitive receivers. This further emphasizes the need to provide adequate and specific noise reduction measures in Mitigation Measures 4.13-2 and 4-13.3.

#2.D – Nighttime Noise Impact and Sleep Disturbance is Not Adequately Addressed

Comment 58C-16

The conditions of this project and the community warrant an analysis of nighttime noise and the potential for sleep disturbance since operations will occur at nighttime hours (4 a.m. to 7 a.m.). The sleep disturbance study should evaluate both average and single-event maximum noise (i.e., Leq/L50 and Lmax noise levels) from processing, truck loading, and truck pass-by noise. The nighttime industrial activities could annoy residents and cause sleep disturbance. A revised EIR should identify appropriate mitigation, including specific limitations on nighttime noise and activities.

#3 NOISE AND VIBRATION IMPACT TO WILDLIFE IS NOT SUFFICIENTLY EVALUATED

Comment 58C-17

We also reviewed the comments on noise impact on wildlife in the DEIR Chapter 4.4 Biological Resources. The DEIR indicates that:

- "Ground disturbance and noise impacts from mining could disturb nesting birds located on or near the project sites." (DEIR page 4.4-49) --- and ---
- "Mining activities on the Plant Site and Quarry Site could result in potential adverse impacts to special-status species in the riparian habitat surrounding the project sites if light, noise and vibration, and the operation of heavy equipment during mining activities result in substantial disturbance." (DEIR page 4.4-52)

However, the DEIR provides very little substantive analysis regarding noise in neighboring wildlife areas that will be subject to noise from the project operations. It appears that:

1. Existing ambient noise levels were not measured or evaluated in the neighboring wildlife areas. And based on the ambient noise data presented in Chapter 4.13, we expect that such areas, that are located away from current sources of noise (e.g., roadways), would have rather low noise levels.

2. Project operational noise levels were not predicted at neighboring wildlife areas. Without such analysis, the potential noise increase has not been evaluated adequately.

3. Impact 4.4-6 discusses impact of blasting activities on fish in the San Joaquin River. A vibration limit of 2.0-inch/second is presented as a threshold of significance, and the related mitigation of limiting blasting vibration at the river to 0.5 inch/second is incorporated into the mitigation measure. However, the evaluation of blasting ground-borne vibration and "airblast" pressure goes no further. There is no analysis of blasting impact on other wildlife and riparian habitat in the nearby areas.

Comment 58C-17 Cont.

The DEIR fails to fully analyze the noise and vibration impact of the Project on wildlife. There are no noise or vibration thresholds of significance presented for wildlife (beyond fish in the San Joaquin River). Thus, the impact to wildlife is still unknown. Furthermore, there are no noise and vibration mitigation measures that control operational noise or blasting vibration, in particular, such as halting blasting during times when birds are nesting within in the nearby area where noise, vibration, and airblast could disrupt the animals.

Comment 58C-18

* * *

Should you have any questions, please call.

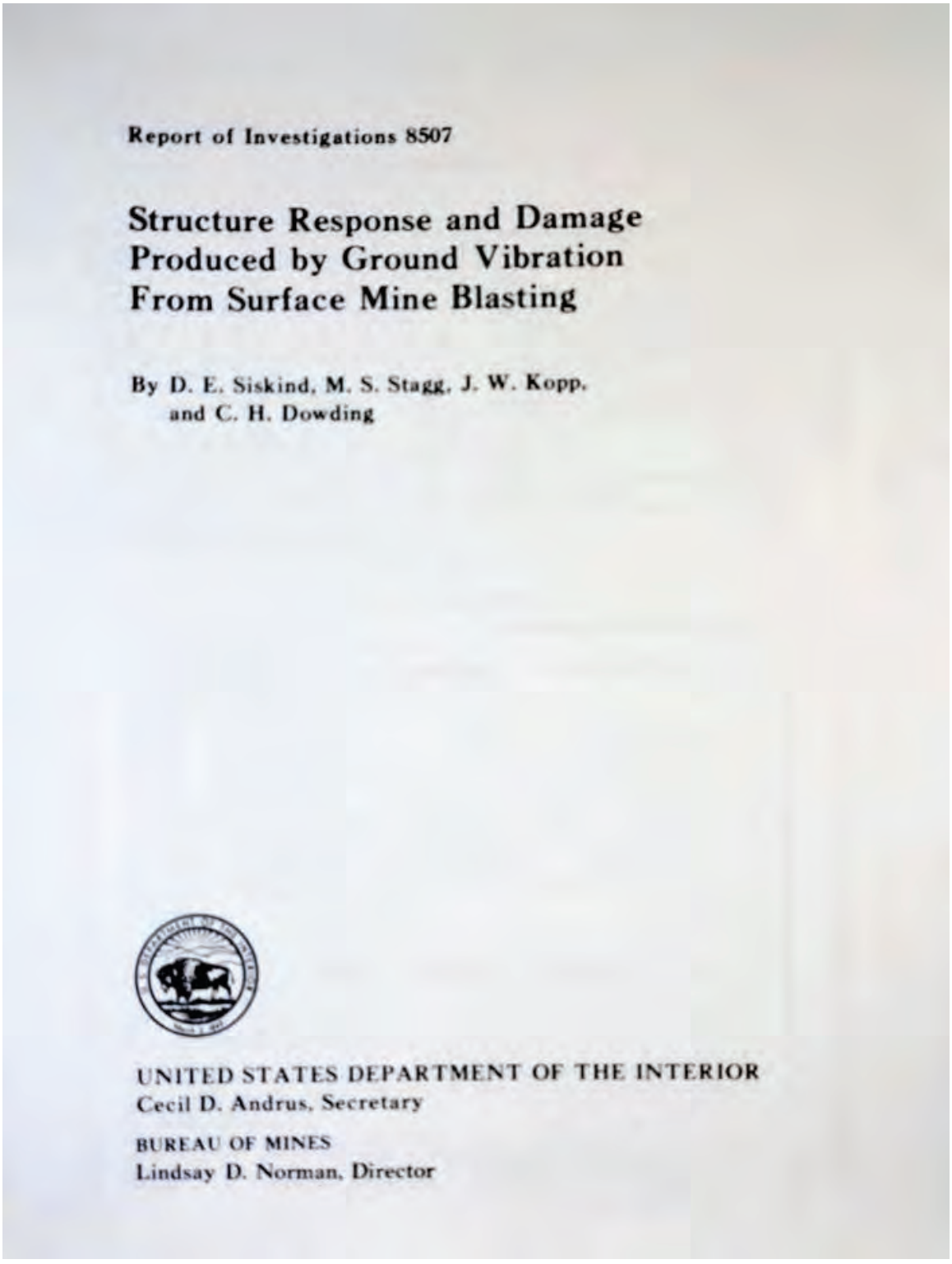
Best,

SALTER

Jeremy L. Decker, PE
Vice President

P/2025-02-19 Acoustical Review 25-0038 Cemex.docx

APPENDIX – RELEVANT EXCERPTS FROM DOCUMENTS REFERENCED ABOVE



Report of Investigations 8507

Structure Response and Damage Produced by Ground Vibration From Surface Mine Blasting

By D. E. Siskind, M. S. Stagg, J. W. Kopp, and C. H. Dowding

UNITED STATES DEPARTMENT OF THE INTERIOR
Cecil D. Andrus, Secretary

BUREAU OF MINES
Lindsay D. Norman, Director

CONCLUSIONS

The problems of blasting vibration damage to residential structures and human tolerance to vibrations have been analyzed using data from a wide variety of studies. Statistical techniques of mean and variance analysis and probability plots have both been applied to the damage data from the 10 studies and demonstrated the following:

1. Particle velocity is still the best single ground motion descriptor.

2. Particle velocity is the most practical descriptor for regulating the damage potential for a class of structures with well-defined response characteristics (e.g., single-family residences).

3. Where the operator wants to be relieved of the responsibility of instrumenting all shots, he could design for a conservative square root scale distance of 70 ft/lb$^{1/2}$. The typical vibration levels at this scaled distance would be 0.08 to 0.15 in/sec.

4. Damage potentials for low-frequency blasts (< 40 Hz) are considerably higher than those for high-frequency blasts (> 40 Hz), with the latter often produced by close-in construction and excavation blasts.

5. Home construction is also a factor in the minimum expected damage levels. Gypsumboard (Drywall) interior walls are more damage resistant than older, plaster on wood lath construction.

6. Practical safe criteria for blasts that generate low-frequency ground vibrations are 0.75 in/sec for modern gypsumboard houses and 0.50 in/sec for plaster on lath interiors. For frequencies above 40 Hz, a safe particle velocity maximum of 2.0 in/sec is recommended for all houses.

7. All homes eventually crack because of a variety of environmental stresses, including humidity and temperature changes, settlement from consolidation and variations in ground moisture, wind, and even water absorption from tree roots. Consequently, there may be no absolute minimum vibration damage threshold when the vibration (from any cause, for instance slamming a door) could in some case precipitate a crack about to occur.

8. The chance of damage from a blast generating peak particle velocities below 0.5 in/sec is not only small (5 pct for worst cases) but decreases more rapidly than the mean prediction for the entire range of vibration levels (almost asymptotically below about 0.5 in/sec).

9. Human reactions to blasting can be the limiting factor. Vibration levels can be felt that are considerably lower than those required to produce damage. Human reaction to vibration is dependent on event duration as well as level. Particle velocities of 0.5 in/sec from typical blasting (1-sec vibration) should be tolerable to about 95 pct of the people perceiving it as "distinctly perceptible". Relevant to whole-body vibration reaction is the degree that the vibration interferes with activity (sleep, speech, TV viewing, reading), presents a health hazard, and affects task proficiency. For people at home, the most serious blast vibration problems are house rattling, fright (fear of damage or injury), being startled, and for a few, activity interference. Complaints from these causes can be as high as 30 pct at 0.5 in/sec, and this is where good public relations attitudes and an educational program by the blaster are essential.

PB88-166418

BLASTING GUIDANCE MANUAL

By Michael F. Rosenthal and Gregory L. Morlock

With contributions by John L. H. Simmance,
James W. Reil, G. Alan Foster,
Thomas W. Novotny, and Dennis A. Clark

March 1987

Office of Surface Mining Reclamation and Enforcement
UNITED STATES DEPARTMENT OF THE INTERIOR

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NATIONAL TECHNICAL
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SPRINGFIELD, VA 22161

Human Subjective Tolerance

At what level are human beings able to perceive blast vibration effects? Airblast is extremely difficult to define in this way, because of the very variable audibility of any particular event. If the predominant frequency of the event is low, it could be that, say, 115 dBL might be unnoticeable, whereas if the predominant frequencies were well into the range of human hearing, this same event might be quite annoying. It is also possible that where the airblast frequencies match the natural frequencies of structures, secondary vibrations producing rattling, etc., can occur. This effect can not only increase the subjective perception of an event, but can also extend its apparent duration. Ground motion, on the other hand, while frequency dependent to a point, depends much on the sensitivity of the human subject. Most authorities agree that the threshold of human perception for blast vibration ground motion is around 0.03 inches per second. Depending on activity, sensitivity, and whether or not the subject knows when the event is to occur, a few humans can sense ground motion as low or lower than most instruments are able to: about 0.01 inch per second!

Although complaints can occur at any level perceptible to humans, they are unusual below 0.08 inches per second or so. As peak particle velocities increase and as local and individual sensitivities increase, so will the number of complaints. At, say, 0.25 inches per second, a level that is eminently safe, and well within OSMRE limits, except below 2 Hz, complaints can be expected.

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Federal Highway Administration

Publication No. FHWA-HI-92-001
Prepared in 1991

NHI Course No. 13211

Rock Blasting and Overbreak Control

National Highway Institute

10.6 SENSITIVITY TO VIBRATION

Human beings are remarkably sensitive to vibration. If this were not so, the vibration problem would scarcely exist. The explosives technology of today insures that most operations are conducted in a safe manner. In relatively few cases is there a significant probability of damage.

Since vibration is felt in practically all cases, the reaction to this sensation is one of curiosity, concern, and even fear. Hence, it is important to understand something about human response to vibration which depends on vibration levels, frequency and duration. In addition to these physical factors, it is important to keep in mind that human response is a highly subjective phenomenon.

Human response has been investigated by many researchers. One of the early investigations was by Reiher and Meister, Berlin, 1931. Other investigations were made by Goldman, 1948, and Wiss and Parmelee, 1974. A composite of these investigators' results was presented graphically in the U. S. Bureau of Mines RI 8507, Siskind, et al, 1980. This composite is represented here in Figure 10.28.

The human response curves are all similar and highly subjective in that the response is a mixture of physiological and phychological factors individual to each person. Based on these curves, a very simple and practical set of human responses can be designated as follows:

TABLE 10.10 HUMAN RESPONSE

RESPONSE	PARTICLE VELOCITY	DISPLACEMENT AT 10 Hz	DISPLACEMENT AT 40 Hz
Noticeable	0.02 in/s	0.00032 in	0.00008 in
Troublesome	0.2 in/s	0.0032 in	0.0008 in
Severe	0.7 in/s	0.011 in	0.0028 in

Vibration is a fact of daily life which one regularly experiences but is seldom aware of. This type of vibration has been designated cultural vibration. Generally, it elicits no reaction from the person affected.

Other vibration that contrasts sharply, because it is not part of the daily experience but is unusual, has been designated acultural. It surprises a person, is disturbing, and causes an acute awareness.

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AS 2187.2-2006

Explosives — Storage and use, Part 2: Use of explosives

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Committee:	CE-005
Committee members:	ADI AUSTROADS Australasian Institute of Explosives Engineers Australasian Institute of Mining and Metallurgy Australian Chamber of Commerce and Industry Department of Administrative and Information Services (S.A.) Department of Defence (Australia) Department of Infrastructure, Energy and Resources (Tas) Department of Primary Industries, NSW Department of Primary Industries (Victoria) Department of Natural Resources and Mines (Qld) Extractive Industries Association of Victoria Institute of Quarrying Australia Pyrotechnic Interests Royal Australian Chemical Institute Victorian WorkCover Authority WorkCover New South Wales

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J4 Ground vibration levels

J4.1 General

The maximum levels for ground vibration for human comfort that some authorities have chosen are set out in Paragraphs J4.2 to J4.5.

NOTE The maximum levels advised in this Appendix are designed to be informative and are not intended to override existing statutory requirements, particularly with respect to human comfort limits set by various authorities.

The methods of data analysis for these limits are also presented. In part, such analyses are a departure from that described in earlier and other Standards and the intention is to provide sufficient detail so that expert persons may implement these in hardware and/or software.

J4.2 Ground vibration

Vibration transmitted through the ground may cause damage to structures and architectural elements or discomfort to their occupants. The vibration levels at which people become annoyed are well below vibration levels at which damage occurs. The likelihood of such damage or discomfort may be ascertained by measuring the vibration from a blast close to the location of concern such as a building or other structure.

For all limits it is necessary to measure in three orthogonal directions, one in the vertical direction and the other two in perpendicular horizontal directions. Such measurements align with most structural members in man-made structures. From such measurements it is possible to derive the Vector Peak Particle Velocity (VPPV) and the Peak Component Particle Velocity for each direction (PCPV). The magnitude of the vector particle velocity (v_p) is the amplitude of the vector sum of three time-synchronised velocity components directly measured by an instrument. When not measured directly it may be determined by the following Equation:

$$v_p = \sqrt{v_x^2 + v_y^2 + v_z^2} \qquad \text{J4.2}$$

where v_x, v_y and v_z are the synchronized instantaneous velocity components of the x, y and z axes, respectively. The VPPV is the maximum of v_p.

J4.3 Human comfort limits

NOTE Statutory requirements for human comfort limits for ground vibration may apply in respective jurisdictions.

General guidance on human response to building vibrations is given in AS 2670.2 , ISO 2631-2 and BS 6472 .

J4.5 Recommended ground vibration limits

NOTE Statutory requirements for human comfort limits for ground vibration may apply in respective jurisdictions.

The maximum levels for ground vibration for human comfort, which some authorities have chosen, are provided in Table J4.5(A). Recommended limits for ground vibration for control of damage to structures are provided in Table J4.5(B).

Frequency-dependent limits have the capacity to precisely deal with the hazards presented by ground vibration and are seen as the basis for best practice blasting. The particular frequency-dependent criteria should be reported with the measurements. All the limits given in Tables J4.5(A) and J4.5(B) are peak component particle velocities, as used in overseas Standards and guidelines. The classification of type of structure may be difficult and when in doubt, a more conservative limit from the nearest description in Table J4.5(B) should be applied.

Table J4.5(A) — Ground vibration limits for human comfort chosen by some regulatory authorities (see Note to Table J4.5(B))

Category	Type of blasting operations	Peak component particle velocity (mm/s)
Sensitive site *	Operations lasting longer than 12 months or more than 20 blasts	5 mm/s for 95% blasts per year 10 mm/s maximum unless agreement is reached with the occupier that a higher limit may apply
Sensitive site *	Operations lasting for less than 12 months or less than 20 blasts	10 mm/s maximum unless agreement is reached with occupier that a higher limit may apply
Occupied non-sensitive sites, such as factories and commercial premises	All blasting	25 mm/s maximum unless agreement is reached with occupier that a higher limit may apply. For sites containing equipment sensitive to vibration, the vibration should be kept below manufacturer's specifications or levels that can be shown to adversely effect the equipment operation

* A sensitive site includes houses and low rise residential buildings, theatres, schools, and other similar buildings occupied by people.

NOTE The recommendations in Table J4.5(A) are intended to be informative and do not override statutory requirements with respect to human comfort limits set by various authorities. They should be read in conjunction with any such statutory requirements and with regard to their respective jurisdictions.

Table J4.5(B) — Recommended ground vibration limits for control of damage to structures (see Note)

Category	Type of blasting operations	Peak component particle velocity (mm/s)
Other structures or architectural elements that include masonry, plaster and plasterboard in their construction	All blasting	Frequency-dependent damage limit criteria Tables J4.4.2.1 and J4.4.4.1
Unoccupied structures of reinforced concrete or steel construction	All blasting	100 mm/s maximum unless agreement is reached with the owner that a higher limit may apply
Service structures, such as pipelines, powerlines and cables	All blasting	Limit to be determined by structural design methodology
NOTE Tables J4.5(A) and J4.5(B) do not cover high-rise buildings, buildings with long-span floors, specialist structures such as reservoirs, dams and hospitals, or buildings housing scientific equipment sensitive to vibration. These require special considerations, which may necessitate taking additional measurements on the structure itself, to detect any magnification of ground vibrations that might occur within the structure. Particular attention should be given to the response of suspended floors.		

J5 Airblast levels

J5.1 General

Airblast can cause discomfort to persons and, at high levels, damage to structures and architectural elements, and at very high levels, injury to persons.

The airblast levels at which people become annoyed are well below levels at which damage has been proven to occur. The evaluation of the effects of blasting should separate human response and structural/architectural damage effects of airblast. Of particular importance in this regard is the frequency content of the airblast. For example, an airblast that is inaudible to humans may still be responsible for structural/architectural damage effects. Conversely, an airblast level that causes human discomfort may have negligible structural/architectural damage effects. The limits set out in Paragraphs J5.2, J5.3 and J5.4 below offer a robust means for differentiating such effects and are based upon studies conducted by various workers in blasting.

The sound pressure level [*SPL* (*dBL*)] is defined as follows:

$$SPL = 10\log_{10}\left(\frac{P}{P_0}\right)^2 \qquad \text{J5.1}$$

where P is the pressure level (Pa) and P_0 is the reference pressure of 20 mPa. It is generally accepted that aural pain will occur in humans for *SPL* greater than 140 dBA for frequencies in the range 20 Hz to 20 kHz and for *SPL* between 160 dBL and 170 dBL for frequencies below 20 Hz.

General control limits currently used in Australia are not frequency dependent. It is probable that continuing research and development will result in the development of frequency-dependent limits and these should be adopted when available.

J5.2 Human comfort limits

NOTE Statutory requirements for human comfort limits for airblast may apply in respective jurisdictions.

Human comfort limits for airblast are linked to the annoyance produced. Several factors contribute to annoyance by impulsive sounds such as airblast. These include the loudness, duration and number of events plus the time of day and the nature of the disturbance.

J5.4 Recommended airblast limits

Airblast limits for human comfort chosen by some regulatory authorities are provided in Table J5.4(A). Recommended damage control limits are given in Table 5.4(B). All the limits are expressed as peak linear sound pressure levels. The classification of type of structure may be difficult and, when in doubt, a more conservative limit from the nearest description in Table J5.4(B) should be applied.

Table J5.4(A) — Airblast limits for human comfort chosen by some regulatory authorities (see Note to Table J5.4(B))

Category	Type of blasting operations	Peak sound pressure level (dBL)
Human comfort limits		
Sensitive site *	Operations lasting longer than 12 months or more than 20 blasts	115 dBL for 95% blasts per year. 120 dBL maximum unless agreement is reached with occupier that a higher limit may apply
Sensitive site *	Operations lasting for less than 12 months or less than 20 blasts	120 dBL mm/s for 95% blasts. 125 dBL maximum unless agreement is reached with occupier that a higher limit may apply
Occupied non-sensitive sites, such as factories and commercial premises	All blasting	125 dBL maximum unless agreement is reached with the occupier that a higher limit may apply. For sites containing equipment sensitive to vibration, the vibration should be kept below manufacturer's specifications or levels that can be shown to adversely effect the equipment operation
* A sensitive site includes houses and low rise residential buildings, hospitals, theatres, schools, etc., occupied by people.		

Table J5.4(B) — Recommended airblast limits for damage control (see Note)

Category	Type of blasting operations	Peak sound pressure level (dBL)
Damage control limits		
Structures that include masonry, plaster and plasterboard in their construction and also unoccupied structures of reinforced concrete or steel construction	All blasting	133 dBL maximum unless agreement is reached with the owner that a higher limit may apply
Service structures, such as pipelines, powerlines and cables located above the ground	All blasting	Limit to be determined by structural design methodology

NOTE Tables J5.4(A) and J5.4(B) are intended to be informative and do not override statutory requirements, particularly with respect to human comfort limits set by various authorities. They should be read in conjunction with any such statutory requirements and with regard to their respective jurisdictions.

RESUME

Jeremy Decker, PE

Vice President

Mr. Decker has been an acoustical consultant with Salter since 2005. His areas of expertise include environmental noise studies (of several types), municipal master planning and noise control policies, acoustical monitoring, architectural acoustics, machinery and mechanical system noise reduction, and vibration analyses. He has consulting experience in the development and peer review of environmental noise impact analyses for public, industrial, and other commercial projects.

Project Experience

- Idaho-Maryland Gold Mine DEIR Peer Review, Nevada County, CA
- Southern California International Gateway FEIR Peer Review, Long Beach, CA
- Kern County Oil & Gas DEIR/FEIR/SEIR Peer Review, Kern County, CA
- Cottonwood Sand Mine DEIR Peer Review, San Diego, CA
- Bay Delta Conservation Plan/California WaterFix FEIR Peer Review, CA
- Redondo Beach Power Plant Noise Impact Peer Review, Redondo Beach, CA
- Caldecott Tunnel 4th Bore Noise Impact Study, East Bay Area, CA
- Kaneohe/Kailua Sewer Tunnel Construction Noise Study, Kailua, HI
- Warner Ranch DEIR Peer Review, San Diego County, CA
- San Francisco Fire Dept. Water Supply Facility, San Francisco, CA
- FedEx Distribution Center Noise Impact Studies, Various Cities, CA, AZ, TN
- NRG Cogeneration Facility Noise Impact Study, San Francisco, CA
- Kaiser Permanente Construction Noise Study, Oakland, CA
- Mammoth Ice Rink EIR Peer Review, Mammoth Lakes, CA
- Fivepoint Amphitheater Noise Impact Study, Irvine, CA
- Related Santa Clara Noise and Vibration Studies, Santa Clara, CA
- Saltworks Site EIR, Redwood City, CA
- Egbert Data Center EIR, San Francisco, CA
- Fresno General Plan Update and EIR, Fresno, CA
- Daly City General Plan Update and EIR, Daly City, CA

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Professional Affiliation

Allied Member of AIA San Francisco

Acoustical Society of America

Institute of Noise Control Engineering

EXHIBIT D

AMERICAN RIVERS

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California

San Joaquin River

San Joaquin River | Mike Davis

Most people think of agriculture when they think of the San Joaquin River. They don't consider king salmon swimming upstream through cool waters to spawn on the high slopes of the southern Sierra Nevada, or vast wetlands supporting millions of waterfowl and even elk herds. But they should.

The hardest working river in California originates from headwaters that include Yosemite and Kings Canyon National Parks and the Ansel Adams Wilderness. Principal tributaries like the Tuolumne and Merced provide inspiring reminders of what the 366-mile river coursing through the fertile San Joaquin Valley south of Sacramento once offered, and may yet offer again.

The river meets the other half of the state's largest watershed at the Sacramento-San Joaquin Delta where the combined rivers flow west through the Carquinez Strait into San Francisco Bay.

An abundance of wildlife depends on this river, including a significant portion of the Pacific salmon fishery that once flocked upstream by the millions. The breadth of the watershed supports a recreation industry that generates billions of dollars in economic activity and includes world-class whitewater paddling, salmon and trout fishing, and waterfowl hunting.

They also support some of the most productive and profitable agriculture in the world, irrigating more than two million acres of arid land. The rivers generate enough hydropower for more than 4 million homes, and provide drinking water to over 25 million people, including the cities of San Francisco and Los Angeles.

Did You know?

+

Before agricultural development of its valley, the San Joaquin was navigable by steamboats as far upstream as Fresno.

At 31,800 square miles, the San Joaquin watershed is the largest single river basin entirely in California, comparable in size to the Upper Peninsula of Michigan.

The Sacramento, when combined with the Pit, is one of the longest rivers in the United States entirely within one state. Only the Kuskokwim in Alaska and the Trinity in Texas are longer.

Groundwater withdrawal has led to land subsidence of more than 28 feet in the San Joaquin Valley near Mendota.

The Sacramento supports nearly 60 species of fish and 218 types of birds. Native bird populations on the river have declined steadily since the 19th century.

San Joaquin River watershed, including the Tulare Basin

The Backstory

Humans have not treated these rivers well through the years. More than a century of managing them for agriculture, hydropower, and flood control has taken its toll. The health of the San Joaquin River has suffered the impacts of hundreds of dams, levees stretching thousands of miles, and countless water diversions. More than 95 percent of floodplain and freshwater tidal marsh habitat has been converted to development or agriculture. Once-iconic salmon runs teeter on the brink of extinction.

The problems are so acute that American Rivers named the San Joaquin River one of America's Most Endangered Rivers® in 2014. In 2016, it rose to the No. 2 position on the list.

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Man’s manipulation has severely hurt river habitat and opportunities for recreation and community access. More than 100 miles of the San Joaquin’s main stem have been dry for over 50 years, and water diversions along the tributaries take more than 70 percent of the natural flow. Before irrigation development, the river and its tributaries once supported the third-largest run of Pacific salmon in California, measuring more than 200,000. Today, the few remaining fish have nowhere to go.

People are at risk as well. Outdated approaches to water management have made communities vulnerable to increasingly frequent and severe droughts and floods.

The Future

There is hope on the horizon, however. California has never experienced a greater opportunity to address these threats and American Rivers is already hard at work.

There are many reasons for optimism. Voters recently passed a $7 billion “Water Bond” designed to jumpstart critical improvements to fisheries, habitat, flood safety, and water quality. The State Water Board is developing a new plan to meet water quality standards and protect the public values provided by the San Joaquin, Sacramento, and Delta watershed. More than two dozen dams must get new operating licenses that better protect rivers, native fish and water quality. The Central Valley Flood Protection Plan will be updated in 2017.

All that adds up to more water in the rivers. The Water Board must act this year to increase flows in the San Joaquin so that the watershed is healthy enough to support fish and wildlife, sustainable agriculture, and resilient communities for generations to come. In order to comply with state and federal laws, the Board must require dam owners to release more water to the river in a manner that mimics the natural flow regime.

Meanwhile, American Rivers has embarked on multi-benefit projects on the San Joaquin designed to enhance flood safety and restore salmon-rearing habitat by reconnecting the floodplain. Projects designed to improve water quality, increase water quantity, and improve quality of life by establishing the river as a more vibrant community asset are also underway.

While drought and climate change are affecting water patterns, they are also teaching Californians to adapt, improve groundwater storage and figure out ways to make a finite resource stretch farther. The San Joaquin River and the communities that depend on them are currently being acted upon by a confluence of forces that will create opportunities for historic success, or epic failure.

UPPER REACHES OF THE SAN JOAQUIN RIVER, CALIFORNIA | JC OOKFISHER, WIKIMEDIA

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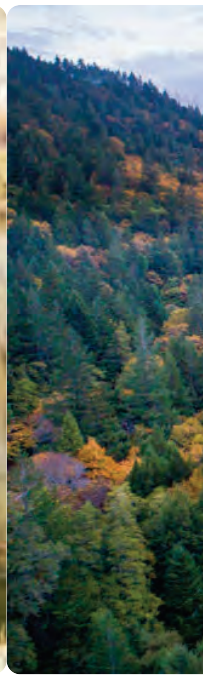
Explore the rivers of the California



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SAN JOAQUIN RIVER
RESTORATION PROGRAM

ANNUAL REPORT 2007

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Introduction

This is the first Annual Report prepared by the San Joaquin River Restoration Program (SJRRP), describing Program activities and accomplishments during Fiscal Year (FY) 2007, and planned activities for FY 2008. The SJRRP was established upon court acceptance of a Stipulation of Settlement among three Settling Parties in October 2006 regarding restoration of the San Joaquin River, in the Central Valley of California. During FY 2007, many organization and management actions were completed to begin forming a long-term structure for the SJRRP. These include preparation of a Program Management Plan, establishment of dedicated technical work groups comprised of implementing agencies, a structured process for coordination with the Settling Parties, a comprehensive public involvement and outreach program, and a process for preparation of technical documents that will be available to the public during the preparation of the Programmatic Environmental Impact Statement/Report (PEIS/R).

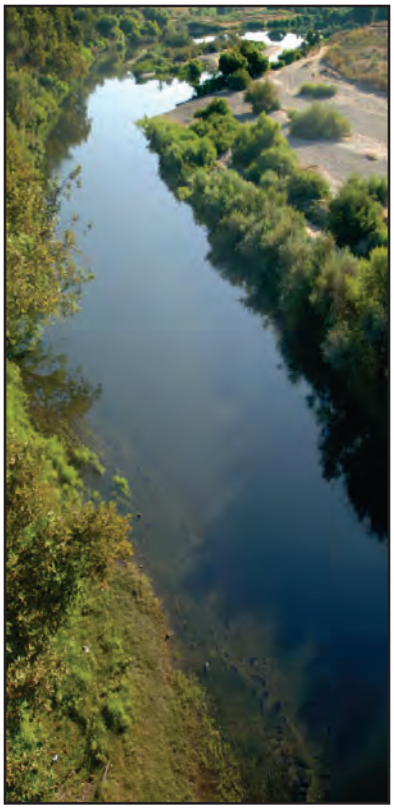
The Settlement

In 1988, a coalition of environmental groups, led by the Natural Resources Defense Council (NRDC), filed a lawsuit challenging the renewal of the long-term water service contracts between the United States and the Central Valley Project (CVP) Friant Division contractors. After more than 18 years of litigation of this lawsuit, known as *NRDC, et al., v. Kirk Rodgers, et al.,* a Stipulation of Settlement (Settlement) was reached. On September 13, 2006, the Settling Parties reached agreement on the terms and conditions of the Settlement, which was subsequently approved by the Court on October 23, 2006. The "Settling Parties" include the NRDC, Friant Water Users Authority (FWUA), and the U.S.

Former Reclamation Mid-Pacific Regional Director Kirk Rodgers speaks at a September 2006 press conference announcing an historic Settlement reached to restore flows in the San Joaquin River.

Departments of the Interior and Commerce.
The Settlement's two primary goals are:

- Restoration Goal – To restore and maintain fish populations in "good condition" in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish.
- Water Management Goal – To reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows provided for in the Settlement.


San Joaquin River

Settlement Implementation

The Settlement states that the Secretary of the Interior will implement the terms and conditions of the Settlement. Additionally, the Settling Parties agreed that implementation of the Settlement will also require participation of the State of California (State). Therefore, concurrent with the execution of the Settlement, the Settling Parties entered into a Memorandum of Understanding (MOU) with the State of California (by and through the California Resources Agency, the Department of Water Resources (DWR), the Department of Fish and Game (DFG), and the California Environmental Protection Agency) regarding the State's role in the implementation of the Settlement.

The program established to implement the Settlement is the San Joaquin River Restoration Program (SJRRP), and the "Implementing Agencies" responsible for the management of the Program include the Bureau of Reclamation (Reclamation), United States Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), DWR, and DFG.

Authorization and Initial Funding

The SJRRP is currently authorized under the Central Valley Project Improvement Act (CVPIA). Signed in 1992, this act included provisions for the potential restoration of the San Joaquin River and instituted a fee structure for Friant Division contractors for such activities. Interim Federal funding obligated for the SJRRP through Fiscal Year 2007 was approximately $3 million and an additional $6.5 million has been allocated for FY 2008. Additional funding and amended authorization is pending passage of Federal legislation that would approve terms and conditions of the Settlement.

San Joaquin River Restoration Area

The geographic area for the SJRRP includes California's Central Valley from the Sacramento-San Joaquin Delta (Delta) to the base of the Tehachapi Mountains south of Bakersfield. This area includes the San Joaquin River from Friant Dam to the Delta, the Friant Division of the Central Valley Project (CVP), other water service areas potentially affected by changes in water deliveries or restoration of the San Joaquin River, and tributaries to the San Joaquin River downstream of the river restoration area. The river restoration area is 153 miles long and reaches from Friant Dam to the confluence of the Merced River. This stretch of river crosses the counties of Fresno, Madera and Merced. For the purposes of the Program, the river has been divided into five primary reaches (see Figure 1). The Program will also evaluate a section of the Eastside Bypass as a potential alternative to the river for carrying restoration flows.

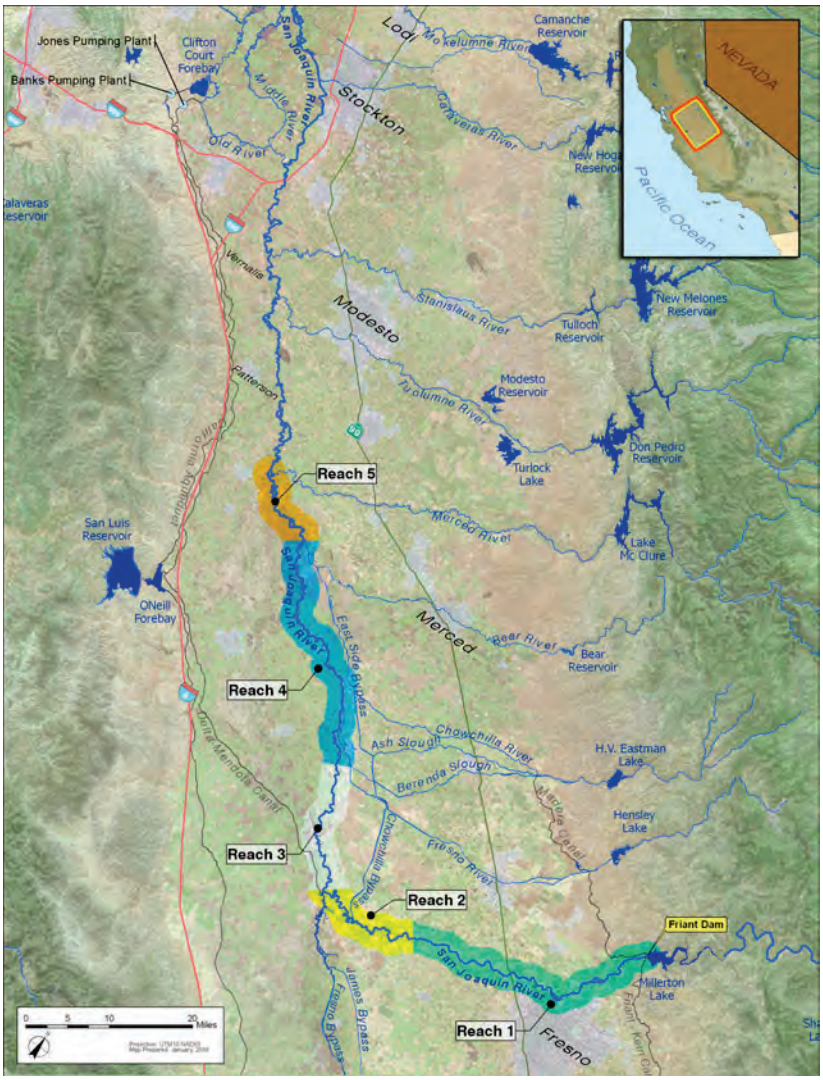


Figure 1- Map of Restoration Area

Reaches of the San Joaquin River under evaluation include:

- Reach 1 – Friant Dam to Gravelly Ford
- Reach 2 – Gravelly Ford to Mendota Dam
- Reach 3 – Mendota Dam to Sack Dam
- Reach 4 – Sack Dam to the confluence of Bear Creek and the Eastside Bypass
- Reach 5 – Eastside Bypass/Bear Creek confluence to the Merced River confluence

2006-2007: Progress and Accomplishments

During FY 2007, many organization and management actions were completed to begin forming a long-term structure for the SJRRP. These began with development of a Program Management Structure for the coordinated involvement of five implementing agencies, coordination with Settling Parties and involvement of third parties. Additional actions completed include: preparation of a Program Management Plan (PMP); establishment of dedicated technical work groups comprised of implementing agencies; a structured process for coordination with the Settling Parties; a comprehensive public involvement and outreach program; and a process for preparation of technical documents that will be available to the public during the preparation of the Programmatic Environmental Impact Statement/Report (PEIS/R).

Program Management Structure

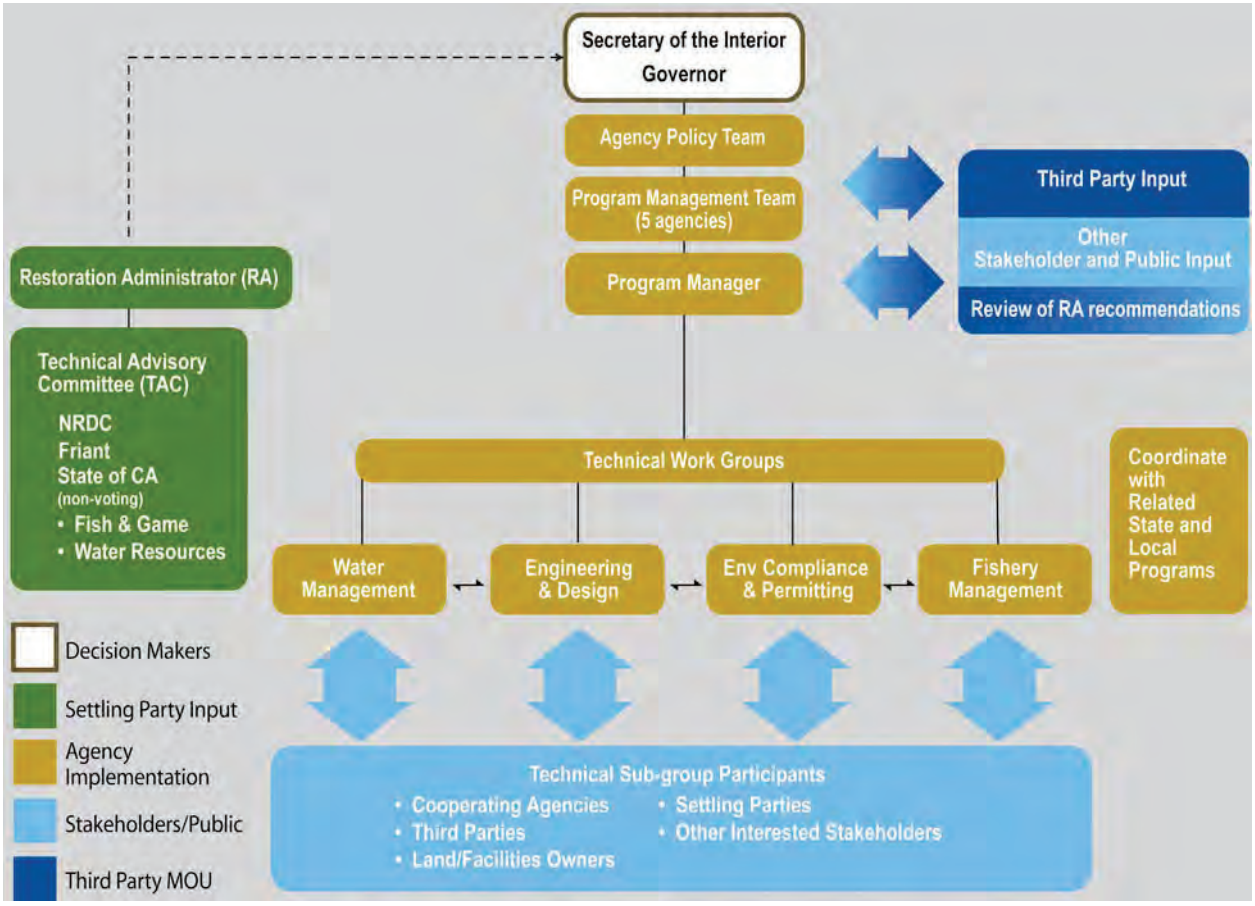


Figure 2 – Program Organizational Chart

The Settlement included clear commitments that the Settling Parties and Third Parties would be involved in the development of implementation plans by the Secretary. Court approval of the Settlement initiated a series of actions that resulted in a program approach structured to provide for effective oversight, management and transparency of the SJRRP. Key among these actions was the development of Memoranda of Understanding (MOU) with the State of California and Third Party Stakeholders.

- State of California MOU – Signed at the same time as the Settlement, this MOU recognizes that the State of California, through DFG, DWR, the Resources Agency, and CalEPA, will play a major, collaborative role in the planning, design, funding, and implementation of the actions on the San Joaquin River called for by the Settlement; and

- Third Party Stakeholders MOU – Signed in February 2007, this MOU recognizes that specific Third Parties will play a collaborative role in the planning, design, implementation, and potential adaptation of the actions on the San Joaquin River called for by the Settlement and in the draft implementing legislation.

The Program Organizational Chart (see Figure 2) reflects the provisions of the Settlement and subsequent MOUs through the following key features:

- **San Joaquin River Restoration Program Team**
  The SJRRP Team is a multi-tiered group that includes staff from the Implementing Agencies, each supplemented with technical resources available through a multi-disciplinary consultant team. Roles and responsibilities of this group include:

  - Program Management Team – Includes executives from the Implementing Agencies and is responsible for overall direction and coordination of the SJRRP;

  - Program Manager – Reclamation assigned a full-time Program Manager in November 2007 to provide direction and management of the Technical Work Groups (TWG) and to serve as chair of the Program Management Team; and

SJRRP Program Manager Jason Phillips speaks at a public meeting.

- Technical Work Groups - The SJRRP features four primary Technical Work Groups (TWGs), each supported by various subject-matter specific sub-groups, as described later in this report.

  The four TWGs are:
  - Water Management,
  - Engineering & Design,
  - Environmental Compliance & Permitting
  - Fisheries Management

Program Management Team

Bureau of Reclamation (U.S. Department of the Interior)
Jason Phillips, SJRRP Program Manager
2800 Cottage Way
Sacramento, CA 95825-1898
916-978-5033
jphillips@mp.usbr.gov

U.S. Fish & Wildlife Service (U.S. Department of the Interior)
Dan Castleberry, Fisheries Program Manager
California and Nevada Operations Office
2800 Cottage Way, Suite W2606
Sacramento, CA 95825-1846
916-978-6178
dan_castleberry@fws.gov

NOAA Fisheries Service (U.S. Department of Commerce)
Vacant
650 Capital Mall, Suite 8-300
Sacramento, CA 95814
916-930-3615

California Department of Water Resources
Paula Landis, San Joaquin District Chief
3374 East Shields Avenue
Fresno, CA 93726
559-230-3310
plandis@water.ca.gov

California Department of Fish and Game
Dale Mitchell, Environmental Program Manager
1234 East Shaw Avenue
Fresno, CA 93710
559-243-4005 ext. 156
dfmitchell@dfg.ca.gov

- **Restoration Administrator and Technical Advisory Commitee**
  The Settlement specified the roles and responsibilities for a Restoration Administrator which is supported by a Technical Advisory Committee. The SJRRP management structure integrates these resources to obtain timely input on technical issues related to the Restoration Goal.

  - Restoration Administrator – The Restoration Administrator (RA), selected jointly by the NRDC and FWUA, provides recommendations to the Secretary of the Interior and the Governor of California regarding specific elements of the Settlement and certain issues related to the SJRRP's Restoration Goal and consults with the Technical Advisory Committee; and

  - Technical Advisory Committee – The Technical Advisory Committee (TAC) features six voting members selected by and representing FWUA and NRDC. Voting members of the TAC assist and advise the RA regarding areas outlined in the Settlement, have relevant technical or scientific background or expertise in fields related to river restoration or fishery restoration, and serve for 3 years. There are two non-voting members of the TAC representing the State (DWR and DFG) and three Federal agency liaisons(Reclamation, NMFS, USFWS) to the RA and TAC to ensure coordination and information-sharing with the Implementing Agencies.

- **Third Party Stakeholders**
  Third parties are or represent some of the entities or individuals located in the San Joaquin River Basin that are not directly involved in the Settlement, but could be affected by its implementation. These include landowners adjacent to the San Joaquin River and Eastside Bypass, water rights holders on downstream tributaries to the San Joaquin River, and other CVP water users that rely on water conveyed from the Sacramento-San Joaquin Delta.

Restoration Administrator and TAC

Restoration Administrator

Ane Deister
as of January 1, 2008

Rod Meade
through December 31, 2007

Technical Advisory Committee

Monty Schmidt
Senior Water Resources Scientist
NRDC

Bill Luce
Consulting Resources Manager
Friant Water Users Authority

Scott McBain
McBain and Trush

Chuck Hanson
Hanson Environmental

Peter Moyle
University of California, Davis

Vacant position

Third Party MOU Signators

Entities Along the San Joaquin River

San Joaquin River Exchange Contractors Water Authority

Central California Irrigation District

Firebaugh Canal Water District

San Luis Canal Company

Columbia Canal Company

San Joaquin River Resource Management Coaliton

Downstream Tributary Water Users

Merced Irrigation District

Turlock Irrigation District

Modesto Irrigation District

San Joaquin Irrigation District

San Joaquin Tributaries Association

Other CVP Water Users

Westlands Water District

San Luis & Delta-Mendota Water Authority

- **Technical Work Groups**
  Technical Work Groups (TWGs) of the SJRRP and their related sub-groups guide development of the PEIS/R to address SJRRP actions. Listed below is a synopsis of each TWG area of responsibility.

- **Engineering and Design Work Group**

This TWG is responsible for preliminary engineering and design of structures and flow channels needed to meet Restoration and Water Management Goals of the Settlement. Through coordination with other TWGs, the Engineering and Design Work Group will estimate the costs of structures and flow channels for inclusion in the PEIS/R.

- **Environmental Compliance and Permitting Work Group**

This TWG plans and coordinates efforts to implement elements of the Settlement in relation to environmental studies, permits, alternative formulation, and other requirements necessary for actions needed to meet the Restoration and Water Management Goals. The Environmental Compliance and Permitting Work Group will analyze alternatives, assess their effectiveness, develop alternative descriptions, and prepare the PEIS/R.

- **Water Management Work Group**

Working in collaboration with all TWGs, the Water Management Work Group addresses water operations for accomplishing the Restoration and Water Management Goals. To support the Restoration Goal, the Water Management Work Group is developing guidelines for implementing the Restoration Flow. This includes formalization of year-type classification, development fo a continuous line hydrograph as anticipated in the Settlement, procedures and methods for incorporating hydrologic uncertainties in operation, flow and seepage monitoring, and accounting.

In support of the Water Management Goal, the Water Management Work Group is developing a plan for the recirculation, recapture, reuse, exchange or transfer of the Interim Flows and Restoration Flows to reduce or avoid impacts to Friant Division long-term contractors. In addition, the Work Group is developing recommendations for administering a Recovered Water Account to provide water pricing incentives for facilitating

* Graphical representation of Technical Work Groups designed by Chang-yi Julien Sun, 6 years old.

additional regional water management actions to further reduce the impacts to Friant Division long-term contractors. This will include features that retain, acquire, or perfect all rights to manage and control these flows, to the extent permitted by applicable law.

- **Fisheries Work Group**

The Fisheries Management Work Group is responsible for planning and coordination efforts to implement the sections in the Settlement related to meeting the Restoration Goal. Activities include: 1) developing a Fisheries Management Plan designed to provide a roadmap to adaptively manage efforts to restore and maintain naturally reproducing and self-sustaining populations of salmon and other fish in the San Joaquin River below Friant Dam to the confluence of the Merced River; 2) providing information for the permitting process and documentation specific to Paragraph 14 of the Settlement; and 3) recommending and coordinating all fisheries related planning, modeling, or research and monitoring necessary to inform efforts of the Water Management, Engineering and Design, and Environmental Compliance and Permitting Work Groups supporting implementation of the Restoration Goal and the Water Management Goal. The Fisheries Management Work Group is composed of implementing agency staff and consultant team members.

Fisheries Management Work Group Meeting

Program Management Plan

In May 2007, a Program Management Plan (PMP) was completed that provides a framework and strategy that the Implementing Agencies have committed to use in collaboratively and adaptively implementing the Program. The PMP provides an overview of the entire Program schedule, from initial planning through all construction-related activities identified in the Settlement, and the Restoration Flow period. In addition to the Program Management Structure and Technical Workgroup responsibilities described above, the PMP provides a work plan for preparation of the Program EIS/EIR, with detailed descriptions of anticipated technical tasks, intermediate milestones, and public documents. In addition, the PMP describes the relationship of Program-level planning and permitting to site- and project- specific implementation actions – many that will need to initiate planning while the PEIS/R is still being prepared.

Public Outreach and Involvement

Public involvement and outreach opportunities have been integrated into the SJRRP. Guided by a Public Involvement Plan (PIP), these activities seek to create an open and visible process through which the general public, stakeholders, affected Third Parties, and other interested parties can keep track of Program activities and progress and participate in the identification of Program issues and formulation of alternatives.

Components of the PIP that were accomplished in 2007 include:

- A Program contact list of individuals, organizations, and public agencies who want to receive notifications of Program activities;
- Public workshops, co-sponsored with local organization early in the process to present the PMP and the PIP;
- Public scoping meetings to share information and receive official public comment;
- A publicly accessible, Program-specific website that offers timely information and updates, a document repository that includes Technical Memoranda, a calendar of events, and contact information: **www.restoresjr.net;**
- Multiple avenues for interested parties with technical expertise to interface with SJRRP team members to share information;
- News releases, Fact Sheets and Program Updates.

Reclamation engineer Alan Stroppini talks with a participant about a specific area along the river at the Tulare public scoping meeting.

- **Public Scoping**

Public scoping is an early and open process for determining the scope of issues to be addressed and significant issues to be analyzed in depth in a Program Environmental Impact Statement/ Report (PEIS/R). The PEIS/R is being prepared in compliance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

Firebaugh City Manager Jose Ramirez talks with SJRRP team members Paula Landis, Jason Phillips, and Bill Luce during a public scoping meeting.

Reclamation initiated the NEPA process by issuing a Notice of Intent (NOI) to prepare environmental impact documents and hold public scoping meetings on August 2, 2007. DWR initiated the CEQA process by issuing a Notice of Preparation (NOP) on August 22, 2007. Parties are provided 30 days from the date of receiving the NOP to comment on the Program. The technical review period of the NOP was from August 24 to September 24, 2007. The SJRRP scoping comment period lasted from the issuance date of the NOI until September 21, 2007. Reclamation and DWR received comments from 85 people and organizations including Federal and State agencies, local interest groups, local residents, farmers, landowners, environmental groups, public advocacy groups, Native American community groups, and individuals.

Reclamation and DWR informed groups and individuals about the scoping meetings through a variety of methods:

- Posting the NOI in the Federal Register and the NOP in the State Clearinghouse;
- Paid advertisements in the main sections of the numerous newspapers in the Program area;
- Distribution of a press release to Reclamation's media lists for the Sacramento and San Joaquin areas, which includes all major newspapers, as well as Farm Bureau publications for the counties of San Joaquin, Stanislaus, Merced, Madera, Mariposa, Fresno, Tulare, Kings and Kern, and which also included the California Farm Bureau Federation's *"Ag Alert"* weekly newspaper, the *California Farmer* and the *Capitol Press*;

- Post card notice with details for each of the scoping meetings mailed to the mailing list of approximately 3,800 agencies, organizations, and individuals that have shown interest on the SJRRP or other similar projects in the Program region; and

- Information regarding the scoping meetings on the public web site – **www.restoresjr.net**

In addition to the above outreach, letters were sent to various groups and phone calls were placed to Federal and State elected officials whose districts are within or close to the project area to invite them to the scoping meetings and encourage their members to attend and voice their thoughts and concerns about the SJRRP.

A Public Scoping document with all comments received during the Scoping process was made available to the public in December 2007.

- **Technical Memoranda**
  Numerous Technical Memoranda (TMs) are being developed prior to scheduled release of the SJRRP Draft PEIS/R in February 2009. These TMs are being made available on the Program web site **(www.restoresjr.net)** as they are completed to facilitate early coordination with the Settling Parties, Third Parties, other stakeholders, and interested members of the public regarding initial concepts and approaches under consideration at the time by the Program Team. While the Program Team does not request formal comments on the TMs, all comments received will be considered in refining the concepts and approaches in the TMs to the extent possible during the formation of the Draft PEIS/R.

- **Field Tours**
  A variety of field tours were held in 2007 for the SJRRP. These included:

  - Informational tours for staff of State and Federal legislators were held in the spring. Hosted by Reclamation, these tours were coordinated with FWUA and the San Joaquin River Resource Management Coalition (RMC);

  - Reconnaissance-level tours for Implementing Agency staff and consultant teams were held in the summer to provide an introductory overview of the various river reaches and

SJRRP team members canoed along the river to better understand invasive species challenges.

features. These tours were coordinated by Reclamation in cooperation with FWUA and the RMC; and

- Work Group tours included a one-day survey of invasive plant species and former rock quarries present along Reach 1 of the San Joaquin River. This tour was attended by members of the PMT and the TWGs.

Reclamation Real Estate Specialist Julie Bowen talks with a landowner at a public meeting in Fresno.

- **Landowner Coordination and Outreach**

The vast majority of the San Joaquin River slated for restoration is lined with private property. For example, a preliminary evaluation of private property ownership along a 2,000-foot corridor from Friant Dam to the confluence of the Merced River, and a portion of the Eastside Bypass, revealed more than 1,200 unique property owners, many of which also own the land beneath levees along the San Joaquin River.

SJRRP Landowner Coordinater Craig Moyle welcomes participants to a public landowner meeting.

To engage and gain access to private property for the SJRRP, a Landowner Coordinator has been designated for the Program. This person serves as the primary point of contact for affected landowners and manages distribution, collection, and archival of Temporary Entry Permits (TEP) signed by private property owners. The Landowner Coordinator serves as technical resource to the TWGs for all field activities, notifies landowners of pending field activities, and attends regular meetings of the Resource Management Coalition (RMC).

Developed in close coordination with the RMC, the TEP is a blanket temporary entry request for pre-construction surveys and investigations in support of the SJRRP. The TEP provides, in part, comprehensive liability protection for private property owners while SJRRP representatives are in the field. Public landowner meetings to discuss the TEP and related topics were held during December in Fresno, Firebaugh and Los Banos. Once the TEP is finalized, distribution to landowners will begin.

2008: Future Program Activities

The proposed actions in the Settlement outline how the implementing agencies will achieve the Restoration and Water Management Goals. As part of the Settlement, the Settling Parties developed a detailed timeline for developing and implementing Program improvements.

Schedule and Milestones
The following information highlights upcoming significant milestones in the three stages of the SJRRP.

Stage 1
Stage 1 focuses on program-level planning and environmental review, including formulating and evaluating reasonable alternatives for accomplishing the Restoration and Water Management Goals with a focus on system-wide aspects of implementation. Stage 1 has been initiated and includes the development of a PEIS/R and the identification of significant data needs that will be completed during Stage 2.

Stage 2
Stage 2 commences in October 2009 with the release of Interim Flows and will conclude in December 2013 with the completion of Phase 1 improvements and agreement on operational guidelines. During Stage 2, an Interim Flows program will be implemented to support relevant data collection concerning flows, temperatures, fish needs, seepage losses, recirculation, recapture, and reuse. Stage 2 also includes the reintroduction of spring-run and fall-run Chinook salmon and the implementation of all Phase 1 channel improvements.

Stage 3
The primary activities in Stage 3 include the release of full Restoration Flows from Friant Dam, continued implementation of the Fisheries Management Plan, construction of the remaining Program features that were not Phase 1 priority, and the operation and maintenance of project facilities. The full Restoration Flows shall commence no later than January 1, 2014. Stage 3 will conclude once all activities called for in the Settlement are completed; however, on-going operations and maintenance of facilities and structures will continue indefinitely.

Significant Milestones Timeline

Stage 1 — Pre-Flow Program Planning

2008

May	Initial Programs Alternatives Report
October	Program Alternatives Report
December	Fisheries Management Plan

2009

March	Draft PEIS/R
July	Final PEIS/R
September	ROD/NOD

Stage 2 — Interim Flows, Project Construction, and Salmon Introduction

2009

October	Initiate Interim Flows and Monitoring Program

2012

December	Reintroduce Chinook salmon

2013

December	Complete all Phase 1 priority construction activities

2014

June	Complete Final Interim Flow Study Report

Stage 3 — Full Restoration Flows and Continued Operations

Annual

Restoration Flow Release Schedules

Restoration Goal Progress Reports

Recovered Water Account Progress Reports

Restoration Flow Monitoring Reports

Planned Outreach and Coordination

The SJRRP Team will maintain and build upon the various outreach and coordination activities of 2007. Additional planned activities include weekly coordination meetings with the Restoration Administrator and monthly meetings with the Settling Parties.

Other features include appointment of a Technical Stakeholder Coordinator for the TWGs. This individual will provide outreach support between the TWGs and various stakeholder groups interested in documents developed for use in the eventual Draft PEIS/R. Similar to the TMs, the TWGs will not request formal approval of these documents, but will consider comments to the extent possible during refinement of the concepts and approaches under discussion.

Program Costs and Funding

- **Costs**

  During the Settlement negotiations, several estimates were prepared for implementing the actions described in Paragraph 11 of the Settlement. These estimates ranged between $250 million and $800 million. Early in Stage 1, a more comprehensive assessment of the actions necessary and the related costs will be completed by the Implementing Agencies.

  Once authorized, the Settlement establishes the San Joaquin River Restoration Fund (Fund). Approximately $17 million per year of payments from the Central Valley Project Friant Division would be deposited into the Fund to be available without further appropriations to implement the provisions of the Settlement.

  Funding by the State of California will also support the Settlement. In November 2006, State propositions 84 and 13 were passed by the California voters and should provide about $200 million of State bond funds for projects that will directly contribute to the restoration efforts.

- **Funding**
  Funding for the SJRRP during FY07 and FY08 is provided by the Federal government and the State of California, as summarized below. These funds are used to support Program management and studies for preparation of the Program EIS/R.

Annual Budget

Source	FY 2006/2007	FY 2007/2008
FEDERAL FUNDS		
Reclamation		
Central Valley Project Improvement Act	$3,000,000	$6,500,000*
San Joaquin River Restoration Fund**	0	0
National Marine Fisheries Service		
Protected Resources - salmon	$137,000	0
Federal Sub-total	**$3,137,000**	**$6,500,000**
STATE FUNDS		
Dept. of Water Resources		
Proposition 13	$1,000,000	$2,250,000
Proposition 84	0	$4,250,000
Dept. of Fish and Game		
Proposition 13	$740,000	$2,120,000
Proposition 84	0	$1,200,000
State Sub-total	**$1,740,000**	**$9,820,000**
Total	**$4,877,000**	**$16,320,000**

*Includes funding for FWS and NMFS participation.

**This fund would be authorized under the San Joaquin River Restoration Act, currently House Resolution 4074.

Status of Federal Legislation

In January 2007, Federal legislation was re-introduced by California members of Congress to authorize Federal agencies to implement the Settlement beyond the authority contained in the CVPIA. The San Joaquin River Restoration Act (House Resolution 4074) passed out of the House Committee on Natural Resources in November 2007. Congressman Jim Costa (D-Fresno) is chief House author of the San Joaquin river restoration bill first introduced by Congressman George Radanovich (R-Mariposa) and Senator Dianne Feinstein (D-California) in December 2006. Congressman Costa continues to work with all of the interested parties on implementation of the Water Management Goal and development of a financing strategy that meets Congressional requirements. Further action by the House and Senate is anticipated in 2008.

While authorization is still pending at the time of this annual report, the Department of the Interior is proceeding with environmental review based on current authorities and funding, although timely passage of Congressional legislation will be critical to implementing provisions in the Settlement and maintaining the schedule.

EXHIBIT F

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! **Los Angeles Fires**

Go to ca.gov/LAfires for recovery resources and information. Get help now.

On this

- Overview
- Southern Oregon and Northern California Coastal Chinook Salmon
- California Coastal Chinook
- Upper Klamath - Trinity River Chinook Salmon
- Central Valley Fall and late-fall-run Chinook Salmon
- Central Valley spring-run Chinook Salmon
- Sacramento River winter-run Chinook Salmon

Oncorhynchus tshawytscha

Overview

Chinook Salmon caught off the coast of California near Eureka, CA. *CDFW photo).*

On the west coast of North America, California streams support the southern-most Chinook Salmon runs. Chinook Salmon in California display a wide array of life history patterns that allow them to take advantage of the diverse and variable riverine and ocean environments. Chinook Salmon are “anadromous” fish, migrating upstream as adults to spawn in freshwater streams, and migrating as juveniles downstream to grow and mature in the ocean. The time spent in the ocean and freshwater varies greatly among the various runs. Chinook have been classified into six major groups, or Evolutionarily Significant Units (ESUs) by NOAA Fisheries.

The Fisheries Branch Anadromous Assessment Unit compiles annual population estimates of Chinook Salmon, *Oncorhynchus tshawytscha*. Estimates are based on counts of fish entering hatcheries and migrating past dams, carcass surveys, live fish counts, creel census data, and ground and aerial redd counts.

CDFW Video: Return of Butte Creek spring-run Chinook Salmon, 2018 (YouTube)

Southern Oregon and Northern California Coastal Chinook Salmon

The Southern Oregon and Northern California Coastal Chinook Salmon ESU includes fall-run Chinook Salmon in coastal streams from Cape Blanco in Oregon south to the Klamath River. Southern Oregon and Northern California Coastal Chinook Salmon were proposed for federal listing in 1999, but listing was determined to be "not warranted".

California Coastal Chinook

The California Coastal Chinook Salmon ESU includes all natural spawning populations of Chinook Salmon from rivers and streams south of the Klamath River to the Russian River.

Due to concern over depressed population sizes relative to historical abundance, California Coastal Chinook Salmon was federally listed as threatened in 1999.

- CDFW Plan for Assessment and Management of Coastal Chinook Salmon (PDF)

Upper Klamath - Trinity River Chinook Salmon

Within the Upper Klamath - Trinity River ESU, fall and spring Chinook Salmon spawn and rear in the Trinity River and in the Klamath River. In the Trinity River, Chinook Salmon spawn in the mainstem (with their upstream distribution limited by Lewiston Dam), the north and south forks, Hayfork Creek, New River, and Canyon Creek. In the Klamath River, Chinook Salmon once ascended into Upper Klamath Lake, Oregon, to spawn in the major tributaries to the lake

(Williamson, Sprague, and Wood Rivers), but access to this region was blocked by Copco Dam, built in 1917. Today Chinook Salmon are known to spawn in the mainstem Klamath River, Bogus Creek, Shasta River, Scott River, Indian Creek, Elk Creek, Clear Creek, Salmon River, Bluff Creek, Blue Creek, and the lower reaches of some of the other smaller tributaries to the mainstem river.

The Upper Klamath - Trinity River Chinook Salmon ESU was proposed for federal listing in 1998, but listing was determined to be "not warranted".

Central Valley Fall and late-fall-run Chinook Salmon

Four distinct runs of Chinook Salmon spawn in the Sacramento-San Joaquin River system, named for the season when the majority of the run enters freshwater as adults. Fall-run Chinook Salmon migrate upstream as adults from July through December and spawn from early October through late December. The timing of runs varies from stream to stream. Late-fall-run Chinook Salmon migrate into the rivers from mid-October through December and spawn from January through mid-April. The majority of young salmon of these races migrate to the ocean during the first few months following emergence, although some may remain in freshwater and migrate as yearlings.

Fall-run Chinook Salmon are currently the most abundant of the Central Valley races, contributing to large commercial and recreational fisheries in the ocean and popular sport fisheries in the freshwater streams. Fall-run Chinook Salmon are raised at five major Central Valley hatcheries which release more than 32 million smolts each year. Due to concerns over population size and hatchery influence, Central Valley fall and late-fall-run Chinook Salmon are a Species of Concern under the federal Endangered Species Act.

Central Valley spring-run Chinook Salmon

Four distinct runs of Chinook Salmon spawn in the Sacramento-San Joaquin River system, named for the season when the majority of the run enters freshwater as adults. Spring-run Chinook Salmon enter the Sacramento River from late March through September. Adults hold in cool water habitats through the summer, then spawn in the fall from mid-August through

early October. Spring run juveniles migrate soon after emergence as young-of-the-year, or remain in freshwater and migrate as yearlings.

Spring-run Chinook Salmon were historically the most abundant race in the Central Valley. Now only remnant runs remain in Butte, Mill, Deer, Antelope, and Beegum Creeks, tributaries to the Sacramento River. In the mainstem Sacramento River and the Feather River, early-running Chinook Salmon occur, but significant hybridization with fall run has occurred. The Status Review of Spring-Run Chinook Salmon in Sacramento River Drainage (PDF) was prepared in 1998. Due to the small number of non-hybridized populations remaining and low population sizes, Central Valley spring-run Chinook Salmon were listed as threatened under both the state and federal endangered species acts in 1999.

Annual reports to the Fish and Game Commission on Central Valley spring-run Chinook:

- 2002-2003 BIENNIAL Report (PDF)
- 2001 ANNUAL Report (PDF)
- 2000 ANNUAL Report (PDF)
- 2000 ANNUAL Report Eratta (TXT)

Sacramento River winter-run Chinook Salmon

Four distinct runs of Chinook salmon spawn in the Sacramento-San Joaquin River system, named for the season when the majority of the run enters freshwater as adults. Adult Sacramento River (SR) winter-run Chinook Salmon pass under the Golden Gate Bridge from November through May, and pass into the Sacramento River from December through early August. SR winter-run Chinook Salmon spawn in the upper mainstem Sacramento River from mid-April through August. Fry and smolts emigrate downstream from July through March through the Sacramento River, reaching the Delta from September through June.

Two biennial reports to the Fish and Game Commission on winter-run Chinook Salmon:

- 2002-2003 (PDF)
- 2000-2001 (PDF)
- Winter-run Chinook Salmon reintroduction plan for Battle Creek (PDF)

Historically, winter-run Chinook Salmon spawned in the upper reaches of Sacramento River tributaries, including the McCloud, Pit, and Little Sacramento Rivers. Shasta and Keswick dams now block access to the historic spawning areas. Winter-run Chinook, however, were able to take advantage of cool summer water releases downstream of Keswick Dam. In the 1940s and 1950s the population recovered. However, beginning in 1970, the population experienced a dramatic decline — a low of approximately 200 spawners by the 1980s. The run was classified as endangered under the state California Endangered Species Act in 1989, and as endangered under the federal Endangered Species Act in 1994.

Related Information

CDFW Grants

- Grant Opportunities, Programs and Notices

CDFW Anadromous Web Pages

- Chinook Salmon Recovery
- Grand Tab (PDF) is the California Central Valley Chinook Salmon Database Report
- Fish Species Information and Conservation Efforts
- Ocean Salmon Sport and Commercial Fishing Regulations

CDFW Reports and Data

- Klamath River Anadromous Fishery Reintroduction and Restoration Monitoring Plan (PDF)
- CDFW Upper Sacramento River Basin Salmonid Monitoring Reports and Data
- CDFW Science Institute-Fish Publications
- Restoring Central Valley Streams: A Plan For Action (PDF)
- Central Valley Salmon and Steelhead Monitoring Programs (PDF)
- Central Valley Chinook Salmon In-River Escapement Monitoring Plan (PDF)
- A Comprehensive Monitoring Plan for Steelhead in the California Central Valley (PDF)
- Fish Bulletin 179 - Contributions to the Biology of Central Valley Salmonids, Volumes 1 & 2

- Fish Bulletin 180 - California Coastal Salmonid Monitoring: Strategy, Design and Methods (PDF)

NOAA

- Recovery Plan for Sacramento River Winter-run Chinook, Central Valley Spring -run Chinook, and Central Valley steelhead
- Coastal Multispecies Final Recovery Plan: California Coastal Chinook Salmon ESU, Northern California Steelhead DPS and Central California Coast Steelhead DPS

Fisheries Branch

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EXHIBIT G

SPECIAL ANIMALS LIST

January 2025

State of California

Natural Resources Agency

Department of Fish and Wildlife

Biogeographic Data Branch

California Natural Diversity Database (CNDDB)

Recommended Citation:

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Special Animals

"Special Animals" is a broad term used to refer to all the animal taxa tracked by the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB), regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special status species." The Special Animals List includes species, subspecies, Distinct Population Segments (DPS), or Evolutionarily Significant Units (ESU) where at least one of the following conditions applies:

- Officially listed or proposed for listing under state and/or federal endangered species acts
- Taxa considered by the Department of Fish and Wildlife to be a Species of Special Concern (SSC)
- Taxa which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the California Environmental Quality Act Guidelines
- Taxa that are biologically rare, very restricted in distribution, or declining throughout their range, but not currently threatened with extirpation
- Population(s) in California that may be peripheral to the major portion of a taxon's range but are threatened with extirpation in California
- Taxa closely associated with a habitat that is declining in California at a significant rate (e.g., wetlands, riparian, vernal pools, old growth forests, desert aquatic systems, native grasslands, valley shrubland habitats, etc.)
- Taxa designated as a special status, sensitive, or declining species by other state or federal agencies, or a non-governmental organization (NGO), and determined by the CNDDB to be rare, restricted, declining, or threatened across their range in California

The Special Animals List contains taxa that are actively inventoried, tracked, and mapped by the CNDDB, as well as taxa for which mapped data may not yet be incorporated into CNDDB user products. For the latter taxa, information at the county

and 7.5-minute USGS quadrangle level can be accessed via the CNDDB QuickView Tool.

Taxa with a "Yes" in the "End Notes?" column have additional information in the End Notes section at the back of the list.

Additional information about the California Natural Diversity Database is available on the CNDDB website.

Information on other CDFW resource management programs is available on the Department's Conservation and Management of Wildlife and Habitat website.

The CDFW Wildlife Diversity Program provides additional information on wildlife habitat, threats, and survey guidelines.

NatureServe Element Ranking

The California Natural Diversity Database program is a member of the NatureServe Network of natural heritage programs and uses the same conservation status methodology as other network programs. The ranking system was originally developed by The Nature Conservancy and is now maintained and recently revised by NatureServe. It includes a **Global rank** (G-rank), describing the status for a given taxon over its entire distribution, and a **State rank** (S-rank), describing the status for the taxon over its state distribution. For subspecies and varieties, there is also a "T" rank describing the global rank for the infraspecific taxon. The next page of this document details the criteria used to assign element ranks, from G1 to G5 for the Global rank and from S1 to S5 for the State rank. Procedurally, state programs such as the CNDDB develop the State ranks. The Global ranks are determined collaboratively among the Heritage Programs for the states/provinces containing the species. NatureServe then checks for consistency and logical errors at the national level. Because the units of conservation may include non-taxonomic biological entities such as populations or ecological communities, NatureServe refers to the targets of biological conservation as "elements" rather than taxa.

An element rank is assigned using standard criteria and rank definitions. This standardization makes the ranks comparable between organisms and across political boundaries. NatureServe has developed a "rank calculator" to help increase repeatability and transparency of the ranking process. The three main categories that are taken into consideration when assigning an element rank are rarity, threats, and trends. Within these three categories, various factors are considered, including:

- Range extent, area of occupancy, population size, total number of occurrences, and number of good occurrences (ranked A or B). Environmental specificity can also be used if other information is lacking.
- Overall threat impact as well as intrinsic vulnerability (if threats are unknown).
- Long-term and short-term trends.

Detailed information on this element ranking methodology can be found on the NatureServe Conservation Status Assessment website.

Listed below are definitions for interpreting global and state conservation status ranks. An element's ranking status may be adjusted up or down depending upon the considerations above.

Global Ranking

The global rank (G-rank) is a reflection of the overall status of an element throughout its global range.

- **GX: Presumed Extinct** – Not located despite intensive searches and virtually no likelihood of rediscovery.
- **GH: Possibly Extinct** – Known from only historical occurrences but still some hope of rediscovery. Examples of evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some evidence of significant habitat loss or degradation; (2) that a species has been searched for unsuccessfully, but not thoroughly enough to presume that it is extinct throughout its range.
- **G1: Critically Imperiled** – At very high risk of extinction due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.
- **G2: Imperiled** – At high risk of extinction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
- **G3: Vulnerable** – At moderate risk of extinction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
- **G4: Apparently Secure** – At fairly low risk of extinction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

- **G5: Secure** – At very low risk of extinction due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.
- **GNR: Unranked** – Global rank not yet assessed.

State Ranking

The state rank (S-rank) is assigned in much the same way as the global rank, but state ranks refer to the imperilment status only within California's state boundaries.

- **SX: Presumed Extirpated** – Species is believed to be extirpated from the state Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered
- **SH: Possibly Extirpated** – Known from only historical records but still some hope of rediscovery. There is evidence that the species may no longer be present in the state, but not enough to state this with certainty. Examples of such evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some evidence of significant habitat loss or degradation; (2) that a species has been searched for unsuccessfully, but not thoroughly enough to presume that it is no longer present in the jurisdiction.
- **S1: Critically Imperiled** – At very high risk of extirpation in the state due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.
- **S2: Imperiled** – At high risk of extirpation in the state due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
- **S3: Vulnerable** – At moderate risk of extirpation in the state due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
- **S4: Apparently Secure** – At a fairly low risk of extirpation in the state due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

- **S5: Secure** – At very low or no risk of extirpation in the state due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.
- **SNR: Unranked** – State rank not yet assessed.

Additional Notes on NatureServe Ranks

- Rank Qualifiers
    1. Taxa which are subspecies receive a taxon rank (**T-rank**) in addition to the G-rank. Whereas the G-rank reflects the condition of the entire species, the T-rank reflects the global status of just the subspecies. For example, the Point Reyes mountain beaver, *Aplodontia rufa* ssp. *phaea*, is ranked G5T2. The G-rank refers to the whole species, i.e., *Aplodontia rufa*; the T-rank refers only to the global condition of ssp. *phaea*.
    2. **C = Captive or Cultivated Only** — taxon at present is presumed or possibly extinct or eliminated in the wild across their entire native range but is extant in cultivation, in captivity, as a naturalized population (or populations) outside their native range, or as a reintroduced population not yet established. The “C” modifier is only used at a global level and not at a state level. Possible ranks are GXC or GHC.
    3. **Q = Questionable taxonomy** that may reduce conservation priority — Distinctiveness of this entity as a taxon at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon in another taxon, with the resulting taxon having a lower-priority (numerically higher) conservation status rank. The “Q” modifier is only used at the global level, not at the state level.
- Uncertainty about the status of an element is expressed in two major ways:
    1. By expressing the ranks as a **range** of values: e.g., S2S3 indicates the rank is somewhere between S2 and S3.
    2. By adding a “**?**” to the rank: e.g., S2?; this represents more certainty than S2S3, but less certainty than S2.

- Other considerations used when ranking a species include the pattern of distribution of the element on the landscape, fragmentation of the population, and historical extent as compared to its modern range. It is important to take an overall view when ranking sensitive elements rather than simply counting element occurrences.

Animal Element Occurrences and Mapping

What is an Element Occurrence?

An Element Occurrence (EO) is a location where a given element has been documented to occur. It is a concept developed and applied within the NatureServe natural heritage network. An EO is not a population, but may indicate that a population is present in that area; likewise, a single population may be represented by more than one EO. An EO is based upon the source documents available at the time of mapping. Both the mapped feature and the text portion of EOs are updated as new information becomes available.

Element Occurrence Definitions Vary by Taxa

The EO definition refers to the types of information mapped. For most animal taxa, the CNDDB is interested in information that indicates the presence of a resident population. However, for many migratory birds, the CNDDB only tracks detections of nest sites or behaviors indicating reproduction is occurring at the site. Details about avian detections are available in the Submitting Avian Detections document. For other taxa where CNDDB tracks only a certain part of the range or life history, the area or life stage is indicated on the list under the “Comment” column.

Mapping Conventions

Information in CNDDB is mapped to balance precision and uncertainty, based upon the source materials used to determine the location of the Element Occurrence. Data with precise location information are mapped with 80m-radius circles or specific polygons. Data with vague location information are mapped with non-specific circular features or non-specific polygons. Non-specific features indicate that the species was found somewhere within the mapped area, but the exact location was unknown. Generally, observations/collections within ¼ mile and/or within continuous habitat are combined into a single EO.

Taxonomic Standards

Taxonomic References and Sources of Additional Information

The CNDDB follows current published taxonomy for animals as recognized by the scientific organizations listed below. The CNDDB reviews publications that propose new taxonomy and nomenclature for CNDDB-tracked species and evaluates whether these proposals are recognized by the larger scientific community. The CNDDB makes every effort to use the best available science in the taxonomy used, but different experts may recognize different names for some time after a taxonomic change is proposed. In these cases, the CNDDB will generally use the preexisting nomenclature until a change is formally recognized beyond the initial publication. In addition, the CNDDB recognizes some taxa identified by experts on the California fauna where these taxa may not be recognized by national biological societies. Generally, the taxonomy used by NatureServe is followed, with additional evaluation of taxonomy from the following sources:

- Reptiles and amphibians:
    - The Center for North American Herpetology
    - The Society for the Study of Amphibians and Reptiles
- Fishes:
    - Fricke, R., Eschmeyer, W. N. & R. van der Laan (eds) 2022. Eschmeyer's catalog of fishes: genera, species, references. Electronic version.
    - Jelks, H.L., S.J. Walsh, N.M. Burkhead, S. Contreras-Balderas, E. Díaz-Pardo, D.A. Hendrickson, J. Lyons, N.E. Mandrak, F. McCormick, J.S. Nelson, S.P. Platania, B.A. Porter, C.B. Renaud, J.J. Schmitter-Soto, E.B. Taylor, and M.L. Warren, Jr. 2008. Conservation status of imperiled North American freshwater and diadromous fishes. Fisheries 33(8):372-407.
    - Lawrence M. Page, Héctor Espinosa-Pérez, Lloyd T. Findley, Carter R. Gilbert, Robert N. Lea, Nicholas E. Mandrak, Richard L. Mayden, and Joseph S. Nelson. 2013. Common and scientific names of fishes from the

United States, Canada, and Mexico, 7th edition. American Fisheries Society, Special Publication 34. 243 pp.

    - Moyle, P. B. 2002. Inland fishes of California. University of California Press.

- Birds:
    - The checklist of the American Ornithologists' Union
- Mammals:
    - The American Society of Mammalogists
    - Bradley, R.D., L.K. Ammerman, R.J. Baker, L.C. Bradley, J.A. Cook, R.C. Dowler, C. Jones, D.J. Schimdly, F.B. Stangl Jr., R.A. Van Den Bussche, and B. Wursig. 2014. Revised checklist of North American mammals north of Mexico, 2014. Museum of Texas Tech University Occasional Papers 327:1-28.

Listing and Special Status Information

CALIFORNIA ENDANGERED SPECIES ACT (CESA) LISTING CODES: The listing status of each species is current as of the date of this list. The most current changes in listing status will be found in the "Endangered and Threatened Animals List," which the CNDDB updates and issues quarterly. Additional information can be found on the California Fish and Game Commission CESA web page.

- SE State listed as endangered
- ST State listed as threatened
- SC State candidate for listing as endangered or threatened

FEDERAL ENDANGERED SPECIES ACT (ESA) LISTING CODES: The listing status is current as of the date of this list. The most current changes in listing status will be found in the "Endangered and Threatened Animals List," which the CNDDB updates and issues quarterly. Federal listing actions are published in the Federal Register.

- FE Federally listed as endangered
- FT Federally listed as threatened
- FPE Federally proposed for listing as endangered
- FPT Federally proposed for listing as threatened
- FC Federal candidate species (former Category 1 candidates)

Section 4(c)(2)(A) of the Act requires the U.S. Fish and Wildlife Service and the National Marine Fisheries Service to conduct a review of listed species at least once every five years. Five year reviews are made available by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service.

OTHER STATUS CODES: The status of species on the Special Animals List according to other conservation organizations is provided below. Taxa on these lists are reviewed for inclusion in the CNDDB Special Animals List, but are not automatically included. For example, taxa that are regionally rare within a portion of California may not be included, because they may be of lesser conservation concern across their full range in California.

- **American Fisheries Society (AFS):**
    1. Designations for freshwater and diadromous species were taken from the paper:
        - Jelks, H.L., S.J. Walsh, N.M. Burkhead, S. Contreras-Balderas, E. Díaz-Pardo, D.A. Hendrickson, J. Lyons, N.E. Mandrak, F. McCormick, J.S. Nelson, S.P. Platania, B.A. Porter, C.B. Renaud, J.J. Schmitter-Soto, E.B. Taylor, and M.L. Warren, Jr. 2008. Conservation status of imperiled North American freshwater and diadromous fishes. Fisheries 33(8):372-407.
    2. Designations for marine and estuarine species were taken from the paper:
        - Musick, J.A. et al. 2000. Marine, Estuarine, and Diadromous Fish Stocks at Risk of Extinction in North America (Exclusive of Pacific Salmonids). Fisheries 25(11):6-30.
- **Bureau of Land Management (BLM) Sensitive:** Bureau of Land Management Manual §6840 states that "BLM sensitive species are: (1) species listed or proposed for listing under the Endangered Species Act (ESA), and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as Bureau sensitive by the State Director(s). All Federal candidate species, proposed species, and delisted species in the 5 years following delisting will be conserved as Bureau sensitive species." Downloadable copies of the California-BLM Special Status Animals and Sensitive Species Lists are available.
- **California Department of Forestry and Fire Protection (CDF) Sensitive:** California Department of Forestry and Fire Protection classifies "sensitive species" as those species that warrant special protection during timber operations. The list of "sensitive species" is given in §895.1 (Definitions) of the California Forest Practice Rules.
- **CDFW Fully Protected:** The classification of Fully Protected was the State's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds, and mammals. Most of the species on these lists have

subsequently been listed under the California and/or federal endangered species acts; the exceptions are white-tailed kite, golden eagle, trumpeter swan, northern elephant seal, and ringtail cat. The white-tailed kite, golden eagle, and ringtail cat are tracked in the CNDDB. The trumpeter swan and northern elephant seal are not tracked by the CNDDB. The Fish and Game Code sections dealing with Fully Protected species state that these species "...may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected" species, although take may be authorized for necessary scientific research. This language arguably makes the "Fully Protected" designation the strongest and most restrictive regarding the "take" of these species. In 2003, code sections dealing with Fully Protected species were amended to allow the Department to authorize take resulting from recovery activities for state-listed species. More information on Fully Protected species and the take provisions can be found in the Fish and Game Code: birds at §3511, mammals at §4700, reptiles and amphibians at §5050, and fish at §5515). Additional information on Fully Protected fish can be found in the California Code of Regulations, Title 14, Division 1, Subdivision 1, Chapter 2, Article 4, §5.93. The category of Protected Amphibians and Reptiles in Title 14 has been repealed. Senate Bill no. 147 (July 2023) removed American peregrine falcon, brown pelican, and thicktail chub as fully protected species under the Fish & Game Code because they have been delisted-recovered under CESA or are considered extinct.

- **CDFW Species of Special Concern (SSC):** It is the goal and responsibility of the Department of Fish and Wildlife to maintain viable populations of all native species. To this end, the Department has designated certain vertebrate species as “Species of Special Concern” because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. The goal of designating SSCs is to halt or reverse their decline by calling attention to their plight and addressing the issues of concern early enough to secure their long-term viability. Not all SSCs have declined equally; some species may be just starting to decline, while others may have already reached the point where they

meet the criteria for listing as a threatened or endangered under state and/or federal endangered species acts.

- **CDFW Watch List Species:** Watch list species are taxa that were previously SSCs but do not currently meet SSC criteria, and for which there is concern and a need for additional information to clarify status.
- **International Union for Conservation of Nature (IUCN) Red List of Threatened Species:** The IUCN assesses, on a global scale, the conservation status of species, subspecies, varieties, and even selected subpopulations in order to highlight taxa threatened with extinction, and therefore promote their conservation. Detailed information is available from the IUCN Red List Online. When the CNDDB tracks a subunit (such as subspecies, DPS, or ESU) that does not have an IUCN status, the CNDDB either:
    1. Applies the IUCN status of the parent entity to the CNDDB element if the IUCN status is Critical (CR), Endangered, (EN), or Vulnerable (VU)
    2. Does not apply the IUCN status of the parent entity to the CNDDB element if the IUCN status is Near Threatened (NT), Least Concern (LC), or Data Deficient (DD).
- **Marine Mammal Commission (MMC) Marine Mammal Species of Special Concern:** Section 202 of the Marine Mammal Protection Act (MMPA) directs the MMC, in consultation with its Committee of Scientific Advisors, to make recommendations to the Department of Commerce, the Department of the Interior, and other federal agencies on research and management actions needed to conserve species of marine mammals. To meet this charge, the Commission devotes special attention to particular species and populations that are vulnerable to various types of human-related activities, impacts, and contaminants. Such species may include marine mammals listed as endangered or threatened under the federal ESA or as depleted under the MMPA. In addition, the Commission often directs special attention to other species or populations of marine mammals not so listed whenever special conservation challenges arise that may affect them. More information on the MMPA and the list of species is

available from the MMC Marine Mammal Species and Populations of Concern website.

- **United States Forest Service (USFS) Sensitive:** The USDA Forest Service defines sensitive species as plant and animal species identified by a regional forester that are not listed or proposed for listing under the federal Endangered Species Act for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density, or significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution. Regional Foresters shall identify sensitive species occurring within the region. More information on California species can be found on the Pacific Southwest Region (Region 5) Plants and Animals site, including links to download the Regional Forester's Sensitive Animal Species List.
- **U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern:** The goal of the Birds of Conservation Concern 2021 report is to accurately identify the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent highest conservation priorities and draw attention to species in need of conservation action.

Table of Special Status Code Abbreviations

Organization	Abbreviation
American Fisheries Society - Endangered	AFS_EN
American Fisheries Society - Threatened	AFS_TH
American Fisheries Society - Vulnerable	AFS_VU
Bureau of Land Management - Sensitive	BLM_S
Calif Dept of Forestry & Fire Protection - Sensitive	CDF_S
Calif Dept of Fish & Wildlife - Fully Protected	CDFW_FP
Calif Dept of Fish & Wildlife - Species of Special Concern	CDFW_SSC
Calif Dept of Fish & Wildlife - Watch List	CDFW_WL
IUCN - Critically Endangered	IUCN_CR
IUCN - Endangered	IUCN_EN
IUCN - Vulnerable	IUCN_VU
IUCN - Near Threatened	IUCN_NT
IUCN - Least Concern	IUCN_LC
IUCN - Data Deficient	IUCN_DD
Marine Mammal Commission - Species of Special Concern	MMC_SSC
U.S. Forest Service - Sensitive	USFS_S
U.S. Fish & Wildlife Service Birds of Conservation Concern	USFWS_BCC

Special Animals List

(929 taxa)

Last updated January 3, 2025

The remainder of this document contains the CNDDB's Special Animals List, current as of the date on the title page of this document.

Invertebrates

PELECYPODA (clams and mussels)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Anodonta californiensis	California floater		G3	S2?	None	None	USFS:S	Yes	
Anodonta oregonensis	Oregon floater		G5	S2?	None	None	IUCN:LC	Yes	
Gonidea angulata	western ridged mussel		G3	S2	None	None	IUCN:VU	Yes	
Margaritifera falcata	western pearlshell		G3G4	S1S2	None	None	IUCN:NT	Yes	
Pisidium ultramontanum	montane peaclam		G1	S1	None	None	IUCN:VU USFS:S	Yes	

GASTROPODA (snails, slugs, and abalones)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Ammonitella yatesii	tight coin (=Yates' snail)		G1	S1	None	None	IUCN:VU	Yes	
Ancotrema voyanum	hooded lancetooth		G1G2	S1S2	None	None		Yes	
Assiminea infima	Badwater snail		G1	S1	None	None	IUCN:VU	Yes	
Binneya notabilis	Santa Barbara shelled slug		G1	S1	None	None	IUCN:DD	Yes	
Colligyrus convexus	canary duskysnail		G2	S2	None	None		Yes	
Eremarionta immaculata	white desertsnail		G1	S1	None	None	IUCN:VU	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Eremarionta millepalmarum	Thousand Palms desertsnail		G1	S1	None	None	IUCN:VU	No	
Eremarionta morongoana	Morongo (=Colorado) desertsnail		G1G3	S1	None	None	IUCN:NT	Yes	
Eremarionta rowelli bakerensis	Baker's desertsnail		G3G4T1	S1	None	None	IUCN:DD	Yes	
Eremarionta rowelli mccoiana	California McCoy snail		G3G4T1	S1	None	None	IUCN:DD	Yes	
Fluminicola seminalis	nugget pebblesnail		G2	S3	None	None	IUCN:DD USFS:S	Yes	
Glyptostoma gabrielense	San Gabriel chestnut		G2	S3	None	None		Yes	
Haliotis corrugata	pink abalone		G3?	S2?	None	None	IUCN:CR	No	
Haliotis cracherodii	black abalone		G3	S2	Endangered	None	IUCN:CR	Yes	
Haliotis fulgens	green abalone		G3G4	S2	None	None	IUCN:CR	No	
Haliotis kamtschatkana	pinto abalone		G3G4	S2	None	None	IUCN:EN	No	
Haliotis sorenseni	white abalone		G1	S2	Endangered	None	IUCN:CR	No	
Haplotrema catalinense	Santa Catalina lancetooth		G1	S1	None	None		Yes	
Haplotrema duranti	ribbed lancetooth		G1G2	S1S2	None	None		Yes	
Helisoma newberryi	Great Basin rams-horn		G1	S1S2	None	None	USFS:S	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Helminthoglypta allynsmithi	Merced Canyon shoulderband		G1	S1	None	None	IUCN:VU	Yes	
Helminthoglypta arrosa monticola	mountain shoulderband		G2G3T1	S1	None	None		Yes	
Helminthoglypta arrosa pomoensis	Pomo bronze shoulderband		G2G3T1	S1	None	None	IUCN:DD	Yes	
Helminthoglypta ayresiana sanctaecrucis	Ayer's snail		G1G2T1T2	S1S2	None	None		Yes	
Helminthoglypta callistoderma	Kern shoulderband		G1	S1	None	None	IUCN:EN	Yes	
Helminthoglypta coelata	mesa shoulderband		G1	S1	None	None	IUCN:VU	Yes	
Helminthoglypta concolor	whitefir shoulderband		G1G2	S1S2	None	None		Yes	
Helminthoglypta fontiphila	Soledad shoulderband		G1	S1	None	None		Yes	
Helminthoglypta greggi	Mohave shoulderband		G2	S2	None	None		Yes	
Helminthoglypta hertleini	Oregon shoulderband		G3Q	S1S2	None	None		Yes	
Helminthoglypta milleri	peak shoulderband		G1	S1	None	None		Yes	
Helminthoglypta mohaveana	Victorville shoulderband		G1	S1	None	None	IUCN:NT	Yes	
Helminthoglypta nickliniana awania	Peninsula coast range shoulderband		G3T1	S1	None	None	IUCN:DD	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Helminthoglypta nickliniana bridgesi	Bridges' coast range shoulderband		G3T1	S1S2	None	None	IUCN:DD	Yes	
Helminthoglypta sequoicola consors	redwood shoulderband		G2T1	S1	None	None	IUCN:DD	Yes	
Helminthoglypta stiversiana williamsi	Williams' bronze shoulderband		G1G2T1	S1	None	None	IUCN:DD	Yes	
Helminthoglypta talmadgei	Trinity shoulderband		G2	S2	None	None		Yes	
Helminthoglypta taylori	westfork shoulderband		G1	S1	None	None		Yes	
Helminthoglypta traskii pacoimensis	Pacoima shoulderband		G1G2T1	S1	None	None		Yes	
Helminthoglypta traskii traskii	Trask shoulderband		G1G2T1	S2S3	None	None		Yes	
Helminthoglypta uvasana	Grapevine shoulderband		G1	S1	None	None		Yes	
Helminthoglypta vasquezi	Vasquez shoulderband		G1	S1	None	None		Yes	
Helminthoglypta walkeriana	Morro shoulderband		G2	S2	Threatened	None	IUCN:CR	Yes	
Herpeteros angelus	Soledad desertsnail		G1	S1	None	None		No	
Hesperarion plumbeus	leaden slug		G2	S1S2	None	None		Yes	
Ipnobius robustus	robust tryonia		G1G2	S1	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Juga acutifilosa	topaz juga		G2?	S2	None	None	IUCN:NT USFS:S	Yes	
Juga chacei	Chace juga		G1	S1	None	None	USFS:S	Yes	
Juga occata	scalloped juga		G1	S1	None	None	IUCN:EN USFS:S	Yes	
Juga orickensis	redwood juga		G2	S1S3	None	None		Yes	
Lanx alta	highcap lanx		G2G3	S3	None	None		Yes	
Lanx patelloides	kneecap lanx		G2?	S2	None	None	USFS:S	Yes	
Littorina subrotundata	Newcomb's littorine snail		G5	S1S2	None	None		No	
Megomphix californicus	Natural Bridge megomphix		G3	S3	None	None		Yes	
Micrarionta facta	Santa Barbara islandsnail		G1G2	S1S2	None	None	IUCN:VU	Yes	
Micrarionta feralis	San Nicolas islandsnail		G1	S1	None	None	IUCN:CR	Yes	
Micrarionta gabbii	San Clemente islandsnail		G1	S1	None	None	IUCN:VU	Yes	
Micrarionta opuntia	pricklypear islandsnail		G1	S1	None	None	IUCN:VU	Yes	
Monadenia callipeplus	downy sideband		G1?	S1S2	None	None		Yes	
Monadenia chaceana	Siskiyou shoulderband		G2G3	S2	None	None		Yes	
Monadenia churchi	Klamath sideband		G3	S3	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Monadenia circumcarinata	keeled sideband		G3	S3	None	None	BLM:S IUCN:VU	Yes	
Monadenia cristulata	crested sideband		G1?	S1S2	None	None		Yes	
Monadenia fidelis leonina	A terrestrial snail		G4G5T1T2	S1S2	None	None		Yes	
Monadenia fidelis pronotis	rocky coast Pacific sideband		G4G5T1	S1	None	None	IUCN:DD	Yes	
Monadenia infumata ochromphalus	yellow-based sideband		G2T1T2	S1S2	None	None		Yes	
Monadenia infumata setosa	Trinity bristle snail		G2T2	S2	None	Threatened	IUCN:VU	Yes	
Monadenia marmarotis	marble sideband		G1	S1	None	None		Yes	
Monadenia mormonum buttoni	Button's Sierra sideband		G2T1T2	S1S2	None	None	IUCN:DD	Yes	
Monadenia mormonum hirsuta	hirsute Sierra sideband		G2T1	S1	None	None	BLM:S IUCN:DD	Yes	
Monadenia troglodytes troglodytes	Shasta sideband		G2T2	S2	None	None	USFS:S	Yes	
Monadenia troglodytes wintu	Wintu sideband		G2T2	S2	None	None	USFS:S	Yes	
Monadenia tuolumneana	Tuolumne sideband		G1	S1	None	None	BLM:S	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Monadenia yosemitensis	Yosemite sideband		G1	S1S2	None	None		Yes	
Noyo intersessa	Ten Mile shoulderband		G2	S1S2	None	None		Yes	
Pomatiopsis binneyi	robust walker		G1	S1	None	None		Yes	
Pomatiopsis californica	Pacific walker		G1	S1	None	None	IUCN:DD	Yes	
Pomatiopsis chacei	marsh walker		G1	S2	None	None		Yes	
Pristiloma shepardae	Shepard's snail		G1	S1	None	None		Yes	
Pristinicola hemphilli	pristine pyrg		G3	S1	None	None	IUCN:DD USFS:S	Yes	
Prophysaon sp. 1	Klamath taildropper		G3	S3	None	None		Yes	Yes
Punctum hannai	Trinity Spot		G1G2	S1S2	None	None		Yes	
Pyrgulopsis aardahli	Benton Valley (=Aahrdahl's) springsnail		G1	S1	None	None		Yes	
Pyrgulopsis archimedis	Archimedes pyrg		G1G2	S1S2	None	None		Yes	
Pyrgulopsis cinerana	Ash Valley pyrg		G1G2	S1S2	None	None		Yes	
Pyrgulopsis diablensis	Diablo Range pyrg		G1	S1	None	None	IUCN:VU	Yes	
Pyrgulopsis eremica	Smoke Creek pyrg		G2	S2	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Pyrgulopsis falciglans	Likely pyrg		G1	S1	None	None		Yes	
Pyrgulopsis gibba	Surprise Valley pyrg		G3	S1S2	None	None		Yes	
Pyrgulopsis greggi	Kern River pyrg		G1	S1	None	None	IUCN:VU	Yes	
Pyrgulopsis lasseni	Willow Creek pyrg		G1G2	S1S2	None	None	USFS:S	Yes	
Pyrgulopsis longae	Long Valley pyrg		G1	S1	None	None		Yes	
Pyrgulopsis owensensis	Owens Valley springsnail		G1G2	S1S2	None	None	USFS:S	Yes	
Pyrgulopsis perturbata	Fish Slough springsnail		G1	S1	None	None		Yes	
Pyrgulopsis rupinicola	Sucker Springs pyrg		G1	S1	None	None		Yes	
Pyrgulopsis taylori	San Luis Obispo pyrg		G1	S1	None	None		Yes	
Pyrgulopsis ventricosa	Clear Lake pyrg		G1	S1	None	None	IUCN:CR	Yes	
Pyrgulopsis wongi	Wong's springsnail		G3	S2	None	None	IUCN:LC USFS:S	Yes	
Radiocentrum avalonense	Catalina mountainsnail		G1	S1	None	None	IUCN:CR	Yes	
Rothelix warnerfontis	Warner Springs shoulderband		G1	S1	None	None	USFS:S	Yes	
Sterkia clementina	San Clemente Island blunt-top snail		G2G3	S1S2	None	None	IUCN:NT	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Trilobopsis roperi	Shasta chaparral		G2	S1	None	None	USFS:S	Yes	
Trilobopsis tehamana	Tehama chaparral		G2	S1	None	None	USFS:S	Yes	
Tryonia imitator	mimic tryonia (=California brackishwater snail)		G2	S2	None	None	IUCN:DD	Yes	
Tryonia margae	Grapevine Springs elongate tryonia		G1	S1	None	None		Yes	
Tryonia rowlandsi	Grapevine Springs squat tryonia		G1	S1	None	None		Yes	
Vespericola karokorum	Karok hesperian		G2	S2	None	None	IUCN:DD	Yes	
Vespericola marinensis	Marin hesperian		G2	S2	None	None		Yes	
Vespericola pressleyi	Big Bar hesperian		G1	S1	None	None	USFS:S	Yes	
Vespericola scotti	Benson Gulch hesperian		G1	S1	None	None		Yes	
Vespericola shasta	Shasta hesperian		G3	S3	None	None	USFS:S	Yes	
Vespericola sierranus	Siskiyou hesperian		G3	S1S2	None	None		Yes	
Xerarionta intercisa	horseshoe snail		G1	S1	None	None	IUCN:VU	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Xerarionta redimita	wreathed cactussnail		G1G2	S1	None	None	IUCN:VU	Yes	
Xerarionta tryoni	Bicolor cactussnail		G1	S1	None	None	IUCN:VU	Yes	

ARACHNIDA (spiders and relatives)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Aphrastochthonius grubbsi	Grubbs' Cave pseudoscorpion		G1	S1	None	None		Yes	
Aphrastochthonius similis	Carlow's Cave pseudoscorpion		G1	S1	None	None		Yes	
Archeolarca aalbui	Aalbu's Cave pseudoscorpion		G1	S1	None	None		Yes	
Banksula californica	Alabaster Cave harvestman		GH	SH	None	None		Yes	
Banksula galilei	Galile's cave harvestman		G1	S1	None	None		Yes	
Banksula grubbsi	Grubbs' cave harvestman		G1	S1	None	None		Yes	
Banksula incredula	incredible harvestman		G1	S1	None	None		Yes	
Banksula martinorum	Martins' cave harvestman		G1	S1	None	None		Yes	
Banksula melones	Melones Cave harvestman		G1	S1	None	None	IUCN:VU	Yes	
Banksula rudolphi	Rudolph's cave harvestman		G1	S1	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Banksula tuolumne	Tuolumne cave harvestman		G2	S1	None	None		Yes	
Banksula tutankhamen	King Tut Cave harvestman		G1	S1	None	None		Yes	
Calicina arida	San Benito harvestman		G1	S1	None	None		Yes	
Calicina breva	Stanislaus harvestman		G1	S1	None	None		Yes	
Calicina cloughensis	Clough Cave harvestman		G1	S1	None	None		Yes	
Calicina conifera	Crane Flat harvestman		G1	S1	None	None		Yes	
Calicina diminua	Marin blind harvestman		G1	S1	None	None		Yes	
Calicina dimorphica	Watts Valley harvestman		G1	S1	None	None		Yes	
Calicina macula	marbled harvestman		G1	S1	None	None		Yes	
Calicina mesaensis	Table Mountain harvestman		G1	S1	None	None		Yes	
Calicina minor	Edgewood blind harvestman		G1	S1	None	None		Yes	
Calicina piedra	Piedra harvestman		G1	S1	None	None		Yes	
Calileptoneta briggsi	Briggs' leptonetid spider		G1	S1	None	None		Yes	
Calileptoneta oasa	Andreas Canyon leptonetid spider		G1	S1	None	None		Yes	
Calileptoneta ubicki	Ubick's leptonetid spider		G1	S1	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Calileptoneta wapiti	Mendocino leptonetid spider		G1	S1	None	None		Yes	
Fissilicreagris imperialis	Empire Cave pseudoscorpion		G1	S1	None	None	IUCN:VU	Yes	
Hubbardia idria	Idria short-tailed whipscorpion		G1	S1	None	None		Yes	
Hubbardia secoensis	Arroyo Seco short-tailed whipscorpion		G1	S1	None	None		Yes	
Hubbardia shoshonensis	Shoshone Cave whip-scorpion		G1	S1	None	None	BLM:S	Yes	Yes
Larca laceyi	Lacey's Cave pseudoscorpion		G1	S1	None	None		Yes	
Meta dolloff	Dolloff Cave spider		G3	S3	None	None	IUCN:VU	Yes	
Microcina edgewoodensis	Edgewood Park micro-blind harvestman		G1	S1	None	None		Yes	
Microcina homi	Hom's micro-blind harvestman		G1	S2	None	None		Yes	
Microcina jungi	Jung's micro-blind harvestman		G1	S1	None	None		Yes	
Microcina leei	Lee's micro-blind harvestman		G1	S1	None	None		Yes	
Microcina lumi	Lum's micro-blind harvestman		G1	S1	None	None		Yes	
Microcina tiburona	Tiburon micro-blind harvestman		G2	S2	None	None		Yes	
Neochthonius imperialis	Empire Cave pseudoscorpion		G1	S1	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Pseudogarypus orpheus	Music Hall Cave pseudoscorpion		G1	S1	None	None		Yes	
Socalchemmis gertschi	Gertsch's socalchemmis spider		G1	S1	None	None		Yes	
Socalchemmis icenoglei	Icenogle's socalchemmis spider		G1	S1	None	None		Yes	
Socalchemmis monterey	Monterey socalchemmis spider		G1	S1	None	None		Yes	
Talanites moodyae	Moody's gnaphosid spider		G2G3	S2S3	None	None		Yes	
Talanites ubicki	Ubick's gnaphosid spider		G1	S1	None	None		Yes	
Texella deserticola	Whitewater Canyon harvestman		G1	S1	None	None		Yes	
Texella kokoweef	Kokoweef Crystal Cave harvestman		G1	S1	None	None		Yes	
Texella shoshone	Shoshone Cave harvestman		G1	S1	None	None		Yes	

CRUSTACEA, Order Anostraca (fairy shrimp)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Artemia monica	Mono Lake brine shrimp		G3	S3	None	None		Yes	
Branchinecta campestris	pocket pouch fairy shrimp		G2	S1	None	None		Yes	
Branchinecta conservatio	Conservancy fairy shrimp		G2	S2	Endangered	None	IUCN:EN	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Branchinecta longiantenna	longhorn fairy shrimp		G2	S2	Endangered	None	IUCN:EN	Yes	
Branchinecta lynchi	vernal pool fairy shrimp		G3	S3	Threatened	None	IUCN:VU	Yes	
Branchinecta mesovallensis	midvalley fairy shrimp		G2	S2S3	None	None		Yes	
Branchinecta sandiegonensis	San Diego fairy shrimp		G2	S1	Endangered	None	IUCN:EN	Yes	
Linderiella occidentalis	California linderiella		G2G3	S2S3	None	None	IUCN:NT	Yes	
Linderiella santarosae	Santa Rosa Plateau fairy shrimp		G1G2	S1	None	None		Yes	
Streptocephalus woottoni	Riverside fairy shrimp		G1G2	S2	Endangered	None	IUCN:EN	Yes	

CRUSTACEA, Order Notostraca (tadpole shrimp)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Lepidurus packardi	vernal pool tadpole shrimp		G3	S3	Endangered	None	IUCN:EN	Yes	

CRUSTACEA, Order Diplostraca (water fleas)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Dumontia oregonensis	hairy water flea		G1G3	S1	None	None		Yes	

CRUSTACEA, Order Isopoda (isopods)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Bowmanasellus sequoiae	Sequoia cave isopod		G2	S2	None	None		Yes	
Caecidotea tomalensis	Tomales isopod		G2	S2S3	None	None		Yes	
Calasellus californicus	An isopod		G2	S3	None	None		Yes	
Calasellus longus	An isopod		G1	S1	None	None		Yes	

CRUSTACEA, Order Amphipoda (amphipods)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Hyalella muerta	Texas Spring amphipod		G1	S1	None	None		Yes	Yes
Hyalella sandra	Death Valley amphipod		G1	S1	None	None		Yes	Yes
Stygobromus cherylae	Barr's amphipod		G1	S1	None	None		Yes	
Stygobromus cowani	Cowan's amphipod		G1	S1	None	None		Yes	
Stygobromus gallawayae	Gallaway's amphipod		G1	S1	None	None		Yes	
Stygobromus gradyi	Grady's Cave amphipod		G1	S1	None	None	IUCN:VU	Yes	
Stygobromus grahami	Graham's Cave amphipod		G2	S2	None	None		Yes	
Stygobromus harai	Hara's Cave amphipod		G1	S1	None	None	IUCN:VU	Yes	
Stygobromus hyporheicus	hyporheic amphipod		G1	SX	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Stygobromus imperialis	Empire Cave amphipod		G1	S1	None	None		Yes	
Stygobromus lacicolus	Lake Tahoe amphipod		G1	S1	None	None		Yes	
Stygobromus mackenziei	Mackenzie's Cave amphipod		G1	S1	None	None	IUCN:VU	Yes	
Stygobromus myersae	Myer's amphipod		G1G2	S1S2	None	None		Yes	
Stygobromus mysticus	Secret Cave amphipod		G1	S1	None	None		Yes	
Stygobromus rudolphi	Rudolph's amphipod		G1	S1	None	None		Yes	
Stygobromus sheldoni	Sheldon's amphipod		G1	S1	None	None		Yes	
Stygobromus sierrensis	Sierra amphipod		G1	S1	None	None		Yes	
Stygobromus tahoensis	Lake Tahoe stygobromid		G1	S1	None	None		Yes	
Stygobromus trinus	Trinity County amphipod		G1	S1	None	None		Yes	
Stygobromus wengerorum	Wengerors' Cave amphipod		G1	S1	None	None	IUCN:VU	Yes	

CRUSTACEA, Order Decapoda (crayfish and shrimp)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Pacifastacus fortis	Shasta crayfish		G1	S1	Endangered	Endangered	IUCN:CR	Yes	
Pacifastacus leniusculus klamathensis	Klamath crayfish		G5T5	S4	None	None		No	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Syncaris pacifica	California freshwater shrimp		G2	S2	Endangered	Endangered	IUCN:EN	Yes	

INSECTA, Order Odonata (dragonflies and damselflies)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Ischnura gemina	San Francisco forktail damselfly		G2	S2	None	None	IUCN:EN	Yes	

INSECTA, Order Plecoptera (stoneflies)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Capnia lacustra	Lake Tahoe benthic stonefly		G1	S1	None	None		Yes	
Cosumnoperla hypocrena	Cosumnes stripetail		G2	S2	None	None		Yes	

INSECTA, Order Orthoptera (grasshoppers, katydids, and crickets)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Aglaothorax longipennis	Santa Monica shieldback katydid		G1G2	S1S2	None	None	IUCN:CR	Yes	
Ammopelmatus kelsoensis	Kelso jerusalem cricket		G1G2	S1S2	None	None	IUCN:VU	Yes	
Ammopelmatus muwu	Point Conception jerusalem cricket		G1	S1	None	None	IUCN:VU	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Idiostatus kathleenae	Pinnacles shieldback katydid		G1G2	S1S2	None	None		Yes	
Idiostatus middlekauffi	Middlekauff's shieldback katydid		G1G2	S1	None	None	IUCN:CR	Yes	
Macrobaenetes algodonensis	Algodones sand treader cricket		G1G2	S2	None	None		No	
Macrobaenetes kelsoensis	Kelso giant sand treader cricket		G2	S2	None	None	IUCN:VU	Yes	
Macrobaenetes valgum	Coachella giant sand treader cricket		G1G2	S2	None	None	IUCN:VU	Yes	
Pristoceuthophilus sp. 1	Samwell Cave cricket		G1G3	S1	None	None	IUCN:VU	Yes	
Psychomastax deserticola	desert monkey grasshopper		G2G3	S1	None	None	IUCN:VU	Yes	
Stenopelmatus cahuilaensis	Coachella Valley jerusalem cricket		G1G2	S2	None	None	IUCN:VU	Yes	
Tetrix sierrana	Sierra pygmy grasshopper		G1G2	S1	None	None	IUCN:VU	Yes	
Trimerotropis infantilis	Zayante band-winged grasshopper		G1	S1	Endangered	None	IUCN:EN	Yes	
Trimerotropis occidentiloides	Santa Monica grasshopper		G2	S2	None	None	IUCN:EN	Yes	
Trimerotropis occulens	Lompoc grasshopper		G1G2	S1S2	None	None	IUCN:EN	Yes	

INSECTA, Order Hemiptera (true bugs)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Ambrysus funebris	Nevares Spring naucorid bug		G1	S1	None	None		Yes	
Belostoma saratogae	Saratoga Springs belostoman bug		G1	S1	None	None		Yes	
Oravelia pege	Dry Creek cliff strider bug		G1	S1	None	None		Yes	
Pelocoris biimpressus	Amargosa naucorid bug		G1G3	S1S2	None	None		Yes	
Saldula usingeri	Wilbur Springs shorebug		G2	S2	None	None		Yes	

INSECTA, Order Neuroptera (lacewings)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Oliarces clara	cheeseweed owlfly (cheeseweed moth lacewing)		G1G3	S2	None	None		Yes	

INSECTA, Order Coleoptera (beetles)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Aegialia concinna	Ciervo aegilian scarab beetle		G1	S1	None	None	BLM:S IUCN:VU	Yes	
Agabus rumppi	Death Valley agabus diving beetle		G1G3	S1S2	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Agrilus harenus	Harenus jewel beetle		G1	S1	None	None		Yes	
Anomala carlsoni	Carlson's dune beetle		G1	S1	None	None		Yes	
Anomala hardyorum	Hardy's dune beetle		G1	S1	None	None		Yes	
Anthicus antiochensis	Antioch Dunes anthicid beetle		G3	S3	None	None		Yes	
Anthicus sacramento	Sacramento anthicid beetle		G4	S4	None	None	IUCN:EN	Yes	
Atractelmis wawona	Wawona riffle beetle		G3	S1S2	None	None		Yes	
Chaetarthria leechi	Leech's chaetarthrian water scavenger beetle		G1?	S1	None	None		Yes	
Cicindela hirticollis abrupta	Sacramento Valley tiger beetle		G5TH	SH	None	None		Yes	
Cicindela hirticollis gravida	sandy beach tiger beetle		G5T2	S2	None	None		Yes	
Cicindela latesignata	western beach tiger beetle		G2G3	S1	None	None		Yes	
Cicindela ohlone	Ohlone tiger beetle		G1	S1	Endangered	None		Yes	
Cicindela senilis frosti	senile tiger beetle		G2G3T1T3	S1	None	None		Yes	
Cicindela tranquebarica joaquinensis	San Joaquin tiger beetle		G5T1	S1	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Cicindela tranquebarica viridissima	greenest tiger beetle		G5T1	S1	None	None		Yes	
Coelus globosus	globose dune beetle		G1G2	S1S2	None	None	IUCN:VU	Yes	
Coelus gracilis	San Joaquin dune beetle		G1	S1	None	None	BLM:S IUCN:VU	Yes	
Coenonycha clementina	San Clemente Island coenonycha beetle		G1G2	S1S2	None	None		Yes	
Cyclocephala wandae	Wandae dune beetle		G1G2	S1	None	None		Yes	
Deltaspis ivae	marsh-elder long-horned beetle		G1	S1	None	None		Yes	
Desmocerus californicus dimorphus	valley elderberry longhorn beetle		G3T3	S3	Threatened	None		Yes	
Dinacoma caseyi	Casey's June beetle		G1	S1	Endangered	None		Yes	
Dubiraphia brunnescens	brownish dubiraphian riffle beetle		G1	S1	None	None		Yes	
Dubiraphia giulianii	Giuliani's dubiraphian riffle beetle		G1G3	S1S3	None	None		Yes	
Elaphrus viridis	Delta green ground beetle		G1	S1	Threatened	None	IUCN:CR	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Glaresis arenata	Kelso Dunes scarab glaresis beetle		G2	S2	None	None		Yes	
Habroscelimorpha gabbii	western tidal-flat tiger beetle		G2G4	S1	None	None		Yes	
*Hydrochara ricksecker*i	Ricksecker's water scavenger beetle		G2?	S2?	None	None		Yes	
Hydroporus leechi	Leech's skyline diving beetle		G3	S2S3	None	None		Yes	
Hydroporus simplex	simple hydroporus diving beetle		G3G4	S3S4	None	None		Yes	
Hygrotus curvipes	curved-foot hygrotus diving beetle		G2	S2	None	None		Yes	
Hygrotus fontinalis	travertine band-thigh diving beetle		G1	S1	None	None		Yes	
Juniperella mirabilis	juniper metallic wood-boring beetle		G2	S1	None	None		Yes	
Lepismadora algodones	Algodones sand jewel beetle		G1G2	S1S2	None	None		Yes	
Lichnanthe albipilosa	white sand bear scarab beetle		G1	S1	None	None		Yes	
Lichnanthe ursina	bumblebee scarab beetle		G2	S2	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Lytta hoppingi	Hopping's blister beetle		G1G2	S2	None	None		Yes	
Lytta insperata	Mojave Desert blister beetle		G1G2	S1S2	None	None		No	
Lytta moesta	moestan blister beetle		G2	S2	None	None		Yes	
Lytta molesta	molestan blister beetle		G2	S2	None	None		Yes	
Lytta morrisoni	Morrison's blister beetle		G1G2	S2	None	None		Yes	
Microcylloepus formicoideus	Furnace Creek riffle beetle		G1	S1	None	None		Yes	
Miloderes nelsoni	Nelson's miloderes weevil		G2	S2	None	None		Yes	
Nebria darlingtoni	South Forks ground beetle		G1	S1	None	None		Yes	
Nebria gebleri siskiyouensis	Siskiyou ground beetle		G4G5T4	S1S2	None	None		Yes	
Nebria sahlbergii triad	Trinity Alps ground beetle		G5T1	S1	None	None		Yes	
Ochthebius crassalus	wing shoulder minute moss beetle		G1G3	S1S3	None	None		No	
Ochthebius recticulus	Wilbur Springs minute moss beetle		G1	S1	None	None		Yes	
Onychobaris langei	Lange's El Segundo Dune weevil		G1	S1	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Optioservus canus	Pinnacles optioservus riffle beetle		G2	S1	None	None		Yes	
Palaeoxenus dohrni	Dohrn's elegant eucnemid beetle		G3?	S1S2	None	None		Yes	
Polyphylla anteronivea	Saline Valley snow-front June beetle		G2	S2	None	None		Yes	
Polyphylla barbata	Mount Hermon (=barbate) June beetle		G1	S2	Endangered	None		Yes	
Polyphylla erratica	Death Valley June beetle		G1G2	S1S2	None	None		Yes	
Polyphylla morroensis	Morro Bay June beetle		G1	S1	None	None		Yes	
Polyphylla nubila	Atascadero June beetle		G1	S1	None	None		Yes	
Prasinalia imperialis	Algodones white wax jewel beetle		G2	S2	None	None		No	
Pseudocotalpa andrewsi	Andrew's dune scarab beetle		G1	S1	None	None		Yes	
Scaphinotus behrensi	Behrens' snail-eating beetle		G2G4	S2S4	None	None		Yes	
Trachykele hartmani	serpentine cypress wood-boring beetle		G1	S1	None	None		Yes	
Trichinorhipis knulli	Knull's metallic wood-boring beetle		G1	S1	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Trigonoscuta brunnotesselata	brown tassel trigonoscuta weevil		G1G2	S1	None	None		Yes	
Trigonoscuta dorothea dorothea	Dorothy's El Segundo Dune weevil		G1T1	S1	None	None		Yes	
Trigonoscuta rothi algodones	Algodones dune weevil		G1G2T1	S1	None	None		No	
Trigonoscuta rothi imperialis	Imperial dune weevil		G1G2T1	S1	None	None		No	
Trigonoscuta rothi punctata	Punctate dune weevil		G1G2T1	S1	None	None		No	
Trigonoscuta rothi rothi	Roth's dune weevil		G1G2T1	S1	None	None		No	
Trigonoscuta sp.	Doyen's trigonoscuta dune weevil		G1Q	S1	None	None		Yes	Yes
Trigonoscuta stantoni	Santa Cruz Island shore weevil		G1	S1	None	None		Yes	
Vandykea tuberculata	serpentine cypress long-horned beetle		G1	S2	None	None		Yes	

INSECTA, Order Mecoptera (scorpionflies)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Orobittacus obscurus	gold rush hanging scorpionfly		G1	S1	None	None		Yes	

INSECTA, Order Diptera (flies)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Ablautus schlingeri	Oso Flaco robber fly		G2	S2	None	None		Yes	
Apiocera warneri	Glamis sand fly		G1G2	S1	None	None		Yes	
Brennania belkini	Belkin's dune tabanid fly		G1G2	S1S2	None	None	IUCN:VU	Yes	
Cophura hurdi	Antioch cophuran robberfly		GX	SX	None	None		Yes	
Efferia antiochi	Antioch efferian robberfly		G1G2	S1S2	None	None		Yes	
Efferia macroxipha	Glamis robberfly		G1G2	S2S3	None	None		Yes	
Metapogon hurdi	Hurd's metapogon robberfly		G1G2	S1S2	None	None		Yes	
Paracoenia calida	Wilbur Springs shore fly		G1	S1	None	None		Yes	
Rhaphiomidas terminatus abdominalis	Delhi Sands flower-loving fly		G1T1	S1	Endangered	None		Yes	
Rhaphiomidas terminatus terminatus	El Segundo flower-loving fly		G1T1	S1	None	None		Yes	
Rhaphiomidas trochilus	San Joaquin Valley giant flower-loving fly		G1	S1	None	None		Yes	

INSECTA, Order Lepidoptera (butterflies and moths)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Adela oplerella	Opler's longhorn moth		G2	S2	None	None		Yes	
Apodemia mormo langei	Lange's metalmark butterfly		G5T1	S1	Endangered	None		Yes	
Areniscythris brachypteris	Oso Flaco flightless moth		G2	S2	None	None		Yes	
Callophrys mossii bayensis	San Bruno elfin butterfly		G4T2	S2	Endangered	None		Yes	
Callophrys mossii hidakupa	San Gabriel Mountains elfin butterfly		G4T1T2	S1S2	None	None	USFS:S	Yes	
Callophrys mossii marinensis	Marin elfin butterfly		G4T1	S2	None	None		Yes	
Callophrys sheridanii comstocki	desert green hairstreak		G5T3T4	S1S2	None	None		No	
Callophrys thornei	Thorne's hairstreak		G3G4T2	S2	None	None	BLM:S	Yes	Yes
Carterocephalus palaemon magnus	Sonoma arctic skipper		G5T5	S1S3	None	None		Yes	
Cercyonis pegala carsonensis	Carson Valley wood nymph		G5T1T2	S1S2	None	None		No	
Chlosyne leanira elegans	Oso Flaco patch butterfly		G4G5T1T2	S1S2	None	None		Yes	
Coenonympha tullia yontockett	Yontocket satyr		G5T1T2	S1S2	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Danaus plexippus plexippus pop. 1	monarch - California overwintering population		G4T1T2Q	S2	Proposed Threatened	None	IUCN:EN USFS:S	Yes	
Euchloe hyantis andrewsi	Andrew's marble butterfly		G3G4T2	S2	None	None		Yes	
Eugnosta busckana	Busck's gallmoth		G1G3	S2S3	None	None		Yes	
Euphilotes allyni	El Segundo blue butterfly		G1?	S1	Endangered	None		Yes	
Euphilotes baueri	Bauer's dotted-blue		G2	S1S2	None	None	USFS:S	No	
Euphilotes enoptes smithi	Smith's blue butterfly		G5T2	S2	Endangered	None		Yes	
Euphilotes glaucon comstocki	Comstock's blue butterfly		G5T2	S2	None	None		Yes	
Euphilotes mojave	Mojave dotted-blue		G3	S3	None	None		No	
Euphydryas editha bayensis	Bay checkerspot butterfly		G4G5T1	S3	Threatened	None		Yes	
Euphydryas editha monoensis	Mono checkerspot butterfly		G4G5T2	S1S2	None	None	USFS:S	Yes	
Euphydryas editha quino	quino checkerspot butterfly		G4G5T1T2	S1S2	Endangered	None		Yes	
Euphyes vestris harbisoni	dun skipper		G5T1	S1S2	None	None		No	
Euproserpinus euterpe	Kern primrose sphinx moth		G1G2	S1	Threatened	None		Yes	Yes

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Glaucopsyche lygdamus palosverdesensis	Palos Verdes blue butterfly		G5T1	S1	Endangered	None		Yes	
Hesperia miriamae longaevicola	White Mountains skipper		G2G3T1T2	S1	None	None		Yes	
Hesperopsis gracielae	MacNeill's sootywing		G2?	S1S2	None	None		No	
Icaricia icarioides albihalos	White Mountains icarioides blue butterfly		G5T2T3	S1	None	None		Yes	
Icaricia icarioides missionensis	Mission blue butterfly		G5T2	S2	Endangered	None		Yes	
Icaricia icarioides moroensis	Morro Bay blue butterfly		G5T2	S2	None	None		Yes	
Icaricia icarioides parapheres	Point Reyes blue butterfly		G5T1T2	S1	None	None		Yes	
Icaricia icarioides pheres	Pheres blue butterfly		G5TX	SX	None	None		Yes	
Icaricia saepiolus albomontanus	White Mountains saepiolus blue butterfly		G5T2	S1	None	None		Yes	
Icaricia saepiolus aureolus	San Gabriel Mountains blue butterfly		G5T1	S1	None	None	USFS:S	Yes	
Lycaena hermes	Hermes copper butterfly		G1	S1	Threatened	None	IUCN:VU USFS:S	Yes	
Lycaena rubidus incana	White Mountains copper		G4?T2T3	S1	None	None		No	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Panoquina errans	wandering (=saltmarsh) skipper		G4	S2	None	None	IUCN:NT	Yes	
Pelochrista hennei	Henne's eucosman moth		G1	S1	None	None		Yes	
Philotiella speciosa bohartorum	Boharts' blue butterfly		G3T1	S1	None	None		Yes	
Plebejus anna lotis	lotis blue butterfly		G4TH	SH	Endangered	None		Yes	
Plebulina emigdionis	San Emigdio blue butterfly		G1G2	S1S2	None	None	USFS:S	Yes	
Polites mardon	mardon skipper		G2	S1	None	None	USFS:S	Yes	
Polites sabuleti albamontana	White Mountains sandhill skipper		G4T2	S1S2	None	None		No	
Pseudocopaeodes eunus eunus	alkali skipper		G3T2	S2	None	None		No	
Pseudocopaeodes eunus obscurus	Carson wandering skipper		G3T1	S2	Endangered	None		Yes	
Pyrgus ruralis lagunae	Laguna Mountains skipper		G4G5T1	S1	Endangered	None		Yes	
Speyeria adiaste adiaste	unsilvered fritillary		G1G2T1	S1S2	None	None		Yes	
Speyeria callippe callippe	callippe silverspot butterfly		G5T1	S1	Endangered	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Speyeria egleis tehachapina	Tehachapi Mountain silverspot butterfly		G5T2	S2	None	None	USFS:S	Yes	
Speyeria nokomis carsonensis	Carson Valley silverspot		G3T1T2	S1	None	None		Yes	
Speyeria zerene behrensii	Behren's silverspot butterfly		G5T1	S1	Endangered	None		Yes	
Speyeria zerene hippolyta	Oregon silverspot butterfly		G5T1	S1	Threatened	None		Yes	
Speyeria zerene myrtleae	Myrtle's silverspot butterfly		G5T1	S1	Endangered	None		Yes	Yes
Speyeria zerene sonomensis	Sonoma zerene fritillary		G5T1	S1	None	None		Yes	

INSECTA, Order Trichoptera (caddisflies)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Cryptochia denningi	Denning's cryptic caddisfly		G1G2	S1S2	None	None		Yes	
Cryptochia excella	Kings Canyon cryptochian caddisfly		G1G2	S2S3	None	None		Yes	
Cryptochia shasta	confusion caddisfly		G1G2	S1	None	None		Yes	
Desmona bethula	amphibious caddisfly		G2G3	S2S3	None	None		Yes	
Diplectrona californica	California diplectronan caddisfly		G1G2	S1	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Ecclisomyia bilera	Kings Creek ecclysomyian caddisfly		G2	S2	None	None		Yes	
Farula praelonga	long-tailed caddisfly		G1G2	S1S2	None	None		Yes	
Goeracea oregona	Sagehen Creek goeracean caddisfly		G3	S1S2	None	None		Yes	
Lepidostoma ermanae	Cold Spring caddisfly		G1	S1	None	None		Yes	
Limnephilus atercus	Fort Dick limnephilus caddisfly		G3G4	S1S2	None	None		Yes	
Neothremma genella	golden-horned caddisfly		G1G2	S2S3	None	None		Yes	
Neothremma siskiyou	Siskiyou caddisfly		G1G2	S1	None	None		No	
Parapsyche extensa	King's Creek parapsyche caddisfly		G1	S1	None	None		Yes	
Rhyacophila lineata	Castle Crags rhyacophilan caddisfly		G1	S1	None	None		Yes	
Rhyacophila mosana	bilobed rhyacophilan caddisfly		G1Q	S1	None	None		Yes	
Rhyacophila spinata	spiny rhyacophilan caddisfly		G1G2	S3	None	None		Yes	

INSECTA, Order Hymenoptera (ants, bees, and wasps)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Andrena blennospermatis	Blennosperma vernal pool andrenid bee		G2	S1	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Andrena macswaini	An andrenid bee		G2	S2	None	None		Yes	
Andrena subapasta	An andrenid bee		G1G2	S1S2	None	None		Yes	
Argochrysis lassenae	Lassen cuckoo wasp		G2	S2	None	None		Yes	
Ashmeadiella chumashae	Channel Islands leaf-cutter bee		G2?	S3	None	None		Yes	
Bombus caliginosus	obscure bumble bee		G2G3	S1S2	None	None	IUCN:VU	Yes	
Bombus crotchii	Crotch's bumble bee		G2	S2	None	Candidate Endangered	IUCN:EN	Yes	Yes
Bombus franklini	Franklin's bumble bee		G1	SH	Endangered	Candidate Endangered	IUCN:CR	Yes	Yes
Bombus morrisoni	Morrison bumble bee		G3	S1S2	None	None	IUCN:VU	Yes	
Bombus occidentalis	western bumble bee		G3	S1	None	Candidate Endangered	IUCN:VU USFS:S	Yes	Yes
Bombus pensylvanicus	American bumble bee		G3G4	S2	None	None	IUCN:VU	Yes	
Bombus suckleyi	Suckley's cuckoo bumble bee		G2G3	S1	Proposed Endangered	Candidate Endangered	IUCN:CR	Yes	Yes
Ceratochrysis bradleyi	Bradley's cuckoo wasp		G1	S1	None	None		Yes	
Ceratochrysis gracilis	Piute Mountains cuckoo wasp		G1	S1	None	None		Yes	
Ceratochrysis longimala	Desert cuckoo wasp		G1	S1	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Ceratochrysis menkei	Menke's cuckoo wasp		G2	S2	None	None		Yes	
Chrysis tularensis	Tulare cuckoo wasp		G1G2	S2	None	None		Yes	
Cleptes humboldti	Humboldt cuckoo wasp		G1G2	S1S2	None	None		Yes	
Dufourea stagei	Stage's dufourine bee		G1G2	S1	None	None		Yes	
Eucerceris ruficeps	redheaded sphecid wasp		G1G3	S2	None	None		Yes	
Euparagia unidentata	Algodones euparagia		G1G2	S1S2	None	None		Yes	
Habropoda pallida	white faced bee		G3	S3	None	None		No	
Halictus harmonius	haromonius halictid bee		G3	S3	None	None		Yes	
Hedychridium argenteum	Riverside cuckoo wasp		G1G2	S1S2	None	None		Yes	
Hedychridium milleri	Borax Lake cuckoo wasp		G1	S1	None	None		Yes	
Lasioglossum channelense	Channel Island sweat bee		G3	S3	None	None		Yes	
Melitta californica	California mellitid bee		G4?	S2?	None	None		Yes	
Microbembex elegans	Algodones elegant sand wasp		G1G2	S1	None	None		Yes	
Minymischa ventura	Ventura cuckoo wasp		GU	SU	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Myrmosula pacifica	Antioch multilid wasp		GH	SH	None	None		Yes	
Neolarra alba	white cuckoo bee		GH	SH	None	None		Yes	
Paranomada californica	California cuckoo bee		G1	S1	None	None		Yes	
Parnopes borregoensis	Borrego parnopes cuckoo wasp		G1G2	S1S2	None	None		Yes	
Perdita algodones	Algodones perdita		G1	S1	None	None		Yes	
Perdita frontalis	Imperial Perdita		G1G2	S1S2	None	None		Yes	
Perdita hirticeps luteocincta	yellow-banded andrenid bee		GNRTX	SX	None	None		Yes	
Perdita scitula antiochensis	Antioch andrenid bee		G1T1	S2	None	None		Yes	
Perdita stephanomeriae	a miner bee		GNR	S1S2	None	None		Yes	
Philanthus nasalis	Antioch specid wasp		G2	S2	None	None		Yes	
Protodufourea wasbaueri	Wasbauer's protodufourea bee		G1	S1	None	None		Yes	
Protodufourea zavortinki	Zavortink's protodufourea bee		G1	S1	None	None		Yes	
Rhopalolemma robertsi	Roberts' rhopalolemma bee		G1	S1	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Sedomaya glamisensis	Glamis night tiphiid		G1	S1	None	None		No	
Sphaeropthalma ecarinata	Glamis night mutillid		G1	S1	None	None		No	
Sphecodogastra antiochensis	Antioch Dunes halcitid bee		G1	S1	None	None		Yes	
Stictiella villegasi	Algodones sand wasp		G1	S1	None	None		No	
Trachusa gummifera	San Francisco Bay Area leaf-cutter bee		G1	S1	None	None		Yes	

Fishes

PETROMYZONTIDAE (lampreys)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Entosphenus folletti	northern California brook lamprey		G1G2	S1S2	None	None	CDFW:SSC	Yes	
Entosphenus lethophagus	Pit-Klamath brook lamprey		G3G4	S3	None	None	AFS:VU CDFW:SSC IUCN:LC	Yes	
Entosphenus similis	Klamath River lamprey		G3G4Q	S3	None	None	AFS:TH CDFW:SSC IUCN:NT USFS:S	Yes	
Entosphenus tridentatus	Pacific lamprey		G4	S3	None	None	AFS:VU BLM:S CDFW:SSC IUCN:LC USFS:S	Yes	
Entosphenus tridentatus ssp. 1	Goose Lake lamprey		G4T1	S1	None	None	AFS:VU CDFW:SSC USFS:S	Yes	
Lampetra ayresii	western river lamprey		G5	S3	None	None	AFS:VU CDFW:SSC IUCN:LC	No	
Lampetra hubbsi	Kern brook lamprey		G1G2	S1S2	None	None	AFS:TH CDFW:SSC IUCN:VU USFS:S	Yes	
Lampetra richardsoni	western brook lamprey		G4G5	S3S4	None	None	CDFW:SSC IUCN:LC USFS:S	Yes	

ACIPENSERIDAE (sturgeon)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Acipenser medirostris pop. 1	green sturgeon - southern DPS		G2T1	S1	Threatened	None	AFS:VU CDFW:SSC IUCN:EN	Yes	
Acipenser medirostris pop. 2	green sturgeon - northern DPS		G2T1	S1	None	None	AFS:VU CDFW:SSC IUCN:VU	Yes	
Acipenser transmontanus	white sturgeon		G3	S2	None	Candidate Threatened	AFS:EN CDFW:SSC IUCN:VU	No	

SALMONIDAE (trout and salmon)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Oncorhynchus clarkii clarkii	coast cutthroat trout		G5T4	S3	None	None	AFS:VU CDFW:SSC USFS:S	Yes	
Oncorhynchus clarkii henshawi	Lahontan cutthroat trout		G5T3	S2	Threatened	None	AFS:TH CDFW:SSC	Yes	
Oncorhynchus clarkii seleniris	Paiute cutthroat trout		G5T1	S1	Threatened	None	AFS:EN CDFW:SSC	Yes	
Oncorhynchus gorbuscha	pink salmon		G5	S1	None	None		Yes	
Oncorhynchus keta	chum salmon		G5	S1	None	None		No	
Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU		G5T2Q	S2	Threatened	Threatened	AFS:TH	Yes	Yes

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU		G5T2Q	S2	Endangered	Endangered	AFS:EN	Yes	Yes
Oncorhynchus mykiss aguabonita	California golden trout		G5T1	S1	None	None	AFS:TH CDFW:SSC USFS:S	Yes	
Oncorhynchus mykiss aquilarum	Eagle Lake rainbow trout		G5T1	S1	None	None	AFS:TH CDFW:SSC USFS:S	Yes	
Oncorhynchus mykiss gilberti	Kern River rainbow trout		G5T1Q	S1	None	None	AFS:TH CDFW:SSC USFS:S	Yes	
Oncorhynchus mykiss irideus pop. 1	steelhead - Klamath Mountains Province DPS		G5T3Q	S2	None	None	CDFW:SSC USFS:S	No	Yes
Oncorhynchus mykiss irideus pop. 10	steelhead - southern California DPS		G5T1Q	S1	Endangered	Candidate Endangered	AFS:EN	Yes	Yes
Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS		G5T2Q	S2	Threatened	None	AFS:TH CDFW:SSC	Yes	Yes
Oncorhynchus mykiss irideus pop. 48	steelhead - northern California DPS summer-run		G5T2Q	S2	Threatened	Endangered	AFS:TH	Yes	
Oncorhynchus mykiss irideus pop. 49	steelhead - northern California DPS winter-run		G5T3Q	S3	Threatened	None	AFS:TH CDFW:SSC	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS		G5T3Q	S3	Threatened	None	AFS:TH CDFW:SSC	Yes	Yes
Oncorhynchus mykiss irideus pop. 9	steelhead - south-central California coast DPS		G5T2Q	S2	Threatened	None	AFS:TH CDFW:SSC	Yes	Yes
Oncorhynchus mykiss ssp. 1	Goose Lake redband trout		G5T2Q	S2	None	None	AFS:VU CDFW:SSC USFS:S	Yes	
Oncorhynchus mykiss ssp. 2	McCloud River redband trout		G5T1T2	S1S2	None	None	AFS:VU CDFW:SSC USFS:S	Yes	
Oncorhynchus mykiss ssp. 3	Warner Valley redband trout		G5T2Q	S1?	None	None	AFS:VU USFS:S	No	
Oncorhynchus mykiss whitei	Little Kern golden trout		G5T2	S3	Threatened	None	AFS:EN CDFW:SSC	Yes	
Oncorhynchus tshawytscha pop. 11	chinook salmon - Central Valley spring-run ESU		G5T2Q	S2	Threatened	Threatened	AFS:TH	Yes	Yes
Oncorhynchus tshawytscha pop. 13	chinook salmon - Central Valley fall / late fall-run ESU		G5T3Q	S3	None	None	AFS:VU CDFW:SSC USFS:S	No	Yes
Oncorhynchus tshawytscha pop. 14	chinook salmon - southern Oregon/northern California coastal		G5T3Q	S2	Candidate	None	CDFW:SSC	No	
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU		G5T2Q	S2	Threatened	None	AFS:TH CDFW:SSC	Yes	Yes

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Oncorhynchus tshawytscha pop. 30	chinook salmon - upper Klamath and Trinity Rivers ESU		G5T2Q	S2	Candidate	Threatened	CDFW:SSC USFS:S	Yes	
Oncorhynchus tshawytscha pop. 7	chinook salmon - Sacramento River winter-run ESU		G5T1Q	S2	Endangered	Endangered	AFS:EN	Yes	
Prosopium williamsoni	mountain whitefish		G5	S3	None	None	CDFW:SSC	Yes	
Salvelinus confluentus	bull trout		G5	SX	Threatened	Endangered	IUCN:VU	Yes	

OSMERIDAE (smelt)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Hypomesus transpacificus	Delta smelt		G1	S1	Threatened	Endangered	AFS:TH IUCN:CR	Yes	
Spirinchus thaleichthys	longfin smelt		G5	S1	None	Threatened	IUCN:LC	Yes	
Spirinchus thaleichthys pop. 2	longfin smelt - San Francisco Bay-Delta DPS		G5TNRQ	S1	Endangered	Threatened	IUCN:LC	Yes	
Thaleichthys pacificus	eulachon		G5	S1	Threatened	None	CDFW:SSC IUCN:LC	Yes	Yes

CYPRINIDAE (minnows and carp)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Gila coerulea	blue chub		G3G4	S2S3	None	None	CDFW:SSC IUCN:LC	Yes	
Gila elegans	bonytail		G1	S1	Endangered	Endangered	AFS:EN IUCN:CR	Yes	
Gila orcuttii	arroyo chub		G1	S2	None	None	AFS:VU CDFW:SSC IUCN:VU USFS:S	Yes	
Hesperoleucus mitrulus	northern roach		G2	S2	None	None	AFS:VU CDFW:SSC	Yes	
Hesperoleucus parvipinnis	Gualala roach		G3	S3	None	None	CDFW:SSC	Yes	
Hesperoleucus symmetricus serpentinus	Red Hills roach		GNRT1	S1	None	None	AFS:VU BLM:S CDFW:SSC	Yes	
Hesperoleucus symmetricus symmetricus	central California roach		GNRT3	S3	None	None	CDFW:SSC	Yes	
Hesperoleucus venustus navarroensis	northern coastal roach		GNRT3	S3	None	None	CDFW:SSC	Yes	
Hesperoleucus venustus subditus	southern coastal roach		GNRT2	S2	None	None	CDFW:SSC	Yes	
Hesperoleucus venustus x H. symmetricus	Clear Lake roach		G3	S3	None	None	CDFW:SSC	No	
Lavinia exilicauda chi	Clear Lake hitch		G4T1	S1	None	Threatened	AFS:VU USFS:S	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Lavinia exilicauda exilicauda	Sacramento hitch		G4T3	S3	None	None	CDFW:SSC	No	
Lavinia exilicauda harengus	Monterey hitch		G4T3	S3	None	None	CDFW:SSC	Yes	
Mylopharodon conocephalus	hardhead		G3	S3	None	None	CDFW:SSC IUCN:LC USFS:S	Yes	
Pogonichthys macrolepidotus	Sacramento splittail		G3	S3	None	None	AFS:VU CDFW:SSC IUCN:LC	Yes	
Ptychocheilus lucius	Colorado pikeminnow		G1	SX	Endangered	Endangered	CDFW:FP IUCN:VU	Yes	
Rhinichthys gabrielino	Santa Ana speckled dace		G5T1	S1	Proposed Threatened	None	AFS:TH CDFW:SSC USFS:S	Yes	
Rhinichthys nevadensis caldera	Long Valley speckled dace		G5T1	S1	Proposed Endangered	None	AFS:EN CDFW:SSC	Yes	
Rhinichthys nevadensis nevadensis	Amargosa speckled dace		GNRTNR	S2S3	None	None	AFS:TH BLM:S CDFW:SSC	Yes	Yes
Siphateles bicolor mohavensis	Mohave tui chub		G4T1	S1	Endangered	Endangered	AFS:EN CDFW:FP	Yes	
Siphateles bicolor pectinifer	Lahontan Lake tui chub		G4T3	S1S2	None	None	CDFW:SSC	Yes	
Siphateles bicolor snyderi	Owens tui chub		G4T1	S1	Endangered	Endangered	AFS:EN	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Siphateles bicolor ssp. 11	High Rock Springs tui chub		G4TX	SX	None	None		Yes	Yes
Siphateles bicolor ssp. 12	Eagle Lake tui chub		G4T1T2	S1S2	None	None	CDFW:SSC	Yes	Yes
Siphateles bicolor ssp. 14	Pit River tui chub		G4T1T3	S1S3	None	None		No	Yes
Siphateles bicolor thalassinus	Goose Lake tui chub		G4T2T3	S2	None	None	AFS:TH CDFW:SSC	Yes	
Siphateles bicolor vaccaceps	Cow Head tui chub		G4T1	S1	None	None	AFS:EN BLM:S CDFW:SSC	Yes	

CATOSTOMIDAE (suckers)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Catostomus fumeiventris	Owens sucker		G3	S3	None	None	CDFW:SSC IUCN:LC	Yes	
Catostomus lahontan	Lahontan mountain sucker		GNR	S2	None	None	CDFW:SSC	Yes	
Catostomus latipinnis	flannelmouth sucker		G3G4	S1	None	None	IUCN:LC	Yes	
Catostomus microps	Modoc sucker		G2G3	S2	Delisted	Endangered	AFS:EN CDFW:FP IUCN:NT	Yes	
Catostomus occidentalis lacusanserinus	Goose Lake sucker		G5T2Q	S1	None	None	AFS:VU CDFW:SSC USFS:S	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Catostomus rimiculus ssp. 1	Jenny Creek sucker		G5T2Q	S1	None	None	AFS:VU	No	
Catostomus santaanae	Santa Ana sucker		G1	S1	Threatened	None	AFS:TH CDFW:SSC IUCN:EN	Yes	
Catostomus snyderi	Klamath largescale sucker		G3	S3	None	None	AFS:TH CDFW:SSC IUCN:NT	Yes	
Chasmistes brevirostris	shortnose sucker		G1G2	S1	Endangered	Endangered	AFS:EN CDFW:FP IUCN:EN	Yes	
Deltistes luxatus	Lost River sucker		G2?	S2	Endangered	Endangered	AFS:EN CDFW:FP IUCN:EN	Yes	
Xyrauchen texanus	razorback sucker		G1	S2	Endangered	Endangered	AFS:EN CDFW:FP IUCN:CR	Yes	

CYPRINODONTIDAE (killifishes)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Cyprinodon macularius	desert pupfish		G1	S1	Endangered	Endangered	AFS:EN IUCN:VU	Yes	
Cyprinodon nevadensis amargosae	Amargosa pupfish		G2T1T2	S1S2	None	None	AFS:VU BLM:S CDFW:SSC IUCN:VU	Yes	
Cyprinodon nevadensis nevadensis	Saratoga Springs pupfish		G2T1	S1	None	None	AFS:TH CDFW:SSC IUCN:VU	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Cyprinodon nevadensis shoshone	Shoshone pupfish		G2T1	S1	None	None	AFS:EN CDFW:SSC IUCN:VU	Yes	
Cyprinodon radiosus	Owens pupfish		G1	S2	Endangered	Endangered	AFS:EN CDFW:FP IUCN:EN	Yes	
Cyprinodon salinus milleri	Cottonball Marsh pupfish		G1T1Q	S1	None	Threatened	AFS:TH IUCN:EN	Yes	
Cyprinodon salinus salinus	Salt Creek pupfish		G1T1	S1	None	None	AFS:VU CDFW:SSC IUCN:EN	Yes	

GASTEROSTEIDAE (sticklebacks)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Gasterosteus aculeatus microcephalus	resident threespine stickleback	South of Pt. Conception only	G5T2T3	S2S3	None	None		No	
Gasterosteus aculeatus williamsoni	unarmored threespine stickleback		G5T1	S1	Endangered	Endangered	AFS:EN CDFW:FP	Yes	

CENTRARCHIDAE (sunfishes)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Archoplites interruptus	Sacramento perch	Within native range only	G1	S1	None	None	AFS:TH CDFW:SSC IUCN:EN	Yes	

EMBIOTOCIDAE (surfperches)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Hysterocarpus traskii lagunae	Clear Lake tule perch		G5T3	S3	None	None	CDFW:SSC	Yes	
Hysterocarpus traskii pomo	Russian River tule perch		G5T4	S4	None	None	AFS:VU CDFW:SSC	Yes	
Hysterocarpus traskii traskii	Sacramento-San Joaquin tule perch		G5T2T3	S2S3	None	None		No	

GOBIIDAE (gobies)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Eucyclogobius newberryi	tidewater goby		G3	S3	Endangered	None	AFS:EN CDFW:SSC IUCN:NT	Yes	

COTTIDAE (sculpins)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Cottus asper ssp.	Clear Lake prickly sculpin		G5T1	SNR	None	None	CDFW:SSC	No	
Cottus asperrimus	rough sculpin		G2	S2	None	Threatened	AFS:VU BLM:S CDFW:FP IUCN:NT	Yes	
Cottus gulosus	riffle sculpin		G5	S4	None	None	CDFW:SSC IUCN:LC	No	
Cottus klamathensis klamathensis	Upper Klamath marbled sculpin		G4T2	S1S2	None	None	CDFW:SSC	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Cottus klamathensis macrops	bigeye marbled sculpin		G4T2T3	S2S3	None	None	AFS:VU CDFW:SSC	Yes	
Cottus klamathensis polyporus	Lower Klamath marbled sculpin		G4T2T4	S2S4	None	None	CDFW:SSC	Yes	
Cottus perplexus	reticulate sculpin		G4	S2S3	None	None	IUCN:LC	No	

Amphibians

AMBYSTOMATIDAE (mole salamanders)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Ambystoma californiense pop. 1	California tiger salamander - central California DPS		G2G3T3	S3	Threatened	Threatened	CDFW:WL IUCN:VU	Yes	
Ambystoma californiense pop. 2	California tiger salamander - Santa Barbara County DPS		G2G3T2	S2	Endangered	Threatened	CDFW:WL IUCN:VU	Yes	
Ambystoma californiense pop. 3	California tiger salamander - Sonoma County DPS		G2G3T2	S2	Endangered	Threatened	CDFW:WL IUCN:VU	Yes	
Ambystoma macrodactylum croceum	Santa Cruz long-toed salamander		G5T1T2	S2	Endangered	Endangered	CDFW:FP	Yes	
Ambystoma macrodactylum sigillatum	southern long-toed salamander		G5T4	S2	None	None	CDFW:SSC	Yes	

DICAMPTODONTIDAE (giant salamanders)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Dicamptodon ensatus	California giant salamander		G2G3	S2S3	None	None	CDFW:SSC IUCN:NT	Yes	

RHYACOTRITONIDAE (Olympic salamanders)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Rhyacotriton variegatus	southern torrent salamander		G3?	S2S3	None	None	CDFW:SSC IUCN:LC USFS:S	Yes	

SALAMANDRIDAE (newts)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Taricha rivularis	red-bellied newt		G2	S2	None	None	CDFW:SSC IUCN:LC	Yes	
Taricha torosa	Coast Range newt	Monterey Co. & south only	G4	S4	None	None	CDFW:SSC	Yes	

PLETHODONTIDAE (lungless salamanders)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Aneides niger	Santa Cruz black salamander		G3	S3	None	None	CDFW:SSC	Yes	Yes
Batrachoseps altasierrae	Greenhorn Mountains slender salamander		G2	S2	None	None		Yes	
Batrachoseps bramei	Fairview slender salamander		G3	S3	None	None	USFS:S	Yes	
Batrachoseps campi	Inyo Mountains slender salamander		G3	S3	None	None	BLM:S CDFW:SSC IUCN:EN USFS:S	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Batrachoseps diabolicus	Hell Hollow slender salamander		G3	S3	None	None	IUCN:DD	No	
Batrachoseps gabrieli	San Gabriel slender salamander		G2G3	S2S3	None	None	IUCN:DD USFS:S	Yes	
Batrachoseps incognitus	San Simeon slender salamander		G2	S2	None	None	IUCN:DD USFS:S	No	
Batrachoseps kawia	Sequoia slender salamander		G2	S2	None	None	IUCN:DD	No	
Batrachoseps luciae	Santa Lucia slender salamander		G3	S3	None	None	IUCN:LC	No	
Batrachoseps major aridus	desert slender salamander		G4T1	S1	Endangered	Endangered		Yes	
Batrachoseps minor	lesser slender salamander		G1	S1	None	None	CDFW:SSC IUCN:DD USFS:S	Yes	
Batrachoseps pacificus	Channel Islands slender salamander		G3G4	S3S4	None	None	IUCN:LC	Yes	
Batrachoseps regius	Kings River slender salamander		G2G3	S2S3	None	None	IUCN:VU USFS:S	Yes	
Batrachoseps relictus	relictual slender salamander		G1	S1	Proposed Endangered	None	CDFW:SSC IUCN:DD USFS:S	Yes	Yes
Batrachoseps robustus	Kern Plateau salamander		G3	S3	None	None	IUCN:NT	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Batrachoseps simatus	Kern Canyon slender salamander		G2G3	S2S3	Proposed Threatened	Threatened	IUCN:VU USFS:S	Yes	
Batrachoseps stebbinsi	Tehachapi slender salamander		G2G3	S2	None	Threatened	BLM:S IUCN:VU	Yes	
Batrachoseps wakei	Arguello slender salamander		G1	S1	None	None		Yes	
Ensatina eschscholtzii croceater	yellow-blotched salamander		G5T3	S3	None	None	BLM:S CDFW:WL USFS:S	Yes	
Ensatina eschscholtzii klauberi	large-blotched salamander		G5T2?	S3	None	None	CDFW:WL USFS:S	Yes	
Hydromantes brunus	limestone salamander		G2G3	S2S3	None	Threatened	BLM:S CDFW:FP IUCN:VU USFS:S	Yes	
Hydromantes platycephalus	Mount Lyell salamander		G4	S4	None	None	CDFW:WL IUCN:LC	Yes	
Hydromantes shastae	Shasta salamander		G3	S3	None	Threatened	BLM:S IUCN:VU USFS:S	Yes	Yes
Plethodon asupak	Scott Bar salamander		G2G3	S3	None	Threatened	IUCN:VU	Yes	Yes
Plethodon elongatus	Del Norte salamander		G4	S3	None	None	CDFW:WL IUCN:NT	Yes	
Plethodon stormi	Siskiyou Mountains salamander		G3?	S3	None	Threatened	IUCN:EN USFS:S	Yes	

ASCAPHIDAE (tailed frogs)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Ascaphus truei	Pacific tailed frog		G4	S3S4	None	None	CDFW:SSC IUCN:LC	Yes	

SCAPHIOPODIDAE (spadefoot toads)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Scaphiopus couchii	Couch's spadefoot		G5	S2	None	None	BLM:S CDFW:SSC IUCN:LC	Yes	
Spea hammondii	western spadefoot		G2G3	S3S4	Proposed Threatened	None	BLM:S CDFW:SSC IUCN:NT	Yes	

BUFONIDAE (true toads)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Anaxyrus californicus	arroyo toad		G2G3	S2	Endangered	None	CDFW:SSC IUCN:EN	Yes	Yes
Anaxyrus canorus	Yosemite toad		G2	S2	Threatened	None	CDFW:SSC IUCN:EN USFS:S	Yes	Yes
Anaxyrus exsul	black toad		G1	S1	None	Threatened	BLM:S CDFW:FP IUCN:VU USFS:S	Yes	Yes
Incilius alvarius	Sonoran Desert toad		G5	SH	None	None	CDFW:SSC IUCN:LC	Yes	Yes

RANIDAE (true frogs)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Lithobates pipiens	northern leopard frog	Native populations only	G5	S2	None	None	CDFW:SSC IUCN:LC	Yes	Yes
Lithobates yavapaiensis	lowland leopard frog		G4	SX	None	None	BLM:S CDFW:SSC IUCN:LC	Yes	Yes
Rana aurora	northern red-legged frog		G4	S3	None	None	CDFW:SSC IUCN:LC USFS:S	Yes	Yes
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS		G3T4	S4	None	None	BLM:S CDFW:SSC USFS:S	Yes	
Rana boylii pop. 2	foothill yellow-legged frog - Feather River DPS		G3T2	S2	Threatened	Threatened	BLM:S USFS:S	Yes	
Rana boylii pop. 3	foothill yellow-legged frog - north Sierra DPS		G3T2	S2	None	Threatened	BLM:S USFS:S	Yes	
Rana boylii pop. 4	foothill yellow-legged frog - central coast DPS		G3T2	S2	Threatened	Endangered	BLM:S USFS:S	Yes	
Rana boylii pop. 5	foothill yellow-legged frog - south Sierra DPS		G3T2	S2	Endangered	Endangered	BLM:S USFS:S	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Rana boylii pop. 6	foothill yellow-legged frog - south coast DPS		G3T1	S1	Endangered	Endangered	BLM:S USFS:S	Yes	
Rana cascadae	Cascades frog		G3	S3	None	Candidate Endangered	CDFW:SSC IUCN:NT USFS:S	Yes	
Rana draytonii	California red-legged frog		G2G3	S2S3	Threatened	None	CDFW:SSC IUCN:VU	Yes	Yes
Rana muscosa	southern mountain yellow-legged frog		G1	S2	Endangered	Endangered	CDFW:WL IUCN:EN USFS:S	Yes	Yes
Rana pretiosa	Oregon spotted frog		G2	SH	Threatened	None	BLM:S CDFW:SSC IUCN:VU	Yes	
Rana sierrae	Sierra Nevada yellow-legged frog		G2	S2	Endangered	Threatened	CDFW:WL IUCN:EN USFS:S	Yes	Yes

Reptiles

CHELONIIDAE (sea turtles)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Chelonia mydas	green turtle		G3	S1	Threatened	None	IUCN:EN	Yes	

KINOSTERNIDAE (musk and mud turtles)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Kinosternon sonoriense	Sonoran mud turtle		G3	SH	None	None	CDFW:SSC IUCN:NT	Yes	

EMYDIDAE (box and water turtles)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Actinemys marmorata	northwestern pond turtle		G2	SNR	Proposed Threatened	None	BLM:S CDFW:SSC IUCN:VU USFS:S	Yes	
Actinemys pallida	southwestern pond turtle		G2G3	SNR	Proposed Threatened	None	BLM:S CDFW:SSC IUCN:VU USFS:S	Yes	

TESTUDINIDAE (land tortoises)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Gopherus agassizii	desert tortoise		G3	S2S3	Threatened	Threatened	IUCN:CR	Yes	

GEKKONIDAE (geckos)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Coleonyx switaki	barefoot banded gecko		G4	S3	None	Threatened	BLM:S IUCN:LC	Yes	
Coleonyx variegatus abbotti	San Diego banded gecko		G5T5	S1S2	None	None	CDFW:SSC	Yes	

CROTAPHYTIDAE (collared and leopard lizards)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Gambelia copeii	Cope's leopard lizard		G5	S1S2	None	None	CDFW:SSC IUCN:LC	Yes	
Gambelia sila	blunt-nosed leopard lizard		G1	S2	Endangered	Endangered	CDFW:FP IUCN:EN	Yes	

PHRYNOSOMATIDAE (spiny lizards)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Phrynosoma blainvillii	coast horned lizard		G4	S4	None	None	BLM:S CDFW:SSC IUCN:LC	Yes	
Phrynosoma mcallii	flat-tailed horned lizard		G3	S3	None	None	BLM:S CDFW:SSC IUCN:NT	Yes	
Sceloporus graciosus graciosus	northern sagebrush lizard		G5T5	S3	None	None	BLM:S	Yes	
Uma inornata	Coachella Valley fringe-toed lizard		G1Q	S1	Threatened	Endangered	IUCN:EN	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Uma notata	Colorado Desert fringe-toed lizard		G3	S2	None	None	BLM:S CDFW:SSC IUCN:NT	Yes	
Uma scoparia	Mojave fringe-toed lizard		G3G4	S3S4	None	None	BLM:S CDFW:SSC IUCN:LC	Yes	

XANTUSIIDAE (night lizards)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Xantusia gracilis	sandstone night lizard		G1	S2	None	None	CDFW:SSC IUCN:VU	Yes	
Xantusia riversiana	island night lizard		G3	S3	Delisted	None	IUCN:LC	Yes	
Xantusia vigilis sierrae	Sierra night lizard		G5T1	S1	None	None	CDFW:SSC USFS:S	Yes	Yes

SCINCIDAE (skinks)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Plestiodon skiltonianus interparietalis	Coronado skink		G5T5	S2S3	None	None	BLM:S CDFW:WL	Yes	

TEIIDAE (whiptails and relatives)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Aspidoscelis hyperythra	orange-throated whiptail		G5	S2S3	None	None	CDFW:WL IUCN:LC USFS:S	Yes	
Aspidoscelis tigris stejnegeri	coastal whiptail		G5T5	S3	None	None	CDFW:SSC	Yes	

ANGUIDAE (alligator lizards)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Elgaria panamintina	Panamint alligator lizard		G3	S3	None	None	BLM:S CDFW:SSC IUCN:VU USFS:S	Yes	

ANNIELLIDAE (legless lizards)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Anniella alexanderae	Temblor legless lizard		G1	S1	None	Candidate Endangered	CDFW:SSC	Yes	Yes
Anniella campi	Southern Sierra legless lizard		G1G2	S2	None	None	CDFW:SSC USFS:S	Yes	Yes
Anniella grinnelli	Bakersfield legless lizard		G2G3	S2S3	None	None	CDFW:SSC	Yes	Yes
Anniella pulchra	Northern California legless lizard		G3	S2S3	None	None	CDFW:SSC USFS:S	Yes	Yes
Anniella spp.	California legless lizard		G3G4	S3S4	None	None	CDFW:SSC	Yes	Yes

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Anniella stebbinsi	Southern California legless lizard		G3	S3	None	None	CDFW:SSC USFS:S	Yes	Yes

HELODERMATIDAE (venomous lizards)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Heloderma suspectum cinctum	banded Gila monster		G4T3	S1	None	None	BLM:S CDFW:SSC	Yes	Yes

BOIDAE (boas)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Charina umbratica	southern rubber boa		G2G3	S2	None	Threatened	IUCN:VU USFS:S	Yes	

COLUBRIDAE (egg-laying snakes)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Arizona elegans occidentalis	California glossy snake		G5T2	S2	None	None	CDFW:SSC	Yes	
Diadophis punctatus modestus	San Bernardino ringneck snake		G5T2T3	S2?	None	None	USFS:S	Yes	
Diadophis punctatus regalis	regal ringneck snake		G5TNR	S2	None	None	CDFW:SSC	Yes	
Diadophis punctatus similis	San Diego ringneck snake		G5T4	S2?	None	None	USFS:S	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Masticophis flagellum ruddocki	San Joaquin coachwhip		G5T2T3	S3	None	None	CDFW:SSC	Yes	
Masticophis fuliginosus	Baja California coachwhip		G5	S1S2	None	None	CDFW:SSC	Yes	
Masticophis lateralis euryxanthus	Alameda whipsnake		G4T2	S2	Threatened	Threatened		Yes	
Pituophis catenifer pumilus	Santa Cruz Island gophersnake		G5T1T2	S1?	None	None	CDFW:WL	No	
Salvadora hexalepis virgultea	coast patch-nosed snake		G5T4	S3	None	None	CDFW:SSC	Yes	

NATRICIDAE (live-bearing snakes)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Thamnophis gigas	giant gartersnake		G2	S2	Threatened	Threatened	IUCN:VU	Yes	
Thamnophis hammondii	two-striped gartersnake		G4	S3S4	None	None	BLM:S CDFW:SSC IUCN:LC USFS:S	Yes	
Thamnophis hammondii pop. 1	Santa Catalina gartersnake		G4T1?	S1	None	None		No	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Thamnophis sirtalis pop. 1	south coast gartersnake	Coastal plain from Ventura Co. to San Diego Co., from sea level to about 850 m.	G5T1T2	S1S2	None	None	CDFW:SSC	Yes	Yes
Thamnophis sirtalis tetrataenia	San Francisco gartersnake		G5T2Q	S2	Endangered	Endangered	CDFW:FP	Yes	

VIPERIIDAE (vipers)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Crotalus ruber	red-diamond rattlesnake		G4	S3	None	None	CDFW:SSC IUCN:LC USFS:S	Yes	

Birds

ANATIDAE (ducks, geese, and swans)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Anser albifrons elgasi	tule greater white-fronted goose	Wintering	G5T3	S3	None	None	CDFW:SSC	No	
Aythya americana	redhead	Nesting	G5	S3	None	None	CDFW:SSC IUCN:LC	No	
Aythya valisineria	canvasback	Nesting	G5	S2	None	None	IUCN:LC	No	
Branta bernicla	brant	Wintering & staging	G5	S2	None	None	CDFW:SSC IUCN:LC	No	
Branta hutchinsii leucopareia	cackling (=Aleutian Canada) goose	Wintering	G5T3	S3	Delisted	None	CDFW:WL	Yes	
Bucephala islandica	Barrow's goldeneye	Nesting	G5	S1	None	None	CDFW:SSC IUCN:LC	No	
Dendrocygna bicolor	fulvous whistling-duck	Nesting	G5	S1	None	None	CDFW:SSC IUCN:LC	Yes	
Histrionicus histrionicus	harlequin duck	Nesting	G4	S2	None	None	CDFW:SSC IUCN:LC	Yes	

PHASIANIDAE (grouse and ptarmigan)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Bonasa umbellus	ruffed grouse		G5	S3S4	None	None	CDFW:WL IUCN:LC	Yes	
Centrocercus urophasianus	greater sage-grouse	Nesting & leks	G3G4	S2S3	Proposed Threatened	Candidate Endangered	BLM:S CDFW:SSC IUCN:NT USFS:S	Yes	Yes

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Dendragapus fuliginosus howardi	Mount Pinos sooty grouse		G5T2T3	S3	None	None	CDFW:SSC	Yes	Yes
Tympanuchus phasianellus columbianus	Columbian sharp-tailed grouse		G5T3	SX	None	None	CDFW:SSC	No	

ODONTOPHORIDAE (partridge and quail)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Callipepla californica catalinensis	Catalina California quail		G5T2	S2	None	None	CDFW:SSC	No	

GAVIIDAE (loons)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Gavia immer	common loon	Nesting	G5	S1	None	None	CDFW:SSC IUCN:LC	No	

DIOMEDEIDAE (albatrosses)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Phoebastria albatrus	short-tailed albatross		G1	S1	Endangered	None	CDFW:SSC IUCN:VU	No	

HYDROBATIDAE (storm petrels)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Hydrobates furcatus	fork-tailed storm-petrel	Nesting colony	G5	S1	None	None	BLM:S CDFW:SSC IUCN:LC	Yes	
Hydrobates homochroa	ashy storm-petrel	Nesting colony	G2	S2	None	None	BLM:S CDFW:SSC IUCN:EN USFWS:BCC	Yes	
Hydrobates melania	black storm-petrel	Nesting colony	G3	S1	None	None	CDFW:SSC IUCN:LC USFWS:BCC	Yes	

PELECANIIDAE (pelicans)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Pelecanus erythrorhynchos	American white pelican	Nesting colony	G4	S1S2	None	None	CDFW:SSC IUCN:LC USFWS:BCC	Yes	
Pelecanus occidentalis californicus	California brown pelican	Nesting colony & communal roosts	G4T3T4	S3	Delisted	Delisted	BLM:S USFS:S	Yes	Yes

PHALACROCORACIDAE (cormorants)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Nannopterum auritum	double-crested cormorant	Nesting colony	G5	S4	None	None	CDFW:WL IUCN:LC	Yes	

ARDEIDAE (herons, egrets, and bitterns)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Ardea alba	great egret	Nesting colony	G5	S4	None	None	CDF:S IUCN:LC	Yes	
Ardea herodias	great blue heron	Nesting colony	G5	S4	None	None	CDF:S IUCN:LC	Yes	
Botaurus lentiginosus	American bittern		G5	S3S4	None	None	IUCN:LC	No	
Egretta thula	snowy egret	Nesting colony	G5	S4	None	None	IUCN:LC	Yes	
Ixobrychus exilis	least bittern	Nesting	G4	S2	None	None	CDFW:SSC IUCN:LC	Yes	
Nycticorax nycticorax	black-crowned night heron	Nesting colony	G5	S4	None	None	IUCN:LC	Yes	

THRESKIORNITHIDAE (ibises and spoonbills)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Plegadis chihi	white-faced ibis	Nesting colony	G5	S3S4	None	None	CDFW:WL IUCN:LC	Yes	

CICONIIDAE (storks)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Mycteria americana	wood stork		G4	S1	None	None	CDFW:SSC IUCN:LC	No	

CATHARTIDAE (New World vultures)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Gymnogyps californianus	California condor		G1	S2	Endangered	Endangered	CDF:S CDFW:FP IUCN:CR	Yes	

PANDIONIDAE (ospreys)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Pandion haliaetus	osprey	Nesting	G5	S4	None	None	CDF:S CDFW:WL IUCN:LC	Yes	

ACCIPITRIDAE (hawks, kites, harriers, and eagles)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Accipiter atricapillus	American goshawk	Nesting	G5	S3	None	None	BLM:S CDF:S CDFW:SSC USFS:S	Yes	
Accipiter cooperii	Cooper's hawk	Nesting	G5	S4	None	None	CDFW:WL IUCN:LC	Yes	
Accipiter striatus	sharp-shinned hawk	Nesting	G5	S4	None	None	CDFW:WL IUCN:LC	Yes	
Aquila chrysaetos	golden eagle	Nesting and wintering	G5	S3	None	None	BLM:S CDF:S CDFW:FP CDFW:WL IUCN:LC	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Buteo regalis	ferruginous hawk	Wintering	G4	S3S4	None	None	CDFW:WL IUCN:LC	Yes	
Buteo swainsoni	Swainson's hawk	Nesting	G5	S4	None	Threatened	BLM:S IUCN:LC	Yes	
Circus hudsonius	northern harrier	Nesting	G5	S3	None	None	CDFW:SSC IUCN:LC USFWS:BCC	Yes	Yes
Elanus leucurus	white-tailed kite	Nesting	G5	S3S4	None	None	BLM:S CDFW:FP IUCN:LC	Yes	
Haliaeetus leucocephalus	bald eagle	Nesting and wintering	G5	S3	Delisted	Endangered	BLM:S CDF:S CDFW:FP IUCN:LC USFS:S	Yes	
Parabuteo unicinctus	Harris' hawk	Nesting	G5	S1	None	None	CDFW:WL IUCN:LC	No	

FALCONIDAE (falcons)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Falco columbarius	merlin	Wintering	G5	S3S4	None	None	CDFW:WL IUCN:LC	Yes	
Falco mexicanus	prairie falcon	Nesting	G5	S4	None	None	CDFW:WL IUCN:LC	Yes	
Falco peregrinus anatum	American peregrine falcon	Nesting	G4T4	S3S4	Delisted	Delisted	CDF:S	Yes	Yes

RALLIDAE (rails, coots, and gallinules)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Coturnicops noveboracensis	yellow rail		G4	S2	None	None	CDFW:SSC IUCN:LC USFS:S USFWS:BCC	Yes	
Laterallus jamaicensis coturniculus	California black rail		G3T1	S2	None	Threatened	BLM:S CDFW:FP IUCN:EN	Yes	Yes
Rallus obsoletus levipes	light-footed Ridgway's rail		G3T1T2	S1	Endangered	Endangered	CDFW:FP	Yes	
Rallus obsoletus obsoletus	California Ridgway's rail		G3T1	S2	Endangered	Endangered	CDFW:FP	Yes	
Rallus obsoletus yumanensis	Yuma Ridgway's rail		G3T3	S1	Endangered	Threatened	CDFW:FP	Yes	

GRUIDAE (cranes)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Antigone canadensis canadensis	lesser sandhill crane	Wintering	G5T4	S4	None	None	CDFW:SSC	No	
Antigone canadensis tabida	greater sandhill crane	Nesting & wintering	G5T5	S2	None	Threatened	BLM:S CDFW:FP USFS:S	Yes	

CHARADRIIDAE (plovers and relatives)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Charadrius montanus	mountain plover	Wintering	G3	S2	None	None	BLM:S CDFW:SSC IUCN:NT USFWS:BCC	Yes	Yes
Charadrius nivosus nivosus	western snowy plover	Nesting	G3T3	S3	Threatened	None	CDFW:SSC	Yes	Yes

SCOLOPACIDAE (sandpipers and relatives)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Numenius americanus	long-billed curlew	Nesting	G4	S2	None	None	CDFW:WL IUCN:LC	No	

LARIDAE (gulls and terns)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Chlidonias niger	black tern	Nesting colony	G4G5	S2	None	None	CDFW:SSC IUCN:LC USFWS:BCC	Yes	
Gelochelidon nilotica	gull-billed tern	Nesting colony	G5	S1	None	None	CDFW:SSC IUCN:LC USFWS:BCC	Yes	Yes
Hydroprogne caspia	Caspian tern	Nesting colony	G5	S4	None	None	IUCN:LC	Yes	Yes
Larus californicus	California gull	Nesting colony	G5	S4	None	None	CDFW:WL IUCN:LC USFWS:BCC	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Leucophaeus atricilla	laughing gull	Nesting colony	G5	S1	None	None	CDFW:WL IUCN:LC	No	
Rynchops niger	black skimmer	Nesting colony	G5	S2	None	None	CDFW:SSC IUCN:LC USFWS:BCC	Yes	
Sternula antillarum browni	California least tern	Nesting colony	G4T2T3Q	S2	Endangered	Endangered	CDFW:FP	Yes	Yes
Thalasseus elegans	elegant tern	Nesting colony	G4	S3	None	None	CDFW:WL IUCN:NT USFWS:BCC	No	Yes

ALCIDAE (auklets, puffins, and relatives)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Brachyramphus marmoratus	marbled murrelet	Nesting	G3	S2	Threatened	Endangered	CDF:S IUCN:EN	Yes	
Cerorhinca monocerata	rhinoceros auklet	Nesting colony	G5	S3	None	None	CDFW:WL IUCN:LC	Yes	
Fratercula cirrhata	tufted puffin	Nesting colony	G5	S1S2	None	None	CDFW:SSC IUCN:LC USFWS:BCC	Yes	
Ptychoramphus aleuticus	Cassin's auklet	Nesting colony	G4	S3	None	None	CDFW:SSC IUCN:NT USFWS:BCC	No	
Synthliboramphus scrippsi	Scripps's murrelet	Nesting colony	G2	S2	None	Threatened	BLM:S IUCN:VU USFWS:BCC	Yes	Yes

CUCULIDAE (cuckoos and relatives)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Nesting	G5T2T3	S1	Threatened	Endangered	BLM:S USFS:S	Yes	

STRIGIDAE (owls)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Asio flammeus	short-eared owl	Nesting	G5	S2	None	None	CDFW:SSC IUCN:LC USFWS:BCC	Yes	
Asio otus	long-eared owl	Nesting	G5	S3?	None	None	CDFW:SSC IUCN:LC USFWS:BCC	Yes	
Athene cunicularia	burrowing owl	Burrow sites & some wintering sites	G4	S2	None	Candidate Endangered	BLM:S CDFW:SSC IUCN:LC USFWS:BCC	Yes	Yes
Micrathene whitneyi	elf owl	Nesting	G5	S1	None	Endangered	BLM:S IUCN:LC	Yes	
Psiloscops flammeolus	flammulated owl	Nesting	G4	S2S4	None	None	IUCN:LC USFWS:BCC	Yes	
Strix nebulosa	great gray owl	Nesting	G5	S1	None	Endangered	CDF:S IUCN:LC USFS:S	Yes	
Strix occidentalis caurina	northern spotted owl		G3G4T3	S2	Threatened	Threatened	CDF:S	No	Yes

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Strix occidentalis occidentalis	California spotted owl		G3G4T2T3	S2	None	None	BLM:S CDFW:SSC USFS:S USFWS:BCC	No	Yes

APODIDAE (swifts)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Chaetura vauxi	Vaux's swift	Nesting	G5	S3	None	None	CDFW:SSC IUCN:LC USFWS:BCC	No	
Cypseloides niger	black swift	Nesting	G4	S3	None	None	CDFW:SSC IUCN:VU USFWS:BCC	Yes	

TROCHILIDAE (hummingbirds)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Calypte costae	Costa's hummingbird	Nesting	G5	S4	None	None	IUCN:LC USFWS:BCC	No	
Selasphorus rufus	rufous hummingbird	Nesting	G4	S1S2	None	None	IUCN:NT USFWS:BCC	No	

PICIDAE (woodpeckers)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Colaptes chrysoides	gilded flicker		G4	S2	None	Endangered	BLM:S IUCN:LC USFWS:BCC	Yes	
Melanerpes lewis	Lewis' woodpecker	Nesting	G4	S4	None	None	IUCN:LC USFWS:BCC	Yes	
Melanerpes uropygialis	Gila woodpecker		G5	S2	None	Endangered	BLM:S IUCN:LC USFWS:BCC	Yes	
Picoides arcticus	black-backed woodpecker		G5	S2	None	None	IUCN:LC	Yes	

TYRANNIDAE (tyrant flycatchers)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Contopus cooperi	olive-sided flycatcher	Nesting	G4	S3	None	None	CDFW:SSC IUCN:NT USFWS:BCC	Yes	
Empidonax traillii	willow flycatcher	Nesting	G5	S3	None	Endangered	IUCN:LC USFS:S	Yes	Yes
Empidonax traillii brewsteri	little willow flycatcher	Nesting	G5T3T4	S3	None	Endangered		Yes	Yes
Empidonax traillii extimus	southwestern willow flycatcher	Nesting	G5T2	S3	Endangered	Endangered		Yes	Yes
Myiarchus tyrannulus	brown-crested flycatcher	Nesting	G5	S3	None	None	CDFW:WL IUCN:LC	Yes	
Pyrocephalus rubinus	vermilion flycatcher	Nesting	G5	S2S3	None	None	CDFW:SSC IUCN:LC	Yes	

LANIIDAE (shrikes)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Lanius ludovicianus	loggerhead shrike	Nesting	G4	S4	None	None	CDFW:SSC IUCN:NT	Yes	
Lanius ludovicianus anthonyi	Island loggerhead shrike		G4T1	S1	None	None	CDFW:SSC	No	
Lanius ludovicianus mearnsi	San Clemente loggerhead shrike		G4T1Q	S2	Endangered	None	CDFW:SSC	Yes	Yes

VIREONIDAE (vireos)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Vireo bellii arizonae	Arizona Bell's vireo	Nesting	G5T4	S3	None	Endangered	BLM:S	Yes	Yes
Vireo bellii pusillus	least Bell's vireo	Nesting	G5T2	S3	Endangered	Endangered		Yes	Yes
Vireo huttoni unitti	Catalina Hutton's vireo		G5T2?	S2	None	None	CDFW:SSC	No	
Vireo vicinior	gray vireo	Nesting	G5	S2	None	None	BLM:S CDFW:SSC IUCN:LC USFS:S	Yes	

CORVIDAE (jays, crows, and magpies)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Aphelocoma californica cana	Eagle Mountain scrub-jay		G5T3	S3	None	None	CDFW:WL	No	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Aphelocoma insularis	Island scrub-jay		G1	S1	None	None	IUCN:NT USFWS:BCC	No	
Pica nuttalli	yellow-billed magpie	Nesting & communal roosts	G3G4	S3S4	None	None	IUCN:VU USFWS:BCC	No	

ALAUDIDAE (larks)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Eremophila alpestris actia	California horned lark		G5T4Q	S4	None	None	CDFW:WL IUCN:LC	Yes	

HIRUNDINIDAE (swallows)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Progne subis	purple martin	Nesting	G5	S3	None	None	CDFW:SSC IUCN:LC	Yes	
Riparia riparia	bank swallow	Nesting	G5	S3	None	Threatened	BLM:S IUCN:LC	Yes	

PARIDAE (titmice and relatives)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Poecile atricapillus	black-capped chickadee		G5	S3	None	None	CDFW:WL IUCN:LC	No	

TROGLODYTIDAE (wrens)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	San Diego & Orange Counties only	G5T3Q	S2	None	None	CDFW:SSC USFS:S USFWS:BCC	Yes	Yes
Cistothorus palustris clarkae	Clark's marsh wren		G5T2	S2	None	None	CDFW:SSC	No	
Thryomanes bewickii leucophrys	San Clemente Bewick's wren		G5TX	SX	None	None	CDFW:SSC	No	

POLIOPTILIDAE (gnatcatchers)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Polioptila californica californica	coastal California gnatcatcher		G4G5T3Q	S2	Threatened	None	CDFW:SSC	Yes	Yes
Polioptila melanura	black-tailed gnatcatcher		G5	S3S4	None	None	CDFW:WL IUCN:LC	Yes	

MIMIDAE (mockingbirds and thrashers)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Toxostoma bendirei	Bendire's thrasher		G4	S2	None	None	BLM:S CDFW:SSC IUCN:VU USFWS:BCC	Yes	
Toxostoma crissale	Crissal thrasher		G5	S2	None	None	BLM:S CDFW:SSC IUCN:LC	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Toxostoma lecontei	Le Conte's thrasher		G4	S3	None	None	BLM:S CDFW:SSC IUCN:LC USFWS:BCC	Yes	Yes

PASSERELLIDAE (sparrows)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Aimophila ruficeps canescens	southern California rufous-crowned sparrow		G5T3	S4	None	None	CDFW:WL	Yes	
Aimophila ruficeps obscura	Santa Cruz Island rufous-crowned sparrow		G5T2	S2	None	None	CDFW:SSC	No	
Ammodramus savannarum	grasshopper sparrow	Nesting	G5	S3	None	None	CDFW:SSC IUCN:LC	Yes	
Artemisiospiza belli belli	Bell's sparrow		G5T2T3	S3	None	None	CDFW:WL	Yes	
Artemisiospiza belli clementeae	San Clemente Bell's sparrow		G5T2Q	S2	Delisted	None	CDFW:SSC	Yes	Yes
Junco hyemalis caniceps	gray-headed junco	Nesting	G5T5	S1	None	None	CDFW:WL	Yes	
Melospiza melodia graminea	Channel Island song sparrow		G5T1	S1	None	None	CDFW:SSC USFWS:BCC	Yes	Yes

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Melospiza melodia maxillaris	Suisun song sparrow		G5T3	S2	None	None	CDFW:SSC	Yes	
Melospiza melodia pop. 1	song sparrow ("Modesto" population)		G5T3?Q	S3?	None	None	CDFW:SSC	Yes	
Melospiza melodia pusillula	Alameda song sparrow		G5T2T3	S2	None	None	CDFW:SSC USFWS:BCC	Yes	
Melospiza melodia samuelis	San Pablo song sparrow		G5T2	S2	None	None	CDFW:SSC USFWS:BCC	Yes	
Melozone aberti	Abert's towhee		G4	S4	None	None	IUCN:LC	No	
Melozone crissalis eremophilus	Inyo California towhee		G4G5T2	S2	Threatened	Endangered		Yes	Yes
Passerculus sandwichensis alaudinus	Bryant's savannah sparrow		G5T3	S3	None	None	CDFW:SSC	No	
Passerculus sandwichensis beldingi	Belding's savannah sparrow		G5T3	S3	None	Endangered	USFWS:BCC	Yes	
Passerculus sandwichensis rostratus	large-billed savannah sparrow	Wintering	G5T2T3Q	S2	None	None	CDFW:SSC	No	
Pipilo maculatus clementae	San Clemente spotted towhee		G5T1T2	S3	None	None	CDFW:SSC	No	
Pooecetes gramineus affinis	Oregon vesper sparrow	Wintering	G5T2	S2	None	None	CDFW:SSC USFWS:BCC	No	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Spizella breweri	Brewer's sparrow	Nesting	G5	S4	None	None	IUCN:LC	Yes	

ICTERIIDAE (yellow-breasted chats)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Icteria virens	yellow-breasted chat	Nesting	G5	S4	None	None	CDFW:SSC IUCN:LC	Yes	

ICTERIDAE (blackbirds)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Agelaius phoeniceus aciculatus	Kern red-winged blackbird		G5T1	S1	None	None	CDFW:SSC	No	
Agelaius tricolor	tricolored blackbird	Nesting colony	G1G2	S2	None	Threatened	BLM:S CDFW:SSC IUCN:EN USFWS:BCC	Yes	
Xanthocephalus xanthocephalus	yellow-headed blackbird	Nesting	G5	S3	None	None	CDFW:SSC IUCN:LC	Yes	

PARULIDAE (wood-warblers)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Geothlypis trichas sinuosa	saltmarsh common yellowthroat		G5T3	S3	None	None	CDFW:SSC USFWS:BCC	Yes	Yes

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Leiothlypis luciae	Lucy's warbler	Nesting	G5	S3	None	None	BLM:S CDFW:SSC IUCN:LC	Yes	
Leiothlypis virginiae	Virginia's warbler	Nesting	G5	S2	None	None	CDFW:WL IUCN:LC USFWS:BCC	Yes	
Setophaga petechia	yellow warbler	Nesting	G5	S3	None	None	CDFW:SSC IUCN:LC	Yes	Yes
Setophaga petechia sonorana	Sonoran yellow warbler	Nesting	G5T2T3	S2	None	None	CDFW:SSC	Yes	Yes

CARDINALIDAE (cardinals)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Cardinalis cardinalis	northern cardinal		G5	S1	None	None	CDFW:WL IUCN:LC	Yes	
Piranga flava	hepatic tanager	Nesting	G5	S1	None	None	CDFW:WL IUCN:LC	Yes	
Piranga rubra	summer tanager	Nesting	G5	S1	None	None	CDFW:SSC IUCN:LC	Yes	

FRINGILLIDAE (finches and relatives)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Spinus lawrencei	Lawrence's goldfinch	Nesting	G3G4	S4	None	None	IUCN:LC USFWS:BCC	Yes	

Mammals

SORICIDAE (shrews)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Sorex lyelli	Mount Lyell shrew		G3G4	S3S4	None	None	CDFW:SSC IUCN:LC	Yes	
Sorex ornatus relictus	Buena Vista Lake ornate shrew		G5T1	S1	Endangered	None	CDFW:SSC	Yes	
Sorex ornatus salarius	Monterey shrew		G5T1T2	S1S2	None	None	CDFW:SSC	Yes	
Sorex ornatus salicornicus	southern California saltmarsh shrew		G5T1?	S1	None	None	CDFW:SSC	Yes	
Sorex ornatus sinuosus	Suisun shrew		G5T1T2Q	S1S2	None	None	CDFW:SSC	Yes	
Sorex ornatus willetti	Santa Catalina shrew		G5T1	S1	None	None	CDFW:SSC	Yes	
Sorex vagrans halicoetes	salt-marsh wandering shrew		G5T1	S1	None	None	CDFW:SSC	Yes	
Sorex vagrans paludivagus	Monterey vagrant shrew		G5T1	S2	None	None		Yes	

TALPIDAE (moles)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Scapanus latimanus insularis	Angel Island mole		G5T1	S2?	None	None		Yes	
Scapanus latimanus parvus	Alameda Island mole		G5T1Q	SH	None	None	CDFW:SSC	Yes	

PHYLLOSTOMIDAE (leaf-nosed bats)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Choeronycteris mexicana	Mexican long-tongued bat		G3G4	S1	None	None	CDFW:SSC IUCN:NT	Yes	
Leptonycteris yerbabuenae	lesser long-nosed bat		G3	S1	Delisted	None	CDFW:SSC IUCN:NT	Yes	Yes
Macrotus californicus	California leaf-nosed bat		G3G4	S3	None	None	BLM:S CDFW:SSC IUCN:LC	Yes	

VESPERTILIONIDAE (evening bats)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Antrozous pallidus	pallid bat		G4	S3	None	None	BLM:S CDFW:SSC IUCN:LC USFS:S	Yes	
Corynorhinus townsendii	Townsend's big-eared bat		G4	S2	None	None	BLM:S CDFW:SSC IUCN:LC USFS:S	Yes	
Euderma maculatum	spotted bat		G4	S3	None	None	BLM:S CDFW:SSC IUCN:LC	Yes	
Lasionycteris noctivagans	silver-haired bat		G3G4	S3S4	None	None	IUCN:LC	Yes	
Lasiurus cinereus	hoary bat		G3G4	S4	None	None	IUCN:LC	Yes	
Lasiurus frantzii	western red bat		G4	S3	None	None	CDFW:SSC IUCN:LC	Yes	Yes

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Lasiurus xanthinus	western yellow bat		G4G5	S3	None	None	CDFW:SSC IUCN:LC	Yes	
Myotis ciliolabrum	western small-footed myotis		G5	S3	None	None	BLM:S IUCN:LC	Yes	
Myotis evotis	long-eared myotis		G5	S3	None	None	BLM:S IUCN:LC	Yes	
Myotis occultus	Arizona Myotis		G4G5	S1	None	None	CDFW:SSC IUCN:LC	Yes	
Myotis thysanodes	fringed myotis		G4	S3	None	None	BLM:S IUCN:LC USFS:S	Yes	
Myotis velifer	cave myotis		G4G5	S1	None	None	BLM:S CDFW:SSC IUCN:LC	Yes	
Myotis volans	long-legged myotis		G4G5	S3	None	None	IUCN:LC	Yes	
Myotis yumanensis	Yuma myotis		G5	S4	None	None	BLM:S IUCN:LC	Yes	

MOLOSSIDAE (free-tailed bats)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Eumops perotis californicus	western mastiff bat		G4G5T4	S3S4	None	None	BLM:S CDFW:SSC	Yes	
Nyctinomops femorosaccus	pocketed free-tailed bat		G5	S3	None	None	CDFW:SSC IUCN:LC	Yes	
Nyctinomops macrotis	big free-tailed bat		G5	S3	None	None	CDFW:SSC IUCN:LC	Yes	

OCHOTONIDAE (pikas)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Ochotona princeps schisticeps	gray-headed pika		G5T4	S2S4	None	None		Yes	

LEPORIDAE (rabbits and hares)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Brachylagus idahoensis	pygmy rabbit		G4	S3	None	None	BLM:S CDFW:SSC IUCN:LC USFS:S	Yes	
Lepus americanus klamathensis	Oregon snowshoe hare		G5T3T4Q	S2	None	None	CDFW:SSC	Yes	
Lepus americanus tahoensis	Sierra Nevada snowshoe hare		G5T3T4Q	S2	None	None	CDFW:SSC	Yes	
Lepus californicus bennettii	San Diego black-tailed jackrabbit		G5T3T4	S3S4	None	None		Yes	
Lepus townsendii townsendii	western white-tailed jackrabbit		G5T5	S3?	None	None	CDFW:SSC	Yes	
Sylvilagus bachmani riparius	riparian brush rabbit		G5T1	S2	Endangered	Endangered		Yes	

APLODONTIIDAE (mountain beavers)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Aplodontia rufa californica	Sierra Nevada mountain beaver		G5T3T4	S2S3	None	None	CDFW:SSC IUCN:LC	Yes	Yes
Aplodontia rufa humboldtiana	Humboldt mountain beaver		G5TNR	SNR	None	None		Yes	
Aplodontia rufa nigra	Point Arena mountain beaver		G5T1	S1	Endangered	None	CDFW:SSC IUCN:LC	Yes	Yes
Aplodontia rufa phaea	Point Reyes mountain beaver		G5T2	S2	None	None	CDFW:SSC IUCN:LC	Yes	Yes

SCIURIDAE (squirrels and relatives)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Ammospermophilus nelsoni	Nelson's (=San Joaquin) antelope squirrel		G2G3	S3	None	Threatened	BLM:S IUCN:EN	Yes	
Callospermophilus lateralis bernardinus	San Bernardino golden-mantled ground squirrel		G5T1	S1	None	None		Yes	
Glaucomys oregonensis californicus	San Bernardino flying squirrel		G5T1T2	S1S2	None	None	CDFW:SSC USFS:S	Yes	
Neotamias alpinus	Alpine chipmunk		G4	S3	None	None	IUCN:LC	Yes	
Neotamias panamintinus acrus	Kingston Mountain chipmunk		G4T1T2	S1S2	None	None		Yes	
Neotamias speciosus callipeplus	Mount Pinos chipmunk		G4T2	S2	None	None	USFS:S	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Neotamias speciosus speciosus	lodgepole chipmunk		G4T3T4	S2	None	None		Yes	
Urocitellus mollis	Piute ground squirrel		G5	S3	None	None	IUCN:LC	No	
Xerospermophilus mohavensis	Mohave ground squirrel		G3	S2	None	Threatened	BLM:S IUCN:NT	Yes	
Xerospermophilus tereticaudus chlorus	Palm Springs round-tailed ground squirrel		G5T2	S2	None	None	BLM:S CDFW:SSC	Yes	

GEOMYIDAE (pocket gophers)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Thomomys bottae operarius	Owens Lake pocket gopher		G5T1?	S1?	None	None		No	

HETEROMYIDAE (kangaroo rats, pocket mice, and kangaroo mice)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Chaetodipus californicus femoralis	Dulzura pocket mouse		G5T3	S3	None	None		Yes	
Chaetodipus fallax fallax	northwestern San Diego pocket mouse		G5T3T4	S3S4	None	None		Yes	
Chaetodipus fallax pallidus	pallid San Diego pocket mouse		G5T3T4	S3S4	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Dipodomys californicus eximius	Marysville California kangaroo rat		G4T1	S1	None	None	CDFW:SSC	Yes	
Dipodomys heermanni arenae	Lompoc kangaroo rat		G4T1T2	S1S2	None	None		No	
Dipodomys heermanni berkeleyensis	Berkeley kangaroo rat		G4T1	S2	None	None		Yes	
Dipodomys heermanni dixoni	Merced kangaroo rat		G4T2	S2	None	None		Yes	
Dipodomys heermanni goldmani	Salinas kangaroo rat		G4T2T3	S2S3	None	None		Yes	
Dipodomys heermanni heermanni	Heermann's kangaroo rat		G4T2	S2	None	None		No	
Dipodomys heermanni morroensis	Morro Bay kangaroo rat		G4TH	SH	Endangered	Endangered	CDFW:FP	Yes	
Dipodomys ingens	giant kangaroo rat		G1G2	S2	Endangered	Endangered	IUCN:EN	Yes	
Dipodomys merriami collinus	Earthquake Merriam's kangaroo rat		G5T2?	S2	None	None		Yes	
Dipodomys merriami parvus	San Bernardino kangaroo rat		G5T1	S1	Endangered	Endangered	CDFW:SSC	Yes	
Dipodomys merriami trinidadensis	Valle de la Trinidad kangaroo rat		G5T2T3Q	S2	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Dipodomys nitratoides brevinasus	short-nosed kangaroo rat		G2T1T2	S1S2	None	None	BLM:S CDFW:SSC IUCN:VU	Yes	
Dipodomys nitratoides exilis	Fresno kangaroo rat		G2TH	SH	Endangered	Endangered	IUCN:VU	Yes	
Dipodomys nitratoides nitratoides	Tipton kangaroo rat		G2T1T2	S2	Endangered	Endangered	IUCN:VU	Yes	
Dipodomys panamintinus argusensis	Argus Mountains kangaroo rat		G5T1T3	S1S3	None	None		Yes	
Dipodomys panamintinus panamintinus	Panamint kangaroo rat		G5T3	S3	None	None		Yes	
Dipodomys simulans	Dulzura kangaroo rat		G4	S3	None	None	IUCN:LC	No	
Dipodomys stephensi	Stephens' kangaroo rat		G2	S3	Threatened	Threatened	IUCN:VU	Yes	
Dipodomys venustus elephantinus	big-eared kangaroo rat		G4T2	S3	None	None		Yes	
Dipodomys venustus sanctiluciae	Santa Lucia Mountain kangaroo rat		G4T3	S3	None	None		No	
Dipodomys venustus venustus	Santa Cruz kangaroo rat		G4T1	S1	None	None		Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Perognathus alticola alticola	white-eared pocket mouse		G2TH	SH	None	None	BLM:S CDFW:SSC IUCN:VU USFS:S	Yes	Yes
Perognathus alticola inexpectatus	Tehachapi pocket mouse		G2T1T2	S1S2	None	None	CDFW:SSC IUCN:VU USFS:S	Yes	Yes
Perognathus inornatus	San Joaquin pocket mouse		G2G3	S2S3	None	None	BLM:S IUCN:LC	Yes	Yes
Perognathus inornatus psammophilus	Salinas pocket mouse		G2G3T2?	S1	None	None	CDFW:SSC	Yes	
Perognathus longimembris bangsi	Palm Springs pocket mouse		G5T2	S1	None	None	BLM:S CDFW:SSC	Yes	
Perognathus longimembris brevinasus	Los Angeles pocket mouse		G5T2	S1S2	None	None	CDFW:SSC	Yes	
Perognathus longimembris internationalis	Jacumba pocket mouse		G5T2T3	S2	None	None	CDFW:SSC	Yes	
Perognathus longimembris pacificus	Pacific pocket mouse		G5T2	S2	Endangered	None	CDFW:SSC	Yes	
Perognathus longimembris salinensis	Saline Valley pocket mouse		G5T1	S1	None	None		No	
Perognathus longimembris tularensis	Tulare pocket mouse		G5T1	S1	None	None		No	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Perognathus mollipilosus xanthonotus	yellow-eared pocket mouse		GNRT2	S2	None	None	BLM:S	Yes	

CRICETIDAE (mice, rats, and voles)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Arborimus albipes	white-footed vole		G3G4	S2	None	None	CDFW:SSC IUCN:LC	Yes	
Arborimus pomo	Sonoma tree vole		G3	S3	None	None	CDFW:SSC IUCN:NT	Yes	
Microtus californicus halophilus	Monterey vole		G5T1	S2	None	None		Yes	
Microtus californicus mohavensis	Mohave river vole		G5T1	S1	None	None	CDFW:SSC	Yes	
Microtus californicus sanpabloensis	San Pablo vole		G5T1T2	S1S2	None	None	CDFW:SSC	Yes	
Microtus californicus scirpensis	Amargosa vole		G5T1	S1	Endangered	Endangered		Yes	
Microtus californicus stephensi	south coast marsh vole		G5T2T3	S2	None	None	CDFW:SSC	Yes	
Microtus californicus vallicola	Owens Valley vole		G5T3	S3	None	None	BLM:S CDFW:SSC	Yes	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Neotoma albigula venusta	Colorado Valley woodrat		G5T3T4	S1S2	None	None		Yes	
Neotoma fuscipes annectens	San Francisco dusky-footed woodrat		G5T2T3	S2S3	None	None	CDFW:SSC	Yes	
Neotoma fuscipes riparia	riparian (=San Joaquin Valley) woodrat		G5T1	S1	Endangered	None	CDFW:SSC	Yes	Yes
Neotoma lepida intermedia	San Diego desert woodrat		G5T3T4	S3S4	None	None	CDFW:SSC	Yes	
Neotoma macrotis luciana	Monterey dusky-footed woodrat		G5T3	S3	None	None	BLM:S CDFW:SSC	Yes	
Onychomys torridus ramona	southern grasshopper mouse		G5T3	S3	None	None	CDFW:SSC	Yes	
Onychomys torridus tularensis	Tulare grasshopper mouse		G5T1T2	S1S2	None	None	BLM:S CDFW:SSC	Yes	
Peromyscus maniculatus anacapae	Anacapa Island deer mouse		G5T1T2	S1S2	None	None	CDFW:SSC	Yes	
Peromyscus maniculatus clementis	San Clemente deer mouse		G5T1T2	S1S2	None	None		No	
Reithrodontomys megalotis distichlis	Salinas harvest mouse		G5T1	S2	None	None		Yes	
Reithrodontomys megalotis santacruzae	Santa Cruz harvest mouse		G5T1Q	S1	None	None		Yes	Yes

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Reithrodontomys raviventris	salt-marsh harvest mouse		G1G2	S3	Endangered	Endangered	CDFW:FP IUCN:EN	Yes	
Sigmodon arizonae plenus	Colorado River cotton rat		G5T2T3	S1S2	None	None	CDFW:SSC	Yes	
Sigmodon hispidus eremicus	Yuma hispid cotton rat		G5T2T3	S2	None	None	CDFW:SSC	Yes	

DIPODIDAE (jumping mice)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Zapus trinotatus orarius	Point Reyes jumping mouse		G5T2	S2	None	None	CDFW:SSC	Yes	

ERETHIZONTIDAE (New World porcupines)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Erethizon dorsatum	North American porcupine		G5	S3	None	None	IUCN:LC	Yes	

CANIDAE (foxes, wolves, and coyotes)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Canis lupus	gray wolf		G5	S1	Endangered	Endangered	IUCN:LC	Yes	
Urocyon littoralis catalinae	Santa Catalina Island fox		G3T1	S2	Threatened	Threatened		Yes	Yes
Urocyon littoralis clementae	San Clemente Island fox		G3T1	S2	None	Threatened		Yes	Yes

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Urocyon littoralis dickeyi	San Nicolas Island fox		G3T1	S1	None	Threatened		Yes	Yes
Urocyon littoralis littoralis	San Miguel Island fox		G3T1	S1	Delisted	Threatened		Yes	Yes
Urocyon littoralis santacruzae	Santa Cruz Island fox		G3T1	S2	Delisted	Threatened		Yes	Yes
Urocyon littoralis santarosae	Santa Rosa Island fox		G3T1	S2	Delisted	Threatened		Yes	Yes
Vulpes macrotis mutica	San Joaquin kit fox		G4T2	S3	Endangered	Threatened		Yes	
Vulpes vulpes necator pop. 1	Sierra Nevada red fox - southern Cascades DPS		G5TNR	S1	None	Threatened	USFS:S	Yes	
Vulpes vulpes necator pop. 2	Sierra Nevada red fox - Sierra Nevada DPS		G5TNR	S1	Endangered	Threatened	USFS:S	Yes	
Vulpes vulpes patwin	Sacramento Valley red fox		G5T2	S2	None	None		No	

OTARIIDAE (sea lions and fur seals)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Arctocephalus townsendi	Guadalupe fur-seal		G1	S1	Threatened	Threatened	CDFW:FP IUCN:LC	Yes	
Callorhinus ursinus	northern fur-seal		G3	S1	None	None	IUCN:VU	Yes	
Eumetopias jubatus	Steller sea lion		G3	S2	Delisted	None	IUCN:NT MMC:SSC	Yes	

PROCYONIDAE (raccoons and ringtails)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Bassariscus astutus nevadensis	Nevada ringtail		G5TNR	SNR	None	None	CDFW:FP	No	
Bassariscus astutus octavus	southern California ringtail		G5T3	S3	None	None	CDFW:FP	No	
Bassariscus astutus raptor	northern California ringtail		G5TNR	SNR	None	None	CDFW:FP	No	
Bassariscus astutus willetti	Palo Verde Mountains ringtail		G5T2	S2	None	None	CDFW:FP	No	
Bassariscus astutus yumanensis	Yuma ringtail		G5TU	S2	None	None	CDFW:FP	No	

MUSTELIDAE (weasels and relatives)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Enhydra lutris nereis	southern sea otter		G4T2	S3	Threatened	None	CDFW:FP IUCN:EN MMC:SSC	Yes	Yes
Gulo gulo	wolverine		G4	S1	Threatened	Threatened	CDFW:FP IUCN:LC USFS:S	Yes	
Lontra canadensis sonora	southwestern river otter		G5T1	SH	None	None	CDFW:SSC	Yes	Yes
Martes caurina	Pacific marten		G4G5	S3	None	None	IUCN:LC USFS:S	Yes	
Martes caurina humboldtensis	Humboldt marten		G4G5T1	S1	Threatened	Endangered	CDFW:SSC USFS:S	Yes	Yes

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Martes caurina sierrae	Sierra marten		G4G5T3	S3	None	None	USFS:S	Yes	
Mustela frenata inyoensis	Inyo long-tailed weasel		G5T2Q	S2	None	None		No	
Mustela frenata xanthogenys	San Joaquin long-tailed weasel		G5T2T3	S3	None	None		No	
Pekania pennanti	Fisher		G5	S2S3	None	None	BLM:S CDFW:SSC IUCN:LC USFS:S	Yes	Yes
Pekania pennanti pop. 2	Fisher - southern Sierra Nevada ESU		G5T1	S1	Endangered	Threatened	BLM:S CDFW:SSC USFS:S	Yes	
Taxidea taxus	American badger		G5	S3	None	None	CDFW:SSC IUCN:LC	Yes	

MEPHITIDAE (skunks)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Spilogale gracilis amphiala	Channel Islands spotted skunk		G5T3	S3	None	None	CDFW:SSC	Yes	

FELIDAE (cats and relatives)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Lynx rufus pallescens	pallid bobcat		G5T3?	S3?	None	None		No	

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Puma concolor browni	Yuma mountain lion		G5T1T2Q	S1	None	None	CDFW:SSC	Yes	

CERVIDAE (deer, elk, and moose)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Cervus canadensis nannodes	tule elk		G5T3	S3	None	None		No	

ANTILOCAPRIDAE (pronghorn)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Antilocapra americana	pronghorn		G5	S3	None	None	IUCN:LC	No	

BOVIDAE (sheep and relatives)

Scientific Name	Common Name	Comments	Global Rank	State Rank	ESA	CESA	Other Status	Records in CNDDB?	End Notes?
Ovis canadensis nelsoni	desert bighorn sheep		G4T3	S3	None	None	BLM:S CDFW:FP USFS:S	Yes	Yes
Ovis canadensis nelsoni pop. 2	Peninsular bighorn sheep DPS		G4T3Q	S2	Endangered	Threatened	CDFW:FP	Yes	Yes
Ovis canadensis sierrae	Sierra Nevada bighorn sheep		G4T2	S2	Endangered	Endangered	CDFW:FP	Yes	

End Notes

Invertebrates

GASTROPODA (snails, slugs, and abalones)

Prophysaon sp. 1

Klamath taildropper

1) This entity is known to be unique morphologically and genetically (Frest & Johannes 2000, Wilke & Duncan 2004, Roth & Sadeghian 2006), but has not been formally described and some may reference it as part of the *Prophysaon coeruleum* species complex.

ARACHNIDA (spiders and relatives)

Hubbardia shoshonensis

Shoshone Cave whip-scorpion

1) BLM Sensitive list uses the scientific name *Trithyreus shoshonensis*.

CRUSTACEA, Order Amphipoda (amphipods)

Hyalella muerta

Texas Spring amphipod

1) First North American hypogean hyalellid.

Hyalella sandra

Death Valley amphipod

1) Population in Texas Springs is an accidental introduction. Population in Nevares Springs may be a new species.

INSECTA, Order Coleoptera (beetles)

Trigonoscuta sp.

Doyen's trigonoscuta dune weevil

1) Sometimes referred to as *Trigonoscuta doyeni*, which is an unpublished manuscript name.

INSECTA, Order Lepidoptera (butterflies and moths)

Callophrys thornei

Thorne's hairstreak

1) Formerly *Mitoura thornei*.

Euproserpinus euterpe

Kern primrose sphinx moth

1) Until its rediscovery in Kern County in 1974, this moth had been thought to be extinct. A second population was later found in San Luis Obispo County (Xerces Society 2005).

Speyeria zerene myrtleae

Myrtle's silverspot butterfly

1) The USFWS and others have not yet determined if the taxonomic expansion by Emmel and Emmel (1998) into *S. z. myrtleae* and *S. z. puntareyes* is warranted. The *Speyereia zerene* along the coast of Marin and Sonoma Counties are federally endangered under the subspecies concept in the 1992 listing.

INSECTA, Order Hymenoptera (ants, bees, and wasps)

Bombus crotchii

Crotch's bumble bee

1) Originally advanced to candidacy by the Fish and Game Commission in June 2019. The candidacy determination was challenged in court. Candidacy was temporarily stayed beginning February 2021 following an adverse trial court judgment. The Third District Court of Appeal reversed the trial court judgment. Candidacy was reinstated on September 30, 2022.

Bombus franklini

Franklin's bumble bee

1) Originally advanced to candidacy by the Fish and Game Commission in June 2019. The candidacy determination was challenged in court. Candidacy was temporarily stayed beginning February 2021 following an adverse trial court judgment. The Third District Court of Appeal reversed the trial court judgment. Candidacy was reinstated on September 30, 2022.

Bombus occidentalis

western bumble bee

1) Originally advanced to candidacy by the Fish and Game Commission in June 2019. The candidacy determination was challenged in court. Candidacy was temporarily stayed beginning February 2021 following an adverse trial court judgment. The Third District Court of Appeal reversed the trial court judgment. Candidacy was reinstated on September 30, 2022.

Bombus suckleyi

Suckley's cuckoo bumble bee

1) Originally advanced to candidacy by the Fish and Game Commission in June 2019. The candidacy determination was challenged in court. Candidacy was temporarily stayed beginning February 2021 following an adverse trial court judgment. The Third District Court of Appeal reversed the trial court judgment. Candidacy was reinstated on September 30, 2022.

Fishes

SALMONIDAE (trout and salmon)

Oncorhynchus kisutch pop. 2

coho salmon - southern Oregon / northern California ESU

1) Federal listing refers to populations between Cape Blanco, Oregon and Punta Gorda, Humboldt County, California.
2) State listing refers to populations between the Oregon border and Punta Gorda, Humboldt County, California.

Oncorhynchus kisutch pop. 4

coho salmon - central California coast ESU

1) Federal listing is limited to naturally spawning populations in streams between Punta Gorda, Humboldt County and the San Lorenzo River, Santa Cruz County.
2) State listing is limited to populations south of Punta Gorda, Humboldt County.

Oncorhynchus mykiss irideus pop. 1

steelhead - Klamath Mountains Province DPS

1) This ESU includes all naturally spawned populations residing in streams between the Elk River in Oregon and the Klamath River in California, inclusive.
2) CDFW SSC designation refers only to the California portion of the ESU and refers only to the summer-run.

Oncorhynchus mykiss irideus pop. 10

steelhead - southern California DPS

1) The federal designation refers to fish in the coastal basins from the Santa Maria River (inclusive), south to the U.S. - Mexico Border.

Oncorhynchus mykiss irideus pop. 11

steelhead - Central Valley DPS

1) Federal listing includes all runs in the Sacramento and San Joaquin rivers and their tributaries.

Oncorhynchus mykiss irideus pop. 8

steelhead - central California coast DPS

1) Federal listing includes all runs in coastal basins from the Russian River in Sonoma County, south to Soquel Creek in Santa Cruz County, inclusive. It includes the San Francisco and San Pablo Bay basins, but excludes the Sacramento-San Joaquin River basins.

Oncorhynchus mykiss irideus pop. 9

steelhead - south-central California coast DPS

1) Federal listing includes all runs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River.
2) CDFW SSC designation refers to southern steelhead trout.

Oncorhynchus tshawytscha pop. 11

chinook salmon - Central Valley spring-run ESU

1) Federal listing refers to the Central Valley spring-run ESU. It includes populations spawning in the Sacramento River and its tributaries.

Oncorhynchus tshawytscha pop. 13

chinook salmon - Central Valley fall / late fall-run ESU

1) The Central Valley fall/late fall-run ESU refers to populations spawning in the Sacramento and San Joaquin rivers and their tributaries.
2) CDFW SSC designation refers only to the fall-run.

Oncorhynchus tshawytscha pop. 17

chinook salmon - California coastal ESU

1) Originally proposed as part of a larger Southern Oregon and California Coastal ESU. This new ESU was revised to include only naturally spawned coastal spring- and fall-run chinook salmon between Redwood Creek in Humboldt County and the Russian River in Sonoma County.

OSMERIDAE (smelt)

Thaleichthys pacificus

eulachon

1) The Federal Threatened status pertains to the "southern DPS" of eulachon that range from central British Columbia, Washington, Oregon, and northern California.

CYPRINIDAE (minnows and carp)

Rhinichthys nevadensis nevadensis

Amargosa speckled dace

1) Moyle et al. 2023 formally named/described the *Rhinichthys* complex in California and Nevada, and former Amargosa Canyon speckled dace (*R. osculus* ssp. 1) and Owens speckled dace (*R. osculus* ssp. 2) are combined as newly described Amargosa speckled dace ().

Siphateles bicolor ssp. 11 R. nevadensis nevadensis

High Rock Springs tui chub

1) Formerly *Siphateles bicolor* ssp. 2, which did not account for other undescribed subspecies outside of CA.

Siphateles bicolor ssp. 12

Eagle Lake tui chub

1) Formerly *Siphateles bicolor* ssp. 1, which did not account for other undescribed subspecies outside of CA.

Siphateles bicolor ssp. 14

Pit River tui chub

1) Formerly *Siphateles bicolor* ssp. 3, which did not account for other undescribed subspecies outside of CA.

Amphibians

PLETHODONTIDAE (lungless salamanders)

Aneides niger

Santa Cruz black salamander

1) CDFW SSC status uses former subspecies concept of *Aneides flavipunctatus niger*.

Batrachoseps relictus

relictual slender salamander

1) Taxonomy follows Jockusch et al. 2012. Morphological and molecular diversification of slender salamanders (Caudata: Plethodontidae: *Batrachoseps*) in the southern Sierra Nevada of California with descriptions of two new species. Zootaxa 3190:1-30, which synonymized *Batrachoseps* sp. 1, Breckenridge Mountain slender salamander, with *B. relictus*.

Hydromantes shastae

Shasta salamander

1) *Hydromantes shastae* has been proposed to consist of cryptic genetic structuring that may warrant recognition of additional species named as *Hydromantes samweli* and *Hydromantes wintu* (Bingham et al. 2018, Bull. Mus. Comp. Zool. 161(10):403-427). Until formally reviewed by the Fish and Game Commission, all populations in the Shasta salamander complex are legally state threatened.

Plethodon asupak

Scott Bar salamander

1) Since this newly described species was formerly considered to be a subpopulation of *Plethodon stormi* (Mead et al. 2005), and since *Plethodon stormi* is listed as threatened under CESA, *Plethodon asupak* retains the designation as a threatened species under CESA (Calif. Regulatory Notice Register, No. 21-Z, p.916, 25 May 2007).

BUFONIDAE (true toads)

Anaxyrus californicus

arroyo toad

1) At the time of listing, arroyo toad was known as *Bufo microscaphus californicus*, a subspecies of southwestern toad. In 2001, it was determined to be its own species, *Bufo californicus*. Since then, many species in the genus *Bufo* were changed to the genus *Anaxyrus*, and now arroyo toad is known as *Anaxyrus californicus* (Frost et al. 2006).

Anaxyrus canorus

Yosemite toad

1) Formerly *Bufo canorus*; Frost et al. (2006. The Amphibian Tree of Life. Bulletin of the American Museum of Natural History 297: 1-370) placed this species in the genus *Anaxyrus* (Tschudi 1845).

Anaxyrus exsul

black toad

1) Formerly *Bufo canorus*; Frost et al. (2006. The Amphibian Tree of Life. Bulletin of the American Museum of Natural History 297: 1-370) placed this species in the genus *Anaxyrus* (Tschudi 1845).

Incilius alvarius

Sonoran Desert toad

1) Formerly *Bufo alvarius*. Between 2006-2009, the scientific name has been changed to *Cranopsis alvaria*, *Ollotis alvaria*, *Incilius alvarius*, back to *Ollotis alvarius*, and then back to *Incilius alvarius*. The common name has changed from Colorado River toad to Sonoran Desert toad.

RANIDAE (true frogs)

Lithobates pipiens

northern leopard frog

1) Formerly *Rana pipiens*; Frost et al. (2006. The Amphibian Tree of Life. Bulletin of the American Museum of Natural History 297: 1-370) placed this species in the genus *Lithobates* (Fitzinger 1843).

Lithobates yavapaiensis

lowland leopard frog

1) Formerly *Rana yavapaiensis*; Frost et al. (2006. The Amphibian Tree of Life. Bulletin of the American Museum of Natural History 297: 1-370) placed this species in the genus *Lithobates* (Fitzinger 1843).

Rana aurora

northern red-legged frog

1) An mtDNA study (Shaffer et al. 2004) concluded that *Rana aurora aurora* and *Rana aurora draytonii* should be recognized as separate species with a narrow zone of overlap

Rana draytonii

California red-legged frog

1) An mtDNA study (Shaffer et al. 2004) concluded that *Rana aurora aurora* and *Rana aurora draytonii* should be recognized as separate species with a narrow zone of overlap, and that the range of *draytonii* extends about 100 km further north in coastal California than previously thought.

Rana muscosa

southern mountain yellow-legged frog

1) Both federally recognized Distinct Population Segments (DPS) of the mountain yellow-legged frog (*Rana muscosa*) are currently Endangered (2021). The mountain yellow-legged frog – northern DPS is known from the southern Sierra Nevada; the mountain yellow-legged frog – southern DPS is known from the Transverse Ranges.

Rana sierrae

Sierra Nevada yellow-legged frog

1) Formerly *Rana muscosa*. *Rana muscosa* was split into *Rana sierrae*, the Sierra Nevada yellow-legged frog, found in the northern and central Sierra Nevada, and *Rana muscosa*, the southern mountain yellow-legged frog, found in the southern Sierra Nevada and southern California.

Reptiles

XANTUSIIDAE (night lizards)

Xantusia vigilis sierrae

Sierra night lizard

1) Formerly *Xantusia sierrae*; scientific name changed to reflect currently accepted subspecies concept.

ANNIELLIDAE (legless lizards)

Anniella alexanderae

Temblor legless lizard

1) Legless lizards (*Anniella* spp.) in California were traditionally considered one species, but are now considered five species (Pappenfuss and Parham, 2013). The prior (Jennings and Hayes, 1994) and current (Thompson et al. 2016) Species of Special Concern (SSC) projects evaluated the traditional single species taxon and determined all legless lizards in California to be an SSC. Therefore, the SSC status is carried over to the new taxon concepts until further SSC evaluation.

Anniella campi

Southern Sierra legless lizard

1) Legless lizards (*Anniella* spp.) in California were traditionally considered one species, but are now considered five species (Pappenfuss and Parham, 2013). The prior (Jennings and Hayes, 1994) and current (Thompson et al. 2016) Species of Special Concern (SSC) projects evaluated the traditional single species taxon and determined all legless lizards in California to be an SSC. Therefore, the SSC status is carried over to the new taxon concepts until further SSC evaluation.

Anniella grinnelli

Bakersfield legless lizard

1) Legless lizards (*Anniella* spp.) in California were traditionally considered one species, but are now considered five species (Pappenfuss and Parham, 2013). The prior (Jennings and Hayes, 1994) and current (Thompson et al. 2016) Species of Special Concern (SSC) projects evaluated the traditional single species taxon and determined all legless lizards in California to be an SSC. Therefore, the SSC status is carried over to the new taxon concepts until further SSC evaluation.

Anniella pulchra

Northern California legless lizard

1) Legless lizards (*Anniella* spp.) in California were traditionally considered one species, but are now considered five species (Pappenfuss and Parham, 2013). The prior (Jennings and Hayes, 1994) and current (Thompson et al. 2016) Species of Special Concern (SSC) projects evaluated the traditional single species taxon and determined all legless lizards in California to be an SSC. Therefore, the SSC status is carried over to the new taxon concepts until further SSC evaluation.

Anniella spp.

California legless lizard

1) This element represents California records of *Anniella* not yet assigned to new species within the *Anniella pulchra* complex. Legless lizards (*Anniella* spp.) in California were traditionally considered one species, but are now considered five species (Pappenfuss and Parham, 2013). CNDDB has assigned new species concepts to most, but not all, previously known and extant legless lizard occurrences. Where an occurrence of a legless lizard is not known to the species level, the general concept California legless lizard (*Anniella* spp.) will be applied until further evidence is available. All legless lizards in California are a Species of Special Concern (Thomson et al., 2016).

Anniella stebbinsi

Southern California legless lizard

1) Legless lizards (*Anniella* spp.) in California were traditionally considered one species, but are now considered five species (Pappenfuss and Parham, 2013). The prior (Jennings and Hayes, 1994) and current (Thompson et al. 2016) Species of Special Concern (SSC) projects evaluated the traditional single species taxon and determined all legless lizards in California to be an SSC. Therefore, the SSC status is carried over to the new taxon concepts until further SSC evaluation.

HELODERMATIDAE (venomous lizards)

Heloderma suspectum cinctum

banded Gila monster

1) BLM Sensitive designation refers to the full species.

NATRICIDAE (live-bearing snakes)

Thamnophis sirtalis pop. 1

south coast gartersnake

1) CDFW Species of Special Concern treats this population as a distinct taxon, though it is more commonly treated as a subpopulation of *Thamnophis sirtalis infernalis*, the California red-sided gartersnake.

Birds

PHASIANIDAE (grouse and ptarmigan)

Centrocercus urophasianus

greater sage-grouse

1) The federal proposal applies to the Bi-State DPS (Mono Basin of CA and NV; Mono, Alpine, and Inyo counties in California).

Dendragapus fuliginosus howardi

Mount Pinos sooty grouse

1) Formerly merged with *D. obscurus* as blue grouse, but separated on the basis of genetic evidence and differences in voice, behavior, and plumage.

PELECANIIDAE (pelicans)

Pelecanus occidentalis californicus

California brown pelican

1) Removed from Fully Protected list (Fish & Game Code §3511) in July 2023 by Senate Bill no. 147

ACCIPITRIDAE (hawks, kites, harriers, and eagles)

Circus hudsonius

northern harrier

1) Formerly considered conspecific with *Circus cyaneus*, but treated as separate on the basis of differences in morphology ,plumage, and breeding habitat.

FALCONIDAE (falcons)

Falco peregrinus anatum

American peregrine falcon

1) Removed from Fully Protected list (Fish & Game Code §3511) in July 2023 by Senate Bill no. 147

RALLIDAE (rails, coots, and gallinules)

Laterallus jamaicensis coturniculus

California black rail

1) The IUCN designation of Near Threatened refers to the full species.

CHARADRIIDAE (plovers and relatives)

Charadrius montanus

mountain plover

1) Proposed rule to federally list the mountain plover as threatened was withdrawn 20110512.

Charadrius nivosus nivosus

western snowy plover

1) Federal listing applies only to the Pacific coastal population.
2) CDFW SSC designation refers to both the coastal and interior populations.

LARIDAE (gulls and terns)

Gelochelidon nilotica

gull-billed tern

1) Taxonomy recently changed from *Sterna nilotica*.

Hydroprogne caspia

Caspian tern

1) Taxonomy recently changed from *Sterna caspia*.

Sternula antillarum browni

California least tern

1) Taxonomy recently changed from *Sterna antillarum browni*.

Thalasseus elegans

elegant tern

1) Taxonomy recently changed from *Sterna elegans*.

ALCIDAE (auklets, puffins, and relatives)

Synthliboramphus scrippsi

Scripps's murrelet

1) Formerly included in Xantus's murrelet as *Synthliboramphus hypoleucus scrippsi*. Now considered a full species.

STRIGIDAE (owls)

Athene cunicularia

burrowing owl

1) A burrow site = an observation of one or more owls at a burrow or evidence of recent occupation such as whitewash and feathers. Winter observations at a burrow are mapped. Winter observations with or without a burrow in San Francisco, Ventura, Sonoma, Marin, Napa, and Santa Cruz Counties are mapped.

Strix occidentalis caurina

northern spotted owl

1) There are no spotted owl EOs in the CNDDB. All spotted owl location information is maintained in a separate database (https://wildlife.ca.gov/Data/CNDDB/Spotted-Owl-Info). CNDDB subscribers can access these datasets from the same bookmark as the CNDDB layer in BIOS (https://www.wildlife.ca.gov/Data/BIOS).

Strix occidentalis occidentalis

California spotted owl

1) There are no spotted owl EOs in the CNDDB. All spotted owl location information is maintained in a separate database (https://wildlife.ca.gov/Data/CNDDB/Spotted-Owl-Info). CNDDB subscribers can access these datasets from the same bookmark as the CNDDB layer in BIOS (https://www.wildlife.ca.gov/Data/BIOS).
2) On 20230223, coastal-southern California DPS was federally proposed Endangered, and Sierra Nevada DPS was federally proposed Threatened.

TYRANNIDAE (tyrant flycatchers)

Empidonax traillii

willow flycatcher

1) State listing of the full species includes all subspecies.

Empidonax traillii brewsteri

little willow flycatcher

1) State listing of the full species includes all subspecies.

Empidonax traillii extimus

southwestern willow flycatcher

1) State listing of the full species includes all subspecies.

LANIIDAE (shrikes)

Lanius ludovicianus mearnsi

San Clemente loggerhead shrike

1) Subspecific identity of shrikes currently on San Clemente is uncertain. Mundy et al. (1997a, b) provided evidence *L. l.* mearnsi is genetically distinct from *L. l. gambeli* and *L. l. anthonyi*, whereas Patten and Campbell (2000) concluded, based on morphology, that the birds now on San Clemente are intergrades between *L. l. mearnsi* and *L. l. anthonyi*.

VIREONIDAE (vireos)

Vireo bellii arizonae

Arizona Bell's vireo

1) The IUCN designation of Near Threatened refers to the full species.

Vireo bellii pusillus

least Bell's vireo

1) The IUCN designation of Near Threatened refers to the full species.

TROGLODYTIDAE (wrens)

Campylorhynchus brunneicapillus sandiegensis

coastal cactus wren

1) CDFW Bird Species of Special Concern report uses the common name San Diego cactus wren.

POLIOPTILIDAE (gnatcatchers)

Polioptila californica californica

coastal California gnatcatcher

1) CDFW Bird Species of Special Concern report uses the common name Alta California gnatcatcher.

MIMIDAE (mockingbirds and thrashers)

Toxostoma lecontei

Le Conte's thrasher

1) CDFW SSC designation refers only to the San Joaquin population.

2) The BLM Sensitive designation refers to the San Joaquin Le Conte's thrasher, *Toxostoma lecontei macmillanorum*, although the subspecies concept is not universally recognized.

PASSERELLIDAE (sparrows)

Artemisiospiza belli clementeae

San Clemente Bell's sparrow

1) Subspecific validity uncertain. Recognized by AOU (1957), but not by Patten and Unitt (2002).

Melospiza melodia graminea

Channel Island song sparrow

1) Subspecific validity is uncertain. This subspecies when referred to as Santa Barbara song sparrow is extinct. However, the subspecies was merged by Patten (2001) with the San Miguel (*M. m. micronyx*), and San Clemente (*M. m. clementae*) song sparrows as the Channel Island song sparrow with the subspecific name *M. m. graminea*.

Melozone crissalis eremophilus

Inyo California towhee

1) Previously in the genus *Pipilo*.

PARULIDAE (wood-warblers)

Geothlypis trichas sinuosa

saltmarsh common yellowthroat

1) CDFW Bird Species of Special Concern report uses the common name San Francisco common yellowthroat

Setophaga petechia

yellow warbler

1) This element includes the subspecies *S. p. morcormi* and *S. p. brewsteri*, which are tracked under the full species, *S. petechia*, due to difficulty distinguishing them. *S. p. sonorana*, which nests in California only along the Colorado River, is tracked separately.

Setophaga petechia sonorana

Sonoran yellow warbler

1) Nests in California only along the Colorado River. Observations of yellow warblers from other regions are tracked as the full species, *S. petechia*.

Mammals

PHYLLOSTOMIDAE (leaf-nosed bats)

Leptonycteris yerbabuenae

lesser long-nosed bat

1) Federal listing uses the scientific name *Leptonycteris curasoae yerbabuenae*.

VESPERTILIONIDAE (evening bats)

Lasiurus frantzii

western red bat

1) Nomenclature changed from *Lasiurus blossevillii* to *Lasiurus frantzii* based on Baird et al. 2015, J. of Mammalogy 96(6):1255-1274.

APLODONTIIDAE (mountain beavers)

Aplodontia rufa californica

Sierra Nevada mountain beaver

1) The IUCN Least Concern designation refers to the full species.

Aplodontia rufa nigra

Point Arena mountain beaver

1) The IUCN Least Concern designation refers to the full species.

Aplodontia rufa phaea

Point Reyes mountain beaver

1) The IUCN Least Concern designation refers to the full species.

HETEROMYIDAE (kangaroo rats, pocket mice, and kangaroo mice)

Perognathus alticola alticola

white-eared pocket mouse

1) CDFW SSC, BLM Sensitive, and IUCN Endangered designations refer to the full species.

Perognathus alticola inexpectatus

Tehachapi pocket mouse

1) CDFW SSC and IUCN Endangered designations refer to the full species.

Perognathus inornatus

San Joaquin pocket mouse

1) This element includes the subspecies *P. i. inornatus* and *P. i. neglectus*, which are tracked under the full species, *P. inornatus*, due to difficulty distinguishing them. *P. i. inornatus* generally occurs on the eastern side of the San Joaquin Valley, while *P. i. neglectus* generally occurs on the western side. *P. i. psammophilus*, which occurs only in the Salinas Valley, is tracked separately.

CRICETIDAE (mice, rats, and voles)

Neotoma fuscipes riparia

riparian (=San Joaquin Valley) woodrat

1) This species is currently undergoing taxonomic revision

Reithrodontomys megalotis santacruzae

Santa Cruz harvest mouse

1) Synonymous with *Reithrodontomys megalotus longicaudus*, Santa Cruz Island population.

CANIDAE (foxes, wolves, and coyotes)

Urocyon littoralis catalinae

Santa Catalina Island fox

1) The IUCN Near Threatened status refers to the full species.

Urocyon littoralis clementae

San Clemente Island fox

1) The IUCN Near Threatened status refers to the full species.

Urocyon littoralis dickeyi

San Nicolas Island fox

1) The IUCN Near Threatened status refers to the full species.

Urocyon littoralis littoralis

San Miguel Island fox

1) The IUCN Near Threatened status refers to the full species.

Urocyon littoralis santacruzae

Santa Cruz Island fox

1) The IUCN Near Threatened status refers to the full species.

Urocyon littoralis santarosae

Santa Rosa Island fox

1) The IUCN Near Threatened status refers to the full species.

MUSTELIDAE (weasels and relatives)

Enhydra lutris nereis

southern sea otter

1) The IUCN Endangered designation refers to the full species.

Lontra canadensis sonora

southwestern river otter

1) CDFW SSC status refers only to the subspecies *L. canadensis sonora*, which is known in California only from the Colorado River.

Martes caurina humboldtensis

Humboldt marten

1) Federal status refers to the coastal DPS of Pacific marten (*Martes caurina*)

Pekania pennanti

Fisher

1) In 2004, the West Coast DPS of fisher became a candidate for federal listing, and underwent numerous evaluations, proposed rules, and revisions in subsequent years. In 2020, the West Coast DPS was further divided into the Southern Sierra Nevada DPS and the Northern California/Southern Oregon DPS (which also includes Northern Sierra Nevada and Southern Oregon Cascades subpopulations which arose from reintroductions). State threatened and federal endangered statuses apply only to the Southern Sierra Nevada ESU/DPS. State listing defines the northern limit of the SSN ESU as the Merced River, while federal listing uses the Tuolumne River.

BOVIDAE (sheep and relatives)

Ovis canadensis nelsoni

desert bighorn sheep

1) Desert bighorn sheep (*O. c. nelsoni*) in the Peninsular Ranges are tracked as a metapopulation of the subspecies, Peninsular bighorn sheep DPS (*O. c. nelsoni* pop. 2)
2) Fully Protected with the exception of legal hunting conducted in compliance with California Code of Regulations 14 CCR 362.

Ovis canadensis nelsoni pop. 2

Peninsular bighorn sheep DPS

1) The subspecies peninsular bighorn sheep (*O. c. cremnobates*) has been synonymized with *O. c. nelsoni* (Wehausen & Ramey 1993). Peninsular bighorn sheep are now considered to be a metapopulation and are recognized as a federal Distinct Population Segment (DPS).

EXHIBIT H

Understanding Blast Vibration and Airblast, their Causes, and their Damage Potential

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This document was originally presented at the Spring 2006 and Fall 2007 workshops of the Golden West Chapter of the International Society of Explosives Engineers and has been updated and revised to include new material.

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Disclaimer

The information contained in this document is meant to be informative and educational to those individuals involved with the use of explosives. As such, it is believed that the information presented herein is both reliable and accurate; however, because the author has no control over the conditions under which the information might be used, any and all risks associated with the use of the information contained herein lies with the reader.

It must be understood by all concerned that blasting is not an exact science and that safe blasting incorporates experience as well as the study and proper application of the fundamentals involved. If the reader is not adequately experienced in the type of blast-related operation that he intends to undertake, he is advised to obtain assistance from a qualified, experienced person before commencing the work and under no circumstances should he attempt to design blasts or conduct blasting operations based solely upon use of the information contained herein.

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Appendix A - Blasting Complaint Form

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1. Introduction to Blast Vibration and Airblast

When a blast is detonated, only a portion of the total energy is consumed in fracturing and shifting the rock. The remaining energy is dissipated in two forms:

(a) as vibration, in the form of seismic waves traveling very rapidly within the ground and along the ground surface and,

(b) as airblast, in the form of compression waves traveling through the air.

Blast Vibration.

Immediately surrounding the detonating hole is a crater zone (or inelastic zone), within which the rock has been fractured and displaced by the shockwave and by the pressure of the hot gasses generated in the explosion process. Outside this crater zone, the shockwave continues to travel, spawning a family of seismic waves. These waves radiating outward are categorized as body waves traveling through the ground and surface waves traveling on the surface of the ground.

The body waves consist of P (or primary) waves and S (or secondary) waves. P waves are compression waves that radiate outward from the source at velocities ranging from several thousand to twenty thousand feet per second, depending upon the sonic velocity of the material through which they pass. Over long distances, P waves average 5 kilometers (approximately 16,000 ft) per second. In addition to traveling faster, the P waves are of a higher frequency and dissipate more rapidly than the other wave types. S waves are shear waves (motion perpendicular to P waves). Their frequency is lower than P waves, they do not dissipate as rapidly, and they travel at approximately 60 percent of the velocity of the P waves.

Higher frequencies dissipate more rapidly than lower frequencies because energy is lost with each cycle (or reversal of direction). Higher frequencies cycle more often and consequently lose energy more rapidly.

Surface waves are formed as the body waves reach the surface. Of the various surface waves, the dominant one is the Rayleigh wave, characterized by motion that is in the form of a retrograde ellipse. (A vertical rolling loop moving away from the source, with the direction of motion at the top of the loop being back toward the source.) Surface waves travel at approximately 90 percent of the velocity of S waves and are of a lower frequency. Surface waves do not diminish as rapidly as the body waves. In all instances, however, the intensities of body waves and surface waves dissipate with distance.

It is this difference in the velocity of the various wave types that enables a seismologist to determine the distance from a recording station to the epicenter of an earthquake by comparing the arrival time of the different wave types. For vibration that is recorded on blasting seismographs in fairly close proximity to a blast however, the waves have not had time to sufficiently separate, and individual wave types are not easily identified.

As seismic waves travel outward from the blast, they excite the particles of rock and soil through which they pass and cause them to oscillate. Spherical spreading, energy loss and imperfect coupling of the particles, among other factors, cause these seismic waves to dissipate with distance. When we record blast vibration, it is the motion of these particles at a given point that is measured.

Blast vibration is described using the following terms:

Displacement - the distance the particles move, usually only a few ten-thousandths to a few thousandths of an inch.

Particle Velocity - how fast the particles move. Since the velocity is continually changing, the maximum, or **Peak Particle Velocity (PPV)**, is the important value. This rate is expressed in inches per second or millimeters per second.

Acceleration - the rate at which the particle velocity is changing, measured in feet/second/second, millimeters/second/second or in G's.

Frequency - The number of oscillations per second that a particle makes when under the influence of seismic waves, measured in Hertz (cycles per second).

(The mathematical relationships of the above four terms as they apply to sinusoidal waveforms are contained in Appendix C of this document.)

Propagation Velocity - The speed at which a seismic wave travels away from the blast, measured in feet/second or meters/second. (As indicated in the previous discussion and above, note that propagation velocity is several orders of magnitude greater than particle velocity.)

It is possible to record blast vibration as particle velocity, displacement or acceleration, depending upon the type of sensor being used. It has become standard practice for blasting, however, to use particle velocity as the best descriptor of vibration as it pertains to damage potential to residential structures. Most modern blasting seismographs use velocity sensors.

When blast vibration is recorded with a seismograph, the actual velocity of the particle motion, regardless of its direction, is recorded using a geophone block containing three mutually perpendicular velocity sensors. When properly oriented to the blast, these record in longitudinal (to and from the blast), in transverse (side to side) and in vertical axes. Each of these axes is recorded by a channel on the seismograph. Since the velocities are recorded against an accurate time base, additional information such as frequency, displacement, acceleration and true vector sum can also be derived. This is accomplished internally by modern blasting seismographs.

In close proximity to the blast, body waves dominate. As the distance from the blast increases, the body waves dissipate faster than the surface waves. As the surface waves become the dominant motion, the dominant vibration frequencies will be lower.

Some published blast vibration standards allow higher particle velocities at higher frequencies (which normally occur closer to the blast). This factor alone may allow the blaster to stay within the specified frequency-dependent limits as his blasts approach a protected structure. In other words, with no change in blast parameters or site geology, both the intensity and the frequency of the vibration would be expected to increase as the distance to the blast becomes smaller.

When the distance between the recording point and the blast becomes large enough, there is little the blaster can do to alter the frequency of the vibration. The greater the distance from the blast, waves that have traveled different paths arrive at different times and overlap. At much greater distances, the entire blast begins to take on the characteristics of a single point charge of relatively long duration. Individually detonating charges cannot easily be identified on a seismograph record unless the recording is accomplished quite close to the blast.

Airblast or Air Overpressures from Blasting.

As in the case of ground vibration waves, air overpressure waves radiate outward from a blast, diminishing with distance. Air, acting as a fluid, can only transmit compression waves.

There are various sources of airblast, some of which the Bureau of Mines identified in their report, RI 8485, *Structure Response and Damage Produced by Airblast from Surface Mining*, in 1980 and by Wiss and Linehan earlier. While these reports may seem a bit outdated, the air overpressure sources contained therein are still valid. Among them are:

Air Pressure Pulse (APP) - direct rock displacement at the face or mounding at the collar (the result is a low frequency air overpressure wave)

Rock Pressure Pulse (RPP) - vibrating ground at the measuring point (the result is low frequency air overpressure and is usually inconsequential)

Gas Release Pulse (GRP) - gas escaping through fractured rock (the result is medium to high frequency airblast)

Stemming Release Pulse (SRP) - gas escaping through blown-out stemming (the result is medium to high frequency airblast)

Unconfined surface charges, including detonating cord on the surface (the result is high frequency airblast)

Those waves from sources resulting in higher frequencies could be properly termed “airblast”. The term “air overpressure” is probably more suitable for the lower frequency waves, however it has become conventional to refer to all airborne blast pressures as airblast.

Airblast or air overpressures from blasting are measured in either decibels or psi or, in the case of SI (metric) units, in Pascals.

When comparing airblast with conventional noise sources, one must bear in mind that airblast is an impulse of very short duration and is not repeated continuously. For this reason, airblast limits are usually established that are well above the limits set for continuous noise sources and also above those limits usually imposed on firing ranges and the like that are sources of repeated impulses. Because of its very short duration, airblast makes a negligible contribution to recorded average daily noise levels.

That part of the air overpressure wave that is in the audible range (above 16 Hz or so) can be startling in an otherwise quiet surrounding. The energy level, however, is usually very small and will not normally contribute to actual damage. The lower frequency portion of the pressure wave, rather than being heard, is felt as concussion. This concussion tends to excite structures and cause windows and doors to rattle. Damage from this concussion at elevated levels is possible, but the major adverse contribution is to human response. If a nearby blast causes windows to rattle, the average person cannot tell whether it was airblast or vibration that caused it, although he will generally assume the latter.

2. The Effect of Blast Vibration on Materials and Structures

In order to provide some idea of what various PPV intensities represent, their effect on various structures and materials is contained in the following listing. These have been documented by researchers and organizations as referenced. Because of the many variables that could be encountered in the field, this listing should not be used to establish limits or be considered as the absolute point where the effect will always occur. To do so would also require consideration of frequencies. PPV units are inches per second.

PPV	Application	Effect	Reference
600	Explosive inside concrete	Mass blowout of concrete	j
375	Explosive inside concrete	Radial cracks develop in concrete	j
200	Explosive inside concrete	Spalling of loose/weathered concrete skin	j
> 100	Rock	Complete breakup of rock masses	a
100	Explosive inside concrete	Spalling of fresh grout	j
100	Explosive near concrete	No damage	l
50 - 150	Explosive near buried pipe	No damage	n
25 - 100	Rock	Tensile and some radial cracking	a
40	Mechanical equipment	Shafts misaligned	d
25	Explosive near buried pipe	No damage	o
25	Rock	Damage can occur in some rock masses	c
10 - 25	Rock	Minor tensile slabbing	a
24	Rock	Rock fracturing	b
15	Cased drill holes	Horizontal offset	d
> 12	Rock	Rockfalls in underground tunnels	b
12	Rock	Rockfalls in unlined tunnels	g
< 10	Rock	No fracturing of intact rock	a
9.1	Residential structure	Serious cracking	b
8.0	Concrete blocks	Cracking in blocks	d
8.0	Plaster	Major cracking	h
7.6	Plaster	50% probability of major damage	g
7.0 - 8.0	Cased water wells	No adverse effect on well	m
> 7.0	Residential structure	Major damage possible	e
4.0 - 7.0	Residential structure	Minor damage possible	e
6.3	Residential structure	Plaster and masonry walls crack	b
5.44	Water wells	No change in well performance	k
5.4	Plaster	50% probability of minor damage	g
4.5	Plaster	Minor cracking	h
4.3	Residential structure	Fine cracks in plaster	b
> 4.0	Residential structure	Probable damage	f
2.0 - 4.0	Residential structure	Plaster cracking (cosmetic)	e
2.8 - 3.3	Plaster	Threshold of damage (from close-in blasts)	g
3.0	Plaster	Threshold of cosmetic cracking	h
1.2 - 3.0	Residential structure	Equals stress from daily environmental changes	i
2.8	Residential structure	No damage	b
2.0	Residential structure	Plaster can start to crack	d
2.0	Plaster	Safe level of vibration	g
< 2.0	Residential structure	No damage	e
< 2.0	Residential structure	No damage	f
0.9	Residential structure	Equivalent to nail driving	i
0.5	Mercury switch	Trips switch	d
0.5	Residential structure	Equivalent to door slam	i
0.1 - 0.5	Residential structure	Equates to normal daily family activity	i
0.3	Residential structure	Equivalent to jumping on the floor	i
0.03	Residential structure	Equivalent to walking on the floor	i

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3. Probable Results of Impulsive Airblast

The relationship of decibels to pressure and the probable result of various airblast intensities are presented in the following chart. The equivalent wind gust velocities are also given for several intensities.

Airblast Intensity dB	psi	Probable Result	Average Human Response
180	2.900	Structural damage	Ear drum rupture possible
175	1.631		
170	0.917	Many windows break	Intolerable
165	0.516		
160	0.290		
155	0.163	(equal to a 96 mph wind gust)	
150	0.092	Poorly mounted windows can break	
145	0.052		
140	0.029	(equal to a 40 mph wind gust)	Distinctly unpleasant
134	0.0145	OSMRE and USBM limit	
130	0.0092	(equal to a 23 mph wind gust)	
125	0.0052		
120	0.0029		Mildly unpleasant
115	0.0016		
110	0.00092	(equal to a 7.2 mph wind gust)	
105	0.00052		
100	0.00029		
95	0.00016		
90	0.000092		Strongly perceptible
85	0.000052		
80	0.000029		
75	0.000016		
70	0.0000092		Distinctly perceptible
65	0.0000052		
60	0.0000029		Perceptible

In the foregoing chart it should be noted that Average Human Response is just that. One can find individuals who would tolerate considerably higher intensities of airblast without complaint, while others may claim to be distressed at much lower intensities.

The formula for converting pressure in psi to decibels is -

$$dB = 20 \log (psi / 2.9 \times 10^{-9})$$

or conversely,

$$psi = 2.9 \times 10^{-9} \times \text{anti-log} (dB / 20)$$

The formula for equating wind gusts to pressure is from PPG Industries' architectural design criteria for their windows and is expressed as –

$$psi = 1.78 \times 10^{-5} \times V^2$$

where V is the wind speed in miles per hour.

4. Human Response to Blast Vibration and Airblast

Human response is not something that the explosive user can readily control, although one might be able to affect it in a positive way if it can be understood and properly addressed. The main contribution of typical human response to blast effects is that it increases the perception that some damage was either possible or likely to have occurred from the blasting.

Most humans are quite sensitive to motion and sound. They can perceive levels of each that are well below (by a factor of 100 to 1000 or more) those levels that could cause damage to the average structure. As sensitive as they may be, however, humans are notoriously bad in their estimation of the intensity levels of vibration and airblast. Even trained individuals, in the absence of instrumentation, have been known to make poor estimates of intensity levels.

Among the factors that have an impact on human response are:

(a) health of the individual.

(b) orientation of the individual – i.e. in a standing position, more responsive to vertical motion; lying down, more sensitive to motion from side to side.

(c) location of the individual – indoors, more receptive to structure noises; outdoors, blast effects are not as noticeable and may be masked by ambient noise and vibration.

(d) activity of the individual – persons at rest are more sensitive than those actively engaged in some physical activity.

(e) whether the individual is pre-warned or not (the startle factor) – persons expecting a blast will usually not consider the effects to be as severe as those who are not warned.

(f) quality and type of construction (for those indoors) – structural noises and rattling of windows and doors.

(g) ambient noise or vibration levels – blast effects are not perceived to be as severe when other ambient noise and vibration are present.

Obviously, there is a wide range of human response to blasting and blast effects. On one end of the spectrum is the individual who recognizes some benefit from the blasting operation. He or she will usually be a friend or ally and can actually assist in public relations with other more "average" neighbors.

At the other end of the spectrum is the individual who, for whatever reason, did not want the blasting operation there in the first place. It is not likely that anything you do, short of going away, will satisfy him. You can't ignore him, though.

Between these two extremes will be the individuals from whom you can benefit the most with a good informational or public relations program.

Attempts have been made by many to quantify Human Response in technical terms. In most cases, researchers have found that, while you can gather data on how humans respond to sonic booms, ground vibration, earthquakes, etc., the subject tends to be an elusive target. This is because there are many factors, physiological, technical and political, that can skew the results. While this may appear to make it seem futile to address human response, this is not the case.

The easiest case is the friend of the operation. Make sure that he understands that you appreciate his feelings toward your operation and that you also appreciate any efforts he may make on your behalf. While it isn't likely that he would change his opinion, you shouldn't ignore him. Stay in touch with him.

The most difficult, the fellow who didn't want you and your blasting in his neighborhood in the first place, is going to require a completely different approach. Don't ignore him either. It will only make him try harder to get you out of his life. Treat him with respect and treat him fairly, but be firm. If you didn't cause the damage that he may be claiming, there is no reason for you to pay for fixing it. When he calls and complains, don't immediately deny his claim. While you may feel certain that you didn't damage him, you cannot reach a conclusion until a proper investigation is done. Your best defense will be to use all the tools at your disposal. Pre- and post-blast surveys should be considered. Recording of blast vibration and airblast with blasting seismographs will help you disprove any false claims of damage.

While you might be inclined, as a good will gesture, to pay for minor damage claimed, be aware that if you knuckle under and pay for something that you did not cause, you will probably find that he has additional items to fix. You also run the risk of him boasting to others how he got you to take care of his problem. This could initiate a flood of complaints. Again, your best bet is to be fair, but be firm.

Before going further, with regard to the preceding comments, some (but not all) insurance companies will have a tendency to look at the cost of settling a claim versus the cost of fighting it. They will usually conclude that it is cheaper to settle than fight. Unfortunately, in addition to a total lack of fairness in the matter (and the loss experience that you or your company will receive because of it) this can establish a precedent for others who may then also claim damage.
Get a good investigative consultant or consulting group, pay promptly for only the damage that you cause (or was likely caused by you) and, above all, let your insurance company know how you feel in the matter.

Getting back to human response, what can you do to properly address those individuals who are average in their response? First, try to find out what their concerns really are. Most people haven't been around blasting and may be more fearful of it because of the unknown or because of what they see in movies or on television. When they see earthquake damage on TV, they don't understand the differences between the ground motion that caused it and the ground motion from blasting. It is understandable that they might be concerned. You (or your blast effects consultant) should explain beforehand what they will feel, see and hear when you conduct your blasting operation. Educate them. Pre-blast surveys provide an excellent opportunity to meet and talk with these people. Take advantage of that opportunity.

While some may argue against warning neighbors when a blast is going to take place, the lack of a proper warning severely increases the startle effect. In my experience, when I have been standing with neighbors and have counted down to a properly designed blast, the usual comment has been, "Is that all there is to it?" On the other hand, when a blast is detonated with no warning, most people perceive it to be worse than it really is.

Most individuals appreciate the attention that you show them when you monitor vibration and airblast at or near their residence. Granted, there are some who will refuse to allow equipment to be set up on their property, but they are usually in the minority. In some instances, just knowing that the blast effects were recorded by instruments will preclude someone from claiming damage.

Structural response has an impact on human response when the structure amplifies or otherwise adversely affects the noise and/or motion that the human may hear or feel indoors when you blast. Low frequency concussion that may only sound like a muffled thump outdoors, will probably rattle windows and other objects indoors when it reaches the side of a structure.

In the author’s experience, many complaints blamed on blast vibration should have actually been attributed to airblast. Without instrumentation, the average homeowner has no way of telling the difference. When someone a half mile away complains that you shook their house and you calculate a peak particle velocity well below the average threshold of human perception, don't tell them they're crazy. They know what they experienced. Investigate their complaint. It’s possible that your blast generated a low frequency airblast pulse in their direction.

If the blast under consideration is going to be a one time affair, consider establishing a safe viewing location for the neighboring residents. Not only will they appreciate the attention and the chance to witness the blast, they will not be in their houses to possibly hear the windows or other objects rattle. (Make sure the viewing location is truly safe, though. Your efforts at PR will suffer greatly if they are frightened or have to duck flying objects.)

Above all, be a good neighbor. Design blasts to keep adverse effects to a minimum. Cultivate good relationships with your neighbors. Remember, some day you might need to modify your operating permit for a mining operation or, in the case of construction, need to blast in an area where permitting has been difficult in the past. A few friends and neighbors who speak highly of your blasting may come in handy. In the meantime, keep good blasting records, monitor your blasts and keep a good log of complaints as they are received and the disposition of the investigation of those complaints.

Most persons, when invited to witness a well-designed blast, are usually disappointed and tend to feel that the effects are minimal. Some have gone so far as to accuse the blasting company of purposely setting off a much smaller blast than normal, when the opposite situation has actually occurred.

For further study on the subject of human response, see Oriard (1999 and 2002) or USBM RI8485 as referenced in Appendix D.

5. Blast Scaling

To facilitate comparing or estimating the effects from blasts of varying charge weights and varying distances, some scaling method is required. The conventional scaling method in use is referred to as **Scaled Distance (D_s)**, a number (without units) that provides a means of scaling a ratio of distance and charge weight.

Square Root Scaled Distance is derived by dividing the true ground path distance between the detonating charge and the object of interest by the square root of the charge weight. This is used for scaling blasts involving linear charges (the length is more than four times the diameter) and would apply to most conventional blasts.

$$\textbf{Square Root } (D_s) = \textbf{Distance / Weight}^{1/2}$$

Cube Root Scaled Distance is similarly derived except that it uses the cube root of the charge weight. Cube Root scaling is used for those instances where the item of interest involves airblast or air overpressures, underwater blast pressures and for those infrequent instances where ground vibration is generated by a spherical charge (the length of the charge is less than four times the diameter).

$$\textbf{Cube Root } (D_s) = \textbf{Distance / Weight}^{1/3}$$

When scaling blasts, the proper charge weight for the calculations would be the total quantity of explosive that is detonated in a given instant. Instant (for this purpose) has been further defined as being that amount of explosive detonating within any 8 millisecond time period.

With proper care, $\mathbf{D_s}$ can be used to predict blast vibration. When utilized in conjunction with blast vibration monitoring, it facilitates the design of blasts to conform to vibration limits. Shorter distances and higher explosive weights result in a lower $\mathbf{D_s}$ and would yield more vibration. Conversely, greater distances and smaller explosive weights result in a higher $\mathbf{D_s}$ number and less intense vibration.

In order to accommodate a large range of Scaled Distances and PPVs, the data is usually plotted on graphs that are logarithmic in both horizontal and vertical axes.

The correct $\mathbf{D_s}$ is the lowest number calculated for various configurations within the blast and will more closely relate to the highest intensity of vibration. Technically speaking, there are as many $\mathbf{D_s}$ numbers as there are holes detonating. If all the holes are loaded nearly identically and are detonated on individual delays, the closest hole will naturally yield the lowest number.

If the blast has varying charge weights (the shot may be deeper in some areas), the lowest $\mathbf{D_s}$ may be calculated for a hole that is actually farther away, toward the center of the blast, or even on the far side of it from the object of concern.

With regards to distance measurements, bear in mind that blast-induced ground vibration (for our purposes) can travel only through the ground. It can't jump across an open space. The shortest path through the ground between the detonating hole and the object of interest should be the distance used. If the distance is a couple of hundred feet, measure it with a tape. Out to five hundred feet or so, use a wheel or pace it off (if you can do so accurately). For distances of five hundred feet or more, a GPS would prove valuable. Whatever method is used, remember to adjust for any change in terrain. Strive for maximum accuracy.

Similarly, the correct distance for air overpressure purposes would be the shortest distance through air between the detonating charge and the item of concern.

Precautions to observe when scaling blasts.

Possible problems with Scaling (square root or cube root) may be encountered in certain situations. If more than one hole is detonated simultaneously, in most instances they will not all cooperate fully in increasing vibration. An example might be a long row of charges detonating simultaneously, with the point of interest located adjacent to the row. Obviously, the nearest hole and those close to it would cooperate. Holes at a much greater distance would not. Oriard (2002) found that only the holes that were included in a length along the row equal to twice the distance from the row to the point of interest contributed appreciably to the vibration intensity. For example, say you are recording 20 feet to the side of such a row. Only the nearest hole and those located within about 20 feet to either side of that hole would contribute. Counting additional holes would yield a lower $\mathbf{D_s}$ number, but without an appreciable increase in vibration intensity.

A similar situation could occur if one were to try to record near a hole with an extremely long charge length. While these situations do not occur often in normal blasting schemes, they are brought to your attention so that you might recognize them when they are encountered.

Blasters should also be aware that just because two blasts have the same calculated $\mathbf{D_s}$, the potential effects may not be the same. A large blast at a great distance and a small blast much closer might have the same $\mathbf{D_s}$, but the characteristics of the blast-generated vibration would not be the same. The distant blast would have lower frequencies and lower acceleration levels while the closer blast characteristics would be just the opposite. It is for this reason that one of the OSMRE alternative blasting level criteria allows a $\mathbf{D_s}$ that varies with distance.

6. Predicting Blast Vibration

Various methods of predicting blast vibration have been used by researchers through the years, but the most commonly used prediction curves were developed by Lewis L. Oriard, a noted seismologist from Huntington Beach, California (now retired). His curves are based upon data gathered from a large number of blasts in various geological settings. Most other researchers have come to similar conclusions with their estimations usually falling somewhere within Oriard's parameters.

The graph that follows contains curves representing Oriard's upper and lower bounds for typical down-hole blasting and also a higher approximation for those instances where there is very high confinement, such as in pre-splitting. It is important to understand that, due to the many variables involved in blast design and site-specific geology, it is possible that data points can fall above or below the bounds for typical data shown on the graph. Oriard's basic formula for predicting blast vibration is:

$$\mathbf{PPV = H \times (D_s)^{-1.6} \times K1, K2, K3, etc.}$$

where **PPV** is the Peak Particle Velocity (in inches per second) of a particular axis,

H is a factor that varies as follows:

Lower bound for conventional blasting = 24.2

Upper bound for conventional blasting = 242

Typical bound for increased response (pre-splitting, etc.) = 605

$\mathbf{D_s}$ is the Square Root Scaled Distance (as defined earlier),

The attenuation slope of **-1.6** is typical. It can be steeper for body waves recorded close to the blast or can be flatter at extended distances where surface waves would dominate. In your estimations for a given location it is best to use an attenuation slope of **-1.6** until enough data is gathered to facilitate calculating a site-specific attenuation slope.

$\mathbf{K_1}$, $\mathbf{K_2}$, $\mathbf{K_3}$, etc. are factors as described below:

The resulting peak particle velocity will decrease with -

decreasing confinement of the explosive energy,

decreasing elastic moduli,

increasing spatial distribution of the energy source,

increasing time of energy release or timing scatter,

decreasing coupling of the energy source,

and other similar factors.

(PPV would obviously increase when the effect of these factors is reversed.)

Of the factors involved, charge weight and distance, followed closely by confinement of the explosive energy, will have the most impact on vibration. Confinement of the energy is increased as the burden and spacing increase, the depth of burial of the charge increases, strength of rock improves, quality of stemming improves, etc.

Spatial distribution of the energy source would occur when two holes detonating simultaneously are separated by some finite distance. The combined weight of explosive in such holes will not generate as much vibration as one hole containing a similar total charge weight. The effect will vary depending upon the distance between the holes. The greater the distance, the less they will cooperate.

In using the Oriard prediction curves it is important to understand that the particle velocities used are those from individual channels and not the vector sum.

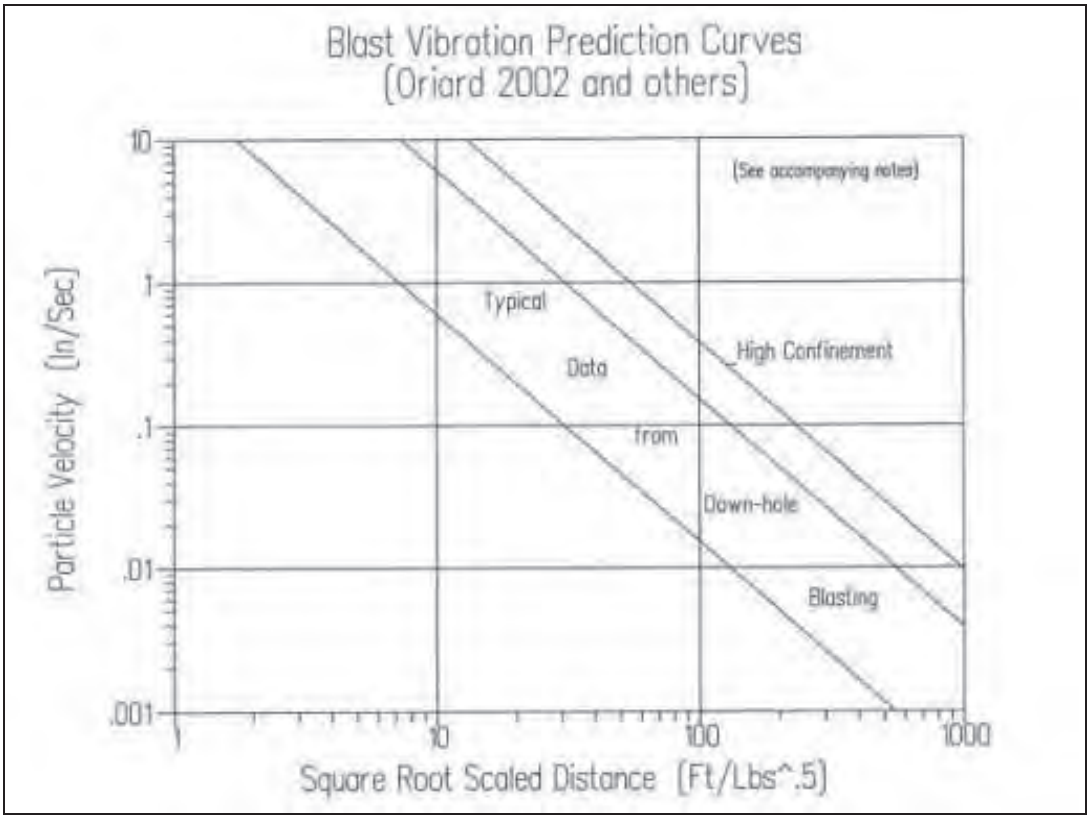
True vector sum is derived by summing the squares of the particle velocities of all three channels (at the same instant in time) and extracting the square root of that sum. Although this would indeed yield the absolute highest particle velocity for the event, current convention does not use vector sum. When our current vibration standards and prediction curves were developed, digital seismographs had not been developed and analog equipment was still in use. Vector sums could only be derived by hand digitizing the data, hence single channel data were used. Modern digital seismographs have the ability to calculate and display vector sum. The true vector sum could be as much as 73% higher than the highest individual channel although, in practice, it is usually only 15 to 20% higher. This difference should be taken into consideration if a vector sum vibration limit were to be proposed, with the limit increased accordingly.

Persons experienced in blast vibration prediction will use the range given in the curves (or formulas) as a basis and adjust them for any blast-specific variables that they can identify and quantify through experience. Data from previous blasts at the site should be plotted on log-log paper (usually obtainable from university or community college bookstores) or plotted on a computer using a good graphing program. Success in predicting blast vibration largely depends upon the experience of the predictor and the accuracy of the input data. In addition to making sure the charge weights are correct, the correct number of holes per delay should be verified and, if more than one hole or deck is detonating simultaneously, the spatial separation of those holes or decks should be noted.

In developing prediction curves for blasts, it is extremely helpful to gather data from a wide range of Scaled Distances. If all of the data is from a narrow band of D_s, it will be difficult to establish a regression factor.

When predicting blast vibration (or airblast, for that matter) it is always preferable to predict within a range rather than predicting a single number. It is also important to base your estimate on as many data points as possible.

If you are attempting to predict vibration for the first blast at a site, you will have to rely upon your experience at predicting and on as many of the blast and geological parameters as you can quantify.



7. Predicting Airblast or Air Over-Pressures

In a manner similar to vibration, air overpressures from blasting can be predicted, however Cube Root Scaling is used rather than square root.

The curves that follow are based upon data gathered from blasts in many varied locations and from research done by various individuals and organizations. Again, due to variables, many of which are difficult to quantify, data points for a given event may fall above or below the bounds shown on the graph. Results are approximate at best because wind velocity and direction can fluctuate widely in a very short span of time.

The prediction curves use a basic formula for estimating air overpressures:

$$\textbf{Peak Air Overpressure (in PSI)} = K \left(D_S \right)^{-1.2}$$

where $\mathbf{D_S}$ is the Cube Root Scaled Distance (as previously defined).

The curves representing the normal upper and lower bounds for confined charges and for the average for unconfined charges use combined **K** factors (intercepts at a D_s of 1) as follows:

Lower bound for normal blasting	0.78
Upper bound for normal blasting	2.5
Average for unconfined charges	82

The attenuation slope of **-1.2** is typical for static conditions and represents a reduction of approximately 7.2 dB for each doubling of distance. Some researchers have used attenuation slopes as flat as -1.0 or -1.1; however, the difference in pressures from using those slopes does not become a major factor until a considerable distance has been reached. If the airblast is caused by detonating high velocity explosives in mid-air, the actual slope may approach -1.3 or -1.4. This steeper slope would be the result of the higher frequencies decaying more rapidly than the lower frequencies that result from conventional blasts.

In addition to charge weight and distance (which impact the Cube Root Scaled Distance), the following factors affect the intensity of air overpressures or airblast:

Depth of burial of the charge

Terrain features, trees and foliage or other screening

Blast face orientation (facing toward the recording point increases the intensity recorded)

Velocity of blast progression (either across the face or along the surface)

Explosive composition (This can affect the elapsed time of energy release. Compared to other factors, this is minor and can normally be disregarded for most conventional in-ground explosive products)

Atmospheric conditions such as:

- Changes in Barometric Pressure - minimal effect that can normally be disregarded.

- Humidity - normal daily fluctuations may be disregarded; however, the difference between a very dry day and a rainy one can be noticeable.

Temperature gradients -

Normal (cooler with increasing altitude) - sound is refracted upwards and the blast may not be noticeable at a distance.

Inversion (warmer with increasing altitude) - sound is refracted downwards and the blast may suddenly become noticeable at a distance.

Note: A temperature inversion has little effect in the immediate area of the blast and usually only affects airblast intensities beyond a radius equal to the height of the inversion layer. Rather than focusing airblast and causing damage, a temperature inversion usually results in the blast suddenly becoming audible at a greater distance.

Wind direction and velocity - These have a major impact on air overpressure intensity. Downwind from the blast, the intensities will not dissipate as rapidly as they would upwind from the blast. Also, because wind velocities typically increase as you move upward from the ground surface, the wave front is being bent downward. This can add from several to 20 or so decibels to the intensity.

Wiss (1978) suggested that one may attempt a rough approximation of the effect of wind direction and velocity by modifying the attenuation rate of -1.2 by adding to it the result of:

Additive = 0.0265 V cos A

where **V** is the wind velocity in mph,

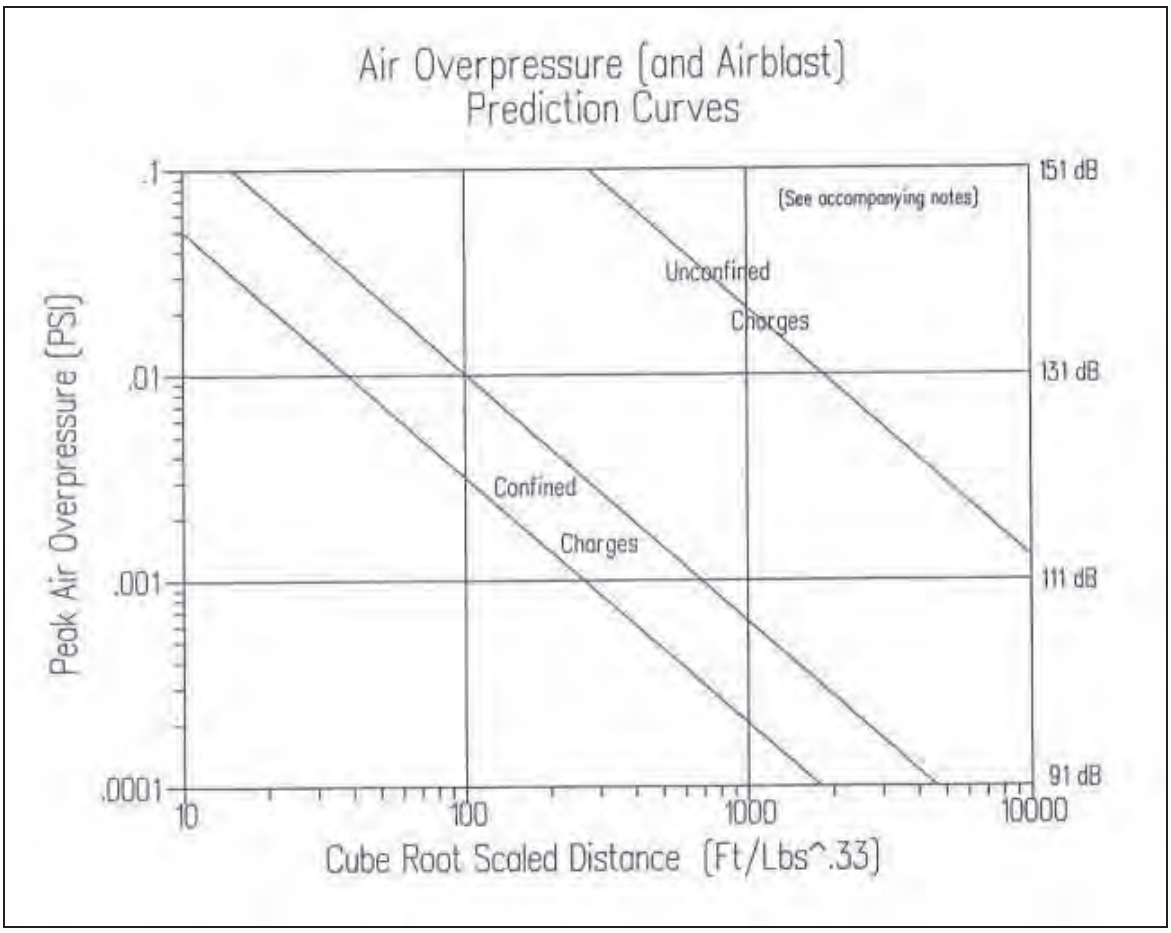
and **A** is the angle (in degrees) between the wind direction and a line from the blast to the recording point.

(Wind blowing from the blast directly toward the recording point would be 0 degrees, resulting in an attenuation rate lower than -1.2. Conversely, a wind blowing directly away from the recording point would be 180 degrees, resulting in an attenuation rate that is higher than -1.2.)

(CAUTION: The above modification of the attenuation rate was derived from data gathered from blasts during wind conditions up to a maximum of approximately 30 mph. At wind velocities in excess of this, the formula can result in a slope that is flat or inverted. Such a slope would result in predicted blast air overpressures that would remain constant or increase with distance, a situation which is not physically possible.)

In addition to the cautions concerning charge weights and delays mentioned in the previous comments on predicting vibration, it is important that the shortest distance through the air be used as the distance for predicting airblast. Depending upon the terrain, this may not always be a straight line.

The estimation of air overpressures is considerably more difficult than estimating vibration due to weather variables that can change from moment to moment. For this reason, it is usually advisable to allow for a greater margin of error when estimating air overpressures and airblast. Gathering data for specific sites and carefully noting weather conditions at blast times can assist in building accurate prediction curves for specific operations or specific sites.



8. Blast Vibration Regulatory Limits

U. S. Bureau of Mines -

In 1974, the Bureau of Mines began a study to gather and update available blast vibration data. Work was included in the area of structural and human response to vibration. This resulted in the publishing in 1980 of Bureau of Mines Report of Investigations 8507, *Structure Response and Damage Produced by Ground Vibration From Surface Mine Blasting*. Some of the conclusions contained in the report are as follows:

1. Peak Particle Velocity is the most practical descriptor of vibration as it applies to the damage potential for residential structures.

2. The potential for damage to residential structures is greater with low frequency blast vibration (below 40 Hz) than with high frequency blast vibration (40 Hz and above).

3. The type of residential construction is a factor in the vibration level required to cause damage.

4. Alternative blasting level criteria were proposed that utilized limits over a wide range of frequencies and included consideration of some limits on displacement. A graph containing the RI 8507 alternative criteria is included at the end of this discussion.

Office of Surface Mining and Reclamation Enforcement (OSMRE) -

In 1983, the OSMRE established regulations controlling vibration at all surface coal mining operations. Three optional methods of limiting vibration are allowed:

1. The first option limits Peak Particle Velocity based upon the distance to the nearest protected structure. Each blast must be monitored by a seismograph. Velocities must be kept at or below the following levels at said structures:

Distances up to 300 feet ..... 1.25 inches/second

Distances of 301 to 5000 feet ..... 1.00 inches/second

Distances beyond 5000 feet ..... .75 inches/second

2. The second option does not require monitoring, but requires the operator to design his blasts utilizing Scaled Distances (D_S). The calculated Scaled Distances must not fall below the following values:

Distances up to 300 feet 50

Distances of 301 to 5000 feet 55

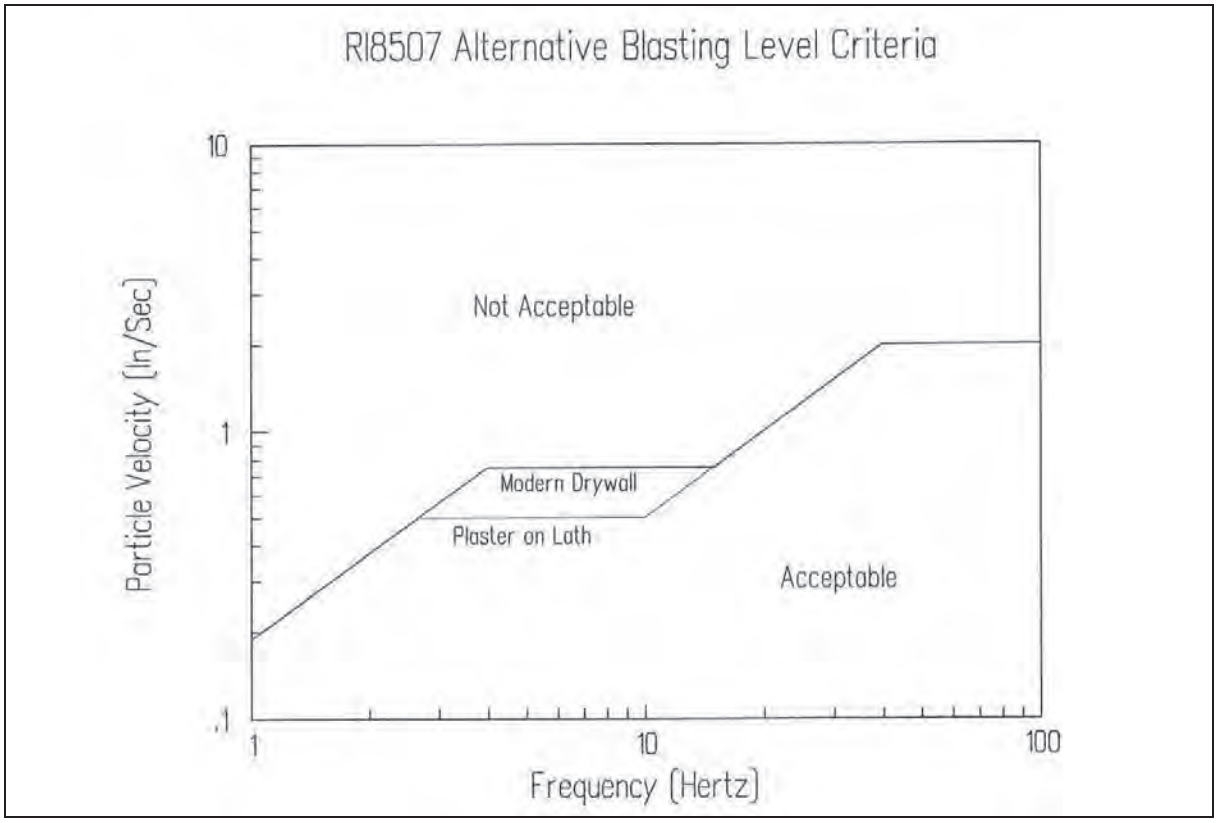
Distances beyond 5000 feet 65

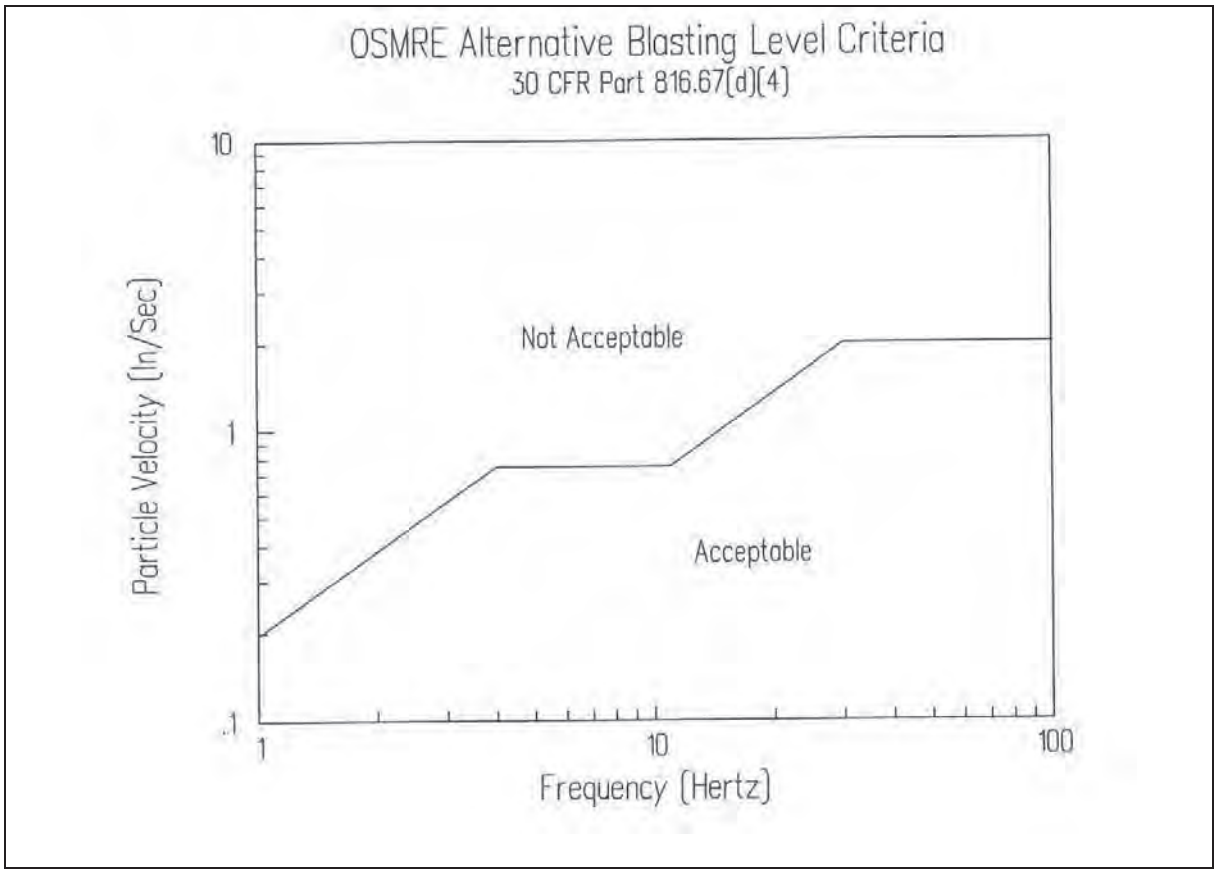
3. The third option requires an operator to monitor his blasts with a seismograph and allows the use of Particle Velocity limits that vary with frequency, similar to the Alternative Blasting Level Criteria proposed in RI 8507 by the Bureau of Mines. The OSMRE option differs from RI 8507 in two areas: (1) it does not differentiate between drywall and plaster-on-lath construction, allowing 0.75 inches per second for either case, and (2) it allows a Particle Velocity of 2.0 inches per second to be acceptable down to a frequency of 30 Hz rather than 40 Hz. A chart depicting this option is included on the following pages.

An analysis of the three OSMRE alternatives indicates that the second option, while not requiring recording, is quite conservative. This option could be feasible in remote locations where distances to structures were large. The third option will usually provide the operator with more flexibility, particularly for close-in blasts where frequencies would be higher.

Other blast vibration limits have been proposed for specific instances and applications. It is not unusual to find PPV limits approaching 0.5 inches per second for fragile or historic structures. These situations should be evaluated and limits applied on a case by case basis.

It is also not unusual to find instances where the limit for a residential structure is incorrectly applied to massive concrete structures, buried pipelines and other vibration resistant structures. In many of these, a far better approach would be to use a ground control specification rather than vibration limit. The damage potential more likely would come from back-break or rock-block movement than from blast-generated vibration.


RI8507 Alternative Blasting Level Criteria
10
1
.1
Particle Velocity (In/Sec)
Not Acceptable
Modern Drywall
Plaster on Lath
Acceptable
1
10
100
Frequency (Hertz)


OSMRE Alternative Blasting Level Criteria
30 CFR Part 816.67(d)(4)
10
1
.1
Particle Velocity (In/Sec)
Not Acceptable
Acceptable
1
10
100
Frequency (Hertz)

9. Airblast Regulatory Limits

Bureau of Mines Report of Investigations 8485 (1980), "Structure Response and Damage Produced by Airblast From Surface Mining" generally recommends a maximum safe overpressure of 0.014 psi (134 dB) for airblast recorded at residential structures.

The OSMRE addressed airblast limits in their regulations of 1983. However, they also took into consideration the characteristics of the recording systems and established the following limits:

Recording device with a lower frequency response limit of 0.1 Hz ..... 134 dB *

Recording device with a lower frequency response limit of 2.0 Hz ..... 133 dB

Recording device with a lower frequency response limit of 6.0 Hz ..... 129 dB

Recording device C weighted, slow response …….. 105 dB *

* These can be used only with prior approval of OSMRE.

Generally, the above USBM and OSMRE limits on blast vibration and on airblast are quite conservative as they would apply to the potential for actual damage. It would appear that they were developed more for reducing human annoyance than to prevent damage to residential structures. Residential structures and humans are rather sensitive “seismographs”, although they tend to not be calibrated well. Buildings respond to minor vibration and to air overpressures by rattling windows and making other sounds. When the occupants hear these, the overall effects tend to be amplified. For this reason, it is important that blasters and blast designers strive to minimize the adverse effects of blasting as much as possible.

Important: The fact that blast vibration and airblast are kept below accepted standards does not guarantee that claims for damage will not be made (although the occurrence of actual blast-induced damage would be extremely unlikely).

10. Blast Recording

Definitions:

Seismograph - an instrument that writes a permanent continuous record of motion. A seismograph's physical constants are known accurately enough that it can be calibrated. The motion is recorded against a time base, allowing for the calculation of acceleration, displacement, velocity and frequency.

Transducer (or **sensor**) - an individual device that converts motion or pressure to voltage or capacitance.

Geophone or **Geophone block** - a housing that contains three motion transducers mounted in mutually-perpendicular axes; longitudinal, transverse and vertical.

Longitudinal axis - horizontal and oriented to record radial motion emanating from the source. The direction of the arrow on the geophone block. Motion to and from the source.

Transverse axis - horizontal, but oriented 90 degrees from the longitudinal axis. Motion from side to side.

Vertical axis - vertical, oriented 90 degrees from other two axes. Motion up and down.

Seismographs could be constructed with sensors to record in terms of particle velocity, particle displacement or particle acceleration. It is conventional in blasting, however, to record velocity. Modern units are also capable of recording the output of other types of sensors such as strain gauges, pressure transducers, etc.

We monitor the effects of blasting (1) to defend against claims of damage, (2) to comply with job specifications or regulatory or permit limits, (3) for in-house use such as slope stability or protection of owned facilities, (4) gauge the effectiveness of our blast designs, and (5) for research purposes.

A blasting seismograph is a four-channel, self-triggering recording device. It can usually process the data and print results in the field or store events for later download to a computer, or both. It is a sophisticated instrument, but it can't differentiate between a blast and other sources of motion, such as that from nearby operating equipment, heavy feet or a car door slam, etc. Most seismographs can also be accidentally triggered by a nearby source of RF (radio) energy.

Blasting seismographs are usually programmable for:

Operating mode - single shot, continuous (several shots), manual trigger, or histogram (strip chart).

Trigger source – ground vibration or airblast, or both.

Trigger level - The intensity level that will cause the seismograph to start recording.
In order to make sure the event is recorded, use the lowest trigger level consistent with avoiding false triggers. Trigger on airblast alone only if absolutely necessary. (Bear in mind that pressure waves travel much slower in air than vibration does through the ground. Depending upon the distance from the blast and the size of the pre-blast data buffer in the instrument, the ground vibration may have already passed through the recording point before the instrument would be triggered by airblast.)

Recording duration - How long the seismograph will record after it has been triggered.
Set the recording duration sufficiently long to record the entire event, including airblast. A good rule of thumb is to use the total blast initiation system time and then add one second for every 1000 feet (or portion of 1000 ft) of distance from the blast.

Geophone location.

The geophone should be located on the ground near the base of the structure to be protected. Optionally, it can be located at an interim site closer to the blast in the case of great distance and/or small charge weights. If at all possible, record on original ground rather than fill.

Do not record blast vibration:

On structures (unless that is the only possible location or is mandated).

Over hollow spaces or areas of subsidence.

Immediately adjacent to posts, poles or any other object that could oscillate and contribute to the motion in that specific location.

On grass, leaves, mulch, planter mix, loose soil or near trees and their roots.

Be specific in your documentation as to the monitoring location. Relate it to some permanent landmark. Be accurate. Don't estimate distances, measure them.

Geophone orientation should be level and with the longitudinal sensor (usually indicated by an arrow on the geophone case) pointing toward the blast.

If for some reason you are required to record on or in a structure, align the longitudinal sensor parallel with one wall, preferably pointing closest to the direction of the blast. In these instances, it is advisable to also place a second seismograph outside the structure and align its geophone so that its sensors are parallel to the ones inside. (Bear in mind that, in this instance, you are recording the structure's response to ground motion rather than the ground motion itself.)

Geophone Anchoring.

Proper coupling to the ground surface is very important. A geophone block that slips, bounces or rocks will result in readings that contain artificially high velocities and artificially low frequencies.

Possible anchoring methods (listed from best to worst):

bolting

epoxy

burying

spiking

wax

double-sided tape (carpet tape)

holding in place (not advisable unless you are an experienced operator)

merely resting on the surface

The use of sand bags or shot bags is questionable unless protection from flyrock is required. If used, make sure that the sand bag is firmly in contact with the ground surrounding the geophone block. A sand bag may raise the center of gravity of the geophone block and will not stop rocking or sliding above approximately 1/3 of a G.

The anchoring method required is determined by the amount of acceleration that is anticipated. See the attached graph for Seismograph Geophone Anchoring Recommendations.

Accelerations do not have to be very high to cause a geophone block to slip or rock. It can be shown that a combination of 1/3 G of vertical acceleration, when combined with 1/3 G of horizontal acceleration, can cause a poorly-anchored geophone to slip.

Recording airblast.

When recording blast vibration, <u>always</u> include the recording of airblast. Structures may respond to airblast that you cannot readily hear and can result in creaking, rattling or other internal noises. Many blast vibration complaints are actually the result of airblast-induced structure motion rather than ground vibration.

Orient the microphone at least 3 feet above the ground and away from walls, internal corners or other reflective surfaces. Although most microphones are omni-directional in the frequency range of most airblast, point them toward the blast. This will avoid the problem of someone thinking you are "cheating".

Record linear, peak air overpressure levels (either in dB, psi or in Pascals). Do not use A or C weighting as is common in conventional noise recording. A or C weighting will not properly record the low frequency air overpressures that are the cause of most structure response complaints.

A graph showing the attenuation curves for various sound-weighting schemes follows. The weighting curves shown are intended to duplicate the hearing capability of the human ear at various intensities. (A is for low Sound Pressure Levels, B is for medium SPLs and C is for high SPLs.) The horizontal line at 0 dB represents the linear, un-weighted sound level. If human annoyance was the concern with airblast, these weighting curves might apply. Our main concern, however, is structural response and sound weighting is not appropriate in this instance.

Care of the seismograph.

The leading problems experienced by seismograph users are usually caused by:

1. Dirt in the printer/plotter. Don't leave the instrument (and especially the printer compartment) open in the field. When stowing the geophone, microphone and microphone stand, wipe off the dirt and mud before putting them in the accessory compartment. Vacuum out the unit occasionally.

2. Failure to keep the batteries charged. A fully-charged instrument should monitor for one or two weeks or longer before the battery becomes too low to power the instrument. Follow the manufacturer's instructions on charging the battery. The better units utilize a voltage regulator that will not allow the battery to overcharge, even if it is left on the charger for extended periods of time. If the battery will not hold an adequate charge, the unit probably needs servicing.

It is important that the time and date on the instrument's clock be reasonably accurate. This ties the record to a specific event. This is especially important if you are using the instrument in a continuous monitoring mode and are leaving it set out to record a series of events.

Seismograph Calibration.

When monitoring for legal protection purposes, have the instrument calibrated annually, but absolutely no less often than 18 months. Some agencies mandate a factory calibration within the preceding 12 months or, in some instances, more often. Between calibrations, the instrument's self-check is usually sufficient to verify that the sensors are functioning properly and that the geophone is sufficiently level to provide an accurate reading.

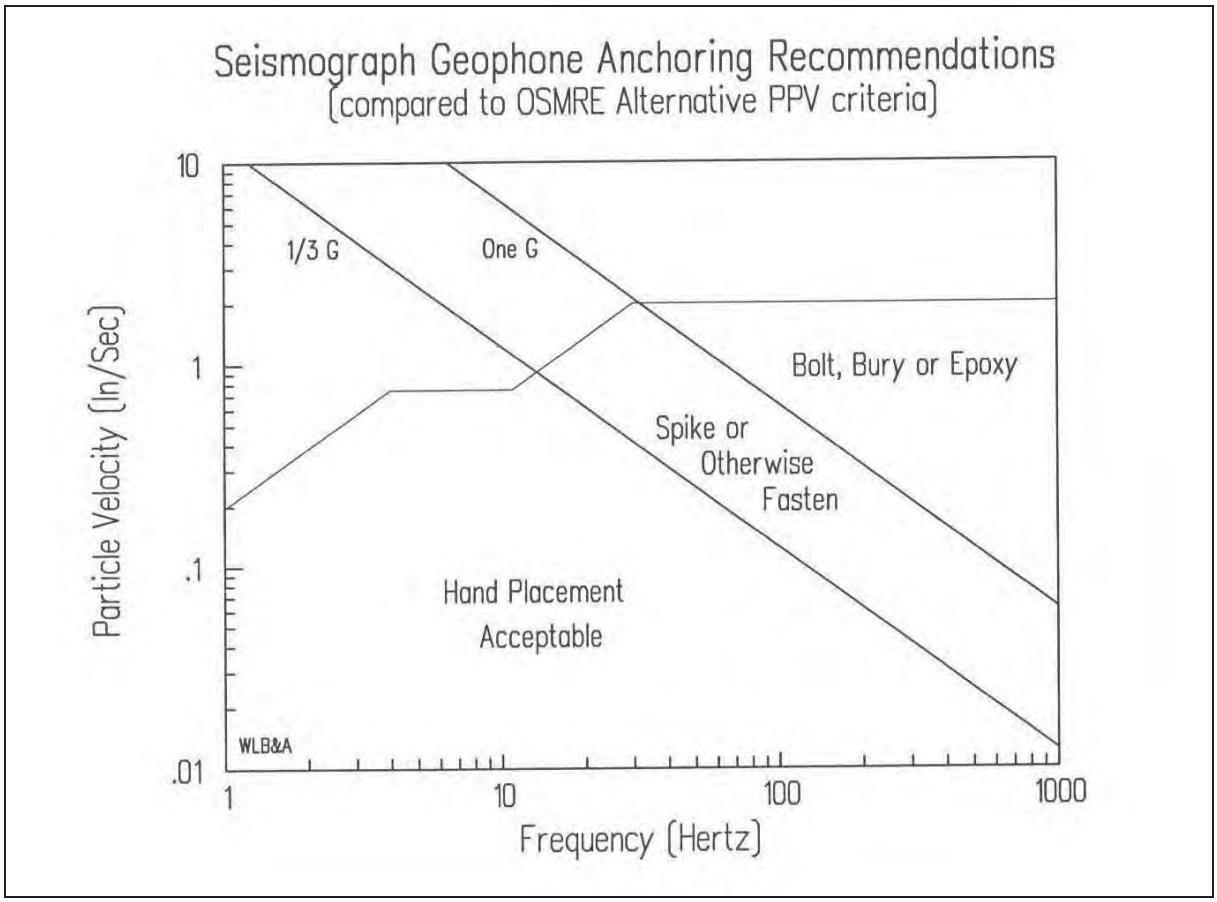
Failure to record.

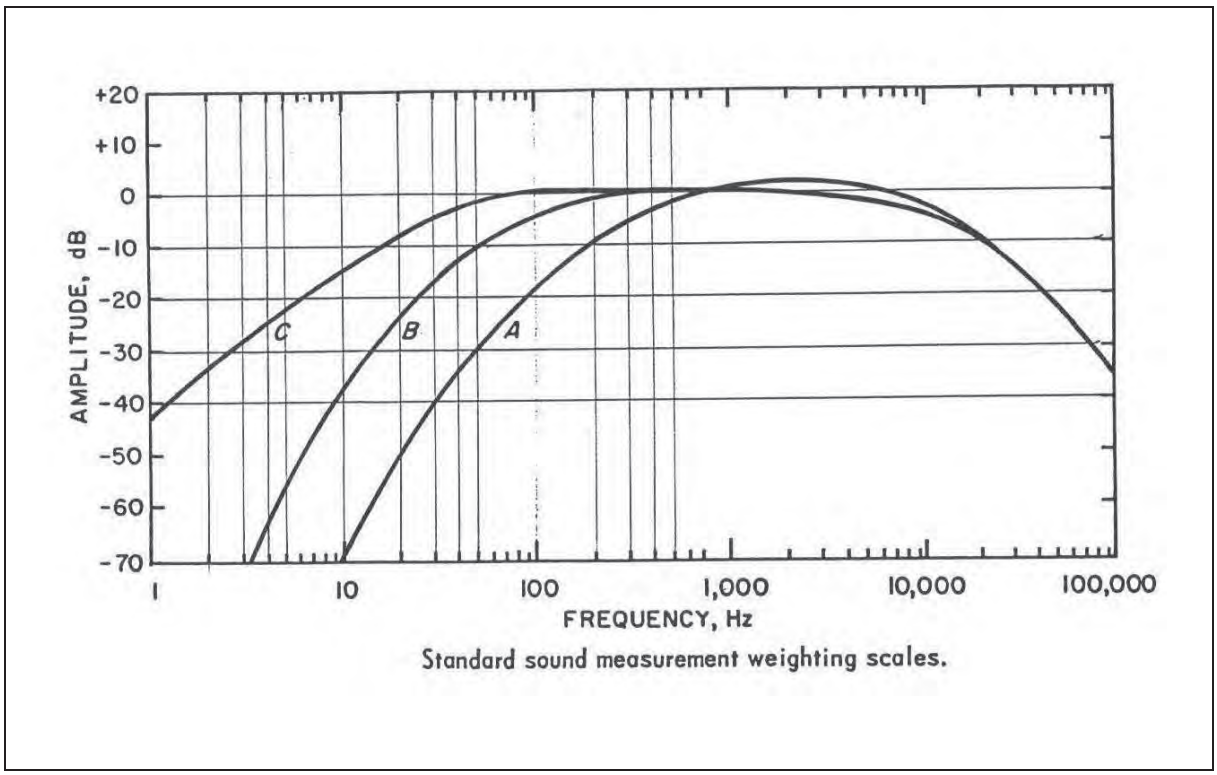
If for any reason the seismograph fails to trigger and record a blast, the seismograph operator should fill out a form (similar to the one that follows) to certify that a proper attempt was made. The document should be filed with the blast report. If at all possible, determine the reason for the failure and take corrective action. If the distance was too great and/or the vibration intensity too low to trigger the instrument, either lower the trigger level or move the instrument closer to the blast for future attempts. It is far better to extrapolate a known result than to have to estimate the blast vibration intensity.

Seismograph limitations.

Aliasing - A digital sampling phenomenon that occurs when the highest frequency of the vibration exceeds half the sampling rate of the instrument. This phenomenon will usually show up as a high frequency wave (that is usually correct) superimposed over a low frequency wave (that is incorrect). An anti-aliasing filter can prevent this from occurring in properly designed seismographs. Most modern blasting seismographs record at a minimum sampling rate of 1024 samples per second per channel. At the universally accepted four to one ratio, this provides a satisfactory frequency response for field use of up to 256 Hertz. It should be noted that, for research work, it is customary and preferable to use a ten to one (or higher) ratio.

If the instrument has an anti-aliasing filter and you are recording in very close proximity to the blast, the higher frequencies may be filtered out.





Standard sound measurement weighting scales.

SEISMOGRAPH OPERATOR'S REPORT

(To be filled out following a blast where blast vibration levels do not exceed the trigger level of the monitoring equipment)

Client _____

Project _____

Date _____ Time of Blast _____ Blast Number _____

Seismograph Make & Model _____ Serial Number _____

Trigger Source _____ Trigger Level _____

Range Selected _____ Record Duration _____

Sensor Test Results (at set-up)_____ (after blast)_____

Geophone Location _____

Witnesses (if any) _____

Additional Comments _____

_____

_____

I certify that the above listed monitoring equipment was properly set in place for the blast indicated and that the trigger level was set at the value specified above.

Signature of seismograph operator:

_____

_____
(printed name)

_____
(company)

11. Designing Blasts to Minimize Vibration

Before proceeding, it is very important to understand (and all successful blasters do) that most of the parameters involved in blast design are interrelated or interactive. By this we mean that making a change in one parameter will have an impact on the others and could necessitate additional changes.

With the understanding that efforts at correcting one problem could possibly lead to others, let's look at what we can do with blast design to reduce vibration. Blast vibration is affected by the following list of variables. These are in turn modified by blast design parameters as indicated.

Variables over which the blaster has no control -

1. Distance - The farther from the blast, the less vibration, however you have to blast the rock where you find it.

2. Site geology - As the distance between the blast and the recording point increases, geology plays a somewhat larger role in the vibration frequency and how quickly the vibration dissipates. While this variable may be technically interesting to some, its impact is minor due to the normal rapid dissipation of blast vibration with distance.

Variables over which the blaster does have control -

1. Quantity of explosive per delay - This is one of the major factors in controlling blast vibration. Blast design parameters that affect this would be hole diameter, number of decks, initiation scheme, etc. Generally, reducing the quantity of explosive per delay will reduce the vibration generated, but the powder factor must remain high enough to adequately fracture the material.
(See number 3 following.) Most blasters avoid decking if at all possible because it is labor intensive. Decking not only provides some reduction in blast vibration but, in certain instances, can yield better fragmentation.

2. Confinement of the explosive energy - Another major variable in blast vibration. Confinement is affected by burden and spacing, the quantity (and quality) of stemming, drilling accuracy, amount of sub-drilling and primer location, all as they relate to the quantity of explosive. Highly confined blasts (such as pre-splitting) generate higher vibration levels per unit weight of explosive. Mud-capping of boulders generates less vibration per unit weight of explosive (but much higher airblast). If a certain amount of throw or heave is acceptable, or if means are employed to prevent excessive throw, reducing burdens will lower vibration levels appreciably. However, one must be careful of increased airblast.

Bottom initiation will generally result in slightly more vibration than top initiation; however, the need to adequately break or pull the bottom usually outweighs any vibration benefit that might be gained from shooting from the top down.

3. Powder factor - Affected by almost all of the blast design parameters. The key here is to use as close to the optimum amount of explosive as possible and to distribute it through the material to be blasted in such a way as to adequately fracture and shift the mass. Too low a powder factor will not adequately fragment the material and a large portion of the available energy will be lost as seismic energy resulting in higher blast vibration. Too high a powder factor can result in flyrock along with higher airblast and vibration.

4. Explosive/borehole coupling - Although this has some minor effect on vibration, reducing coupling is seldom tried. Pre-splitting uses decoupled charges, but still results in high vibration levels because the increased confinement (the burden is far greater than normal) has a greater impact on vibration than the decoupling. Because of the difficulty in implementing it, reducing vibration by decoupling explosive charges is normally not utilized.

5. Spatial distribution of the energy source - This is a phenomenon that is a possible means of reducing vibration and can also increase the frequency of the vibration. Two examples of this are: (1) Two holes containing 100 lbs each and detonated simultaneously will generate less vibration than one hole containing 200 lbs. To take good advantage of this concept, the holes or decks detonating simultaneously should be separated by some reasonable distance, say half the width or half the length of the blast, whichever is greater. The more distance, the better. Adjacent, or nearly adjacent, holes or decks detonating simultaneously will benefit minimally from this effect. (2) A second example would be a long column of explosive generating less vibration than a spherical charge of the same weight because it is imparting vibration to a greater area. There have also been instances where a quarry or open pit mine might detonate two distinctly separate blasts simultaneously, with neither contributing appreciably to the vibration of the other.

6. Timing of energy release - Most regulatory agencies specify a minimum of 9 milliseconds (ms) between detonating charges, considering all explosives detonating within any given 8 ms time period to have detonated in the same instant. This is done solely for determining explosive weight for Scaled Distance calculations. In actual practice, delays of 5 ms to 9 ms can minimize vibration in very close-in blasting situations (say 10 to 25 feet). As distance increases, 9 ms will yield less vibration than shorter delay periods, but will not yield the minimum possible. The optimum time delay will depend on site-specific variables, but will tend to be in the range of 17 to 50 ms, with the higher delay being applicable only in larger blasts.

In the matter of selecting delay timing, some organizations have advocated a process that records the results from detonating a "signature" hole, and then using a computer program to superimpose identical waveforms over one another at differing time intervals in an attempt to find some optimum delay time that appears to offer the least amount of vibration. While this seems theoretically possible (and is easily accomplished mathematically), the method has met with only limited success. The biggest drawback is that it does not consider blast geometry, direction of initiation propagation and other blast parameters, factors which play an important part. It also assumes that the geology is consistent in all directions, a situation which may not exist.

There is a simpler method of the foregoing process that has met with some success where it is desirable to limit vibration in just one direction. The vibration resulting from a single signature hole (with burden, size and loading parameters being identical to a production hole) is recorded at several locations along a line in the direction of interest. A frequency spectrum analysis or Fast Fourier Transform (FFT) is then accomplished on the recorded data. A search is made to find one or more frequencies at which the ground in that direction does not readily transmit energy. This frequency is then converted to a delay time between detonating charges. If a realistic time can be found, a production blast is designed and detonated to test the timing. Basically what is done is to find a frequency that the ground doesn't readily transmit and then to try to pulse it at that frequency.

In considering either of the above two methods, it is very important to understand that: (1) The geology needs to be reasonably consistent between the blast and the structure or in the direction of interest, and (2) the method used to reduce blast-generated vibration in one direction may very well increase it in another.

7. Blast orientation. The maximum vibration will tend to be in a direction opposite to that in which the material is being heaved or thrown. By changing the direction of throw, you may also change the direction of maximum vibration, but usually only in a minor way. Again, be aware that, while you may be reducing the vibration in one direction, you may very well increase it in another. In most open pit mining operations, the geology will allow the rock to pull better in one direction than in others and the orientation of faces may have to be largely determined by geology, property boundaries and/or mining methods.

<u>For conventional blasting, remember that the most efficient blasts will also have the lowest vibration levels.</u>

12. Designing Blasts to Minimizing Airblast

From the causes of airblast listed earlier, we can readily see what steps need to be taken to reduce or prevent airblast. Exposed explosives charges and surface detonating cord trunk lines should never be used in urban situations.

We will assume here that you are using proper blast designs with normal burden, spacing and powder factors. If this isn't the case and you are experiencing excessive airblast, you may need to revisit your basic blast designs and compare them with well established standard criteria.

The main cause of high frequency airblast tends to be holes blowing out, either by ejecting the stemming or by venting through mud seams. Check your stemming quality and quantity. It's conventional to use drill cuttings for stemming holes because it is convenient. Cuttings, however, are not the most efficient stemming material. Pea gravel or any round stone is the worst. (Remember, shot in a shotgun load is round…..) Any fine material that turns into a slurry when loaded in a water-filled hole will also blow out quite readily. The best stemming material is angular crushed stone. Research has shown that the best size would be approximately $1/17^{th}$ of the borehole diameter. If you can readily obtain something close to this and use the correct quantity per hole, you should be able to confine the energy rather than letting it vent to atmosphere. It will take some experimenting, but the correct stemming height should be close to 80% to 100% of the burden dimension. You may find that this can be reduced if you are using the correct stemming material. The amount required is indirectly proportional to the quality. If the correct size of stemming is in short supply, at least pour a couple of feet of it directly on the explosive column and fill the remainder of the hole with drill cuttings.

To prevent holes from venting to the atmosphere in other ways, you should have your driller log the holes, watching for mud seams. When there is an obvious weak zone or cavity in a hole, it would be advisable to stem through it and resume loading (with another primer) once you are past the seam or weak zone.

Videotaping your blasts will greatly assist in troubleshooting sources of airblast from either of the above two causes.

Low frequency airblast can be caused when the velocity of initiation along a free face approaches or is above the speed of sound. This can also occur in a row of holes on the surface of the blast. The speed of sound in air at sea level is a little over 1100 feet per second. 1 millisecond of delay per foot of spacing results in blast progression of 1000 feet per second and 2 milliseconds per foot would be half of that, or 500 feet per second. It has been found that reducing the velocity of blast progression along the face to half the speed of sound or slower reduces this cause of airblast considerably. It is important to remember, however, that the delay timing should not be increased to the point of causing misfires through cut-offs in initiation systems or explosive columns. You must design for a buffer zone of several or more rows of holes between a hole that is detonating and detonators in holes where the initiation signal has not been received. If this is not done, misfires are often the result. Many successful blasters prefer to use delay timing between holes in a row of 2 ms to 5 ms per foot of burden. Many also prefer to use delay timing from row to row that is double, or nearly double, the delay timing in a row. Following these initiation design procedures will usually bring the blast progression below half the speed of sound and should prevent excessive low frequency airblast from this source.

Important: In your search for the reduction of airblast, do not compromise safety by causing misfires. In the above adjustments to blast progression, it may become necessary to increase your down-hole delay time so that a sufficient buffer zone exists.

If production requirements allow, it could also prove beneficial to schedule your blasts to take advantage of times when winds are blowing in a favorable direction or to take advantage of calmer wind conditions.

13. Blast documentation

It is extremely important to have adequate documentation of your blasts. This is more than just properly accounting for the explosives that you consume in your blasting operations. You must have a document that completely describes the blast. This can be in any format that you find convenient, but it must be accurate and it must be complete.

A good test to determine the adequacy of your blast documentation is to see if you (or better yet, another blaster) could reproduce the blast, in detail, solely from the data on the blast report. Any additional information that you have to provide from memory in order to reproduce the blast is information that should have been included on the original report.

Why is it critical to be able to reproduce a blast and to do so accurately? Assume for the moment that someone has filed a damage claim against you for a blast on a specific day. Most people (including judges and juries) who do not have first hand experience with blasting and blast effects, will tend to believe that blasting can cause all manner of structural damage and defects. Unless you, with or without your experts, can prepare a defense that proves that the damage could not have been caused by the blast in question, it is quite likely that you will be held responsible for the damage claimed.

To disprove a damage claim, one of the facts that must be established is the maximum amount and nature of blast-generated ground vibration that would have been experienced at the site of the damage claimed. Hopefully, you recorded the vibration with a blasting seismograph. If not, people knowledgeable in blast vibration can make acceptable estimates and testify as to the highest level of vibration experienced, but they need good blast records on which to base their calculations. They will be primarily interested in the specific location of the blast, the highest charge weight per delay and the time separation between delays. They should also have information on the orientation and geometry of the blast, the specific timing pattern utilized, type(s) of explosive used, burden, spacing, hole count, hole diameter and depth(s), stemming height, etc. These will help in estimating the amount of confinement of the blast.

If you monitored the blast for vibration and air over-pressure (airblast), all the better. Bear in mind that the specific location of the seismograph must also be noted. Try to relate the location of the seismograph to relatively permanent landmarks so that the location can be reconstructed a year or two later. Even when you monitor a blast, good blast documentation is important. The seismograph tape is only half the picture. You also need to know what caused the amount of vibration or air over-pressure that was recorded.

A couple of additional comments regarding blast documentation are in order:

(1) Blast records filled out in the field and in the blaster's own handwriting, signed by the blaster, are far better in court than a computer-generated printout (that might have been put together some time after the blast in question).

(2) Be accurate. Don't list a charge weight of 15 lbs and a distance of 500 feet if the real charge weight was 16.5 lbs and the distance was actually 475 feet. For the highest charge weight per delay, don't just divide the total explosives weight by the number of delays and then list the result. Put down the actual largest charge weight per delay that was loaded in the shot. Finding an inaccuracy on a blast report will probably lead an opposing attorney or the plaintiff's expert to argue that the rest of your records cannot be trusted.

Every blaster has his own favorite blast report format. A sample blast report form is included on the next page. Regardless of the format you use for the details, always include a diagram of the blast.

BLAST REPORT

BLAST IDENTIFICATION AND DATA:

Client _____ Project _____

Date _____ Time _____ Shot # _____ Location _____

Weather _____ Temp _____ Wind _____

Type of material blasted _____

Number of holes _____ Diameter _____ Depth _____

Burden _____ Spacing _____ Subdrilling _____ Stemming _____

EXPLOSIVES:

Type	Quantity
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
Total weight	_____
Total cubic yards	_____

INITIATION SYSTEM:

EB Caps _____

Machine _____

Circuits _____

Interval _____

Non-electric _____

Delays _____

Average weight per hole _____

Powder factor _____

Per 8ms delay: Maximum holes _____ Maximum explosives _____

(Diagram blast on reverse side)

INSTRUMENTATION:

Seismograph _____ Operator _____

Location _____

Scaled distance _____ Report number _____

Critical structure distance _____ Direction _____

CERTIFICATION:

Blaster's name _____ License _____ State _____

Blaster's signature _____

14. Exploding Myths

Through the years there have been a number of strange theories, processes and phenomena that have come to the attention of blasting consultants, forensic specialists, geophysicists and others involved in addressing blast effects. Some of these were proposed by well-intentioned, but otherwise inexperienced persons, while others appear to have been dreamed up by individuals (some of whom were highly educated) in an attempt to explain some otherwise impossible situation. It might prove enlightening to look at a few of them.

Myth 1. Concrete can be readily damaged by blast vibration.

Most concrete slabs, walks, etc. will develop cracks over time for any number of reasons, but external vibration is not one of them. Explosive charges in or under concrete may cause damage to it, but this would have been the result of rock-block movement, cratering, or by heaving the concrete upward. If it was possible to crack concrete with vibration, concrete demolition work would be much easier and far less expensive. Among the normal causes of concrete damage are inadequate soil compaction, tree roots, normal curing shrinkage, heavy traffic, etc.

Myth 2. A pre-split crack can be used to control vibration.

Blasters, and even some fairly knowledgeable consultants, have fallen into this trap. While an abrupt canyon wall may attenuate surface waves, a pre-spilt crack will not make an appreciable difference in vibration attenuation except in very close proximity to the charge. A pre-split plane has a finite length and depth and vibration will go around it. The crack is not sufficiently open, having numerous contact points that will transmit vibration. As early as 1965, the Bureau of Mines (RI 6695) investigated this as a possible means of reducing ground vibration. In 1975, the Explosive Excavation Research Lab of the U. S. Army Engineer Waterways Experiment Station in Livermore California conducted its own study (Tech Report E-75-2). Both agencies determined that a pre-split fracture plane was ineffective as a buffer for vibration. In some instances, more vibration will result from a pre-split blast than from conventional production blasts with normal burdens.

Myth 3. Damage can be expected to occur automatically if blast vibration standards are exceeded.

Blast vibration standards in current use are quite conservative. As previously mentioned, it would almost appear that some of them were formulated for human response factors rather than to prevent damage. There are numerous instances where the limits spelled out in these standards have been exceeded, sometimes by double, without causing any damage.

The blaster should be cautioned however that, in refuting a claim of damage, it is not sufficient to use as his sole defense the argument that his blast vibration and airblast were within specified limits. That may form part of his defense, but it is much more important to base it upon some other type of irrefutable evidence.

Myth 4. Blast vibration can travel underground along some geologic layer or discontinuity and then suddenly come to the surface at some distant point and damage a structure.

This theory is usually proposed when an “expert” is trying to explain why he feels a complainant’s residence was damaged while other structures much nearer the blast were not adversely affected. We can mostly thank texts that describe seismic refraction theory for handing us this problem. Even though there are an infinite number of rays in waves that emanate from a detonating charge, to simplify refraction theory, the diagrams normally only show a single ray traveling from the charge down to a layer, thence along the layer, and finally coming back up to the recording device on the surface. This ray represents the ray with the earliest arrival, not the largest motion. Depending upon the distance from the blast, the largest motion would probably have been a surface wave.
No structure or portion of the ground between the detonation and the complainant’s residence escaped also being affected by passing seismic waves. If damage did indeed occur to the subject residence, there should also be evidence of damage at others closer to the blast.

Myth 5. Airblast was reflected off of a cloud layer / inversion layer (pick one) and focused on the complainant's residence causing damage.

As previously mentioned in the discussion of temperature inversions, the effect only occurs at an extended distance from the blast. The airblast from normal blasts at that distance has diminished to a point well below that capable of causing damage. If windows weren't also broken between the complainant's home and the blast, this damage from reflection theory falls short.

Myth 6. Vibration energy was trapped in a waveguide, causing it to travel much farther from the blast, eventually causing damage when it surfaced.

While one may occasionally find conditions in nature similar to a waveguide, they are fairly rare. The most common of these might occur when a layer of alluvium overlays solid rock. In this situation, vibration waves in or on the alluvium might not diminish as rapidly as they might have if the condition did not exist, but they will still be diminishing rapidly with distance. The vibration closer to the blast would have been of a higher intensity and if there was damage at the distant location, it would have also been accompanied by damage closer to the blast.

In addressing and refuting some of the foregoing myths, a useful tool as suggested by Oriard (1999 and 2002) is called the **Scale of Effects**. Scale of Effects comes out of earthquake technology where it has been used for years to identify zones of similar damage around the epicenter of an earthquake. Within a given zone, damage levels will be relatively similar and can be assigned to a specific intensity level on the Modified Mercalli scale. Higher numbers, closer to the epicenter, indicate the higher levels of damage. As the distance from the epicenter becomes greater, the decreasing levels of damage result in zones that are assigned lower numbers. In all cases, the numbers are assigned based upon ranges of actual documented damage or effects. For a further discussion of the Modified Mercalli scale or earthquakes in general, the reader is referred to a good earthquake text, to Richter's book or to one of Oriard's books listed in Appendix D.

To use the Scale of Effects for evaluating blast vibration damage, one must consider the following question: "*If the damage claimed was indeed caused by the blast, what other effects would have had to have occurred at the same time?*" Often the damage claimed would have required extremely high levels of vibration, yet other far more sensitive objects nearby were not harmed.

A classic example of this occurred in Southern California some years ago. The owner of a $7 million home claimed damage from blasting that took place approximately a half mile away. The damage claimed included cracks in the concrete garage floor, swimming pool, pool deck, chimney and plaster, a broken PVC water line, cracks in a paved tennis court, and displacement of opposing bathroom walls that showed separation of almost a half inch near the ceiling. In the owner's words (who happened to be an attorney), this was a "classic example of blast vibration damage". Where the Scale of Effects came into play was the fact that there were several statues delicately balanced on pedestals in the main hall of the residence. These statues would have surely been toppled and broken had the damage claimed been from blast vibration, but they were not. A second application of Scale of Effects was in the bathroom. If vibration from blasting had caused the walls to be permanently displaced outward at the top, why did it not also crack the mortar in the joints in the flagstone shower at one end of the bathroom?

It was fairly obvious that there had been some major shrinkage issues in the bathroom materials and the area in the garage that was cracked was located on poorly compacted fill. Although some of the damage claimed bordered on the ridiculous and was easily refuted, the Scale of Effects helped immensely in defending the contractor in this case.

Myth 7. Vibration from a blast acted as a triggering force when it was added to existing strain in a structure (i.e. the straw that broke the camel's back).

Strains that occur in structures start as soon as the structure is under construction and continue throughout its life. These are caused by many sources, among which are the shrinkage of building materials as they cure, expansive soils, changes in weather, temperature variations between day and night or different seasons, etc. Most of these far exceed the strain from blast vibration. The slight elevation of strain level during a blast would still fall well short of peak strains that the structure has experienced numerous times prior and would thus not be capable of being a trigger source.

If one were to monitor and document the various cracks in structures over an extended period, one would find that they would open and close on a continuing basis, depending upon the strain being generated by normal environmental sources. If you were to detonate a blast nearby during one of the phases when the cracks were relatively closed, the argument could be made that the blast vibration assisted in the healing of the cracks. Of course, this would be ludicrous, but that is exactly the same logic being used by persons who claim that blast vibration acted as a trigger source and caused the crack in the first place.

Lew Oriard (1999) also refutes this theory quite effectively. He states that, "*Because of the action of powerful environmental forces, all houses undergo large cyclic strains on a continuing basis. That simple fact alone dictates that a triggering force would have to be quite large. Otherwise the crack would already exist.*"

Myth 8. Damage from structural fatigue will result from repeated exposure to vibration from blasts.

The consensus of various segments of the engineering community holds that, for permanent deformation to occur from fatigue, strain must regularly exceed at least half of the yield strength of the structure or material. While strains generated from blasts could possibly exceed half the yield strength of a material or structure, it would take very large charges detonated in extremely close proximity to do so. Damage would far more likely be caused by block movement rather than vibration. Other types of damage would become apparent before fatigue could occur.

The Bureau of Mines in RI 8896 (1984) also addressed this issue. They constructed a house in the path of an advancing large open pit coal mine. Due to mine operational constraints, the blasting tests were discontinued when the high wall reached a distance of 300 feet from the house. At that point, because they had not been able to obtain structural damage from the blast vibration, they resorted to the installation of mechanical shakers in the structure in an attempt to cause cosmetic damage through accelerated fatigue tests. The shakers were set up to put vibration through the structure equivalent to approximately 0.5 inches per second of PPV. The frequency was set to fall within the resonant range of portions of the structure (5.90 to 9.35 Hertz).

The shaking of the structure finally managed to generate a tape joint crack and a crack in joint compound over a nailhead (basically cosmetic damage) after 56,000 cycles. This would have been the equivalent of 28 years of shaking, twice a day, from blast-induced vibration at a PPV ranging from 0.3 to 0.5 inches/second.

Appendix A - Blasting Complaint Report

Complaint received: Date: _____ Time: _____

Complainant's name: _____

Address: _____ Phone: _____

Specific complaint: _____

_____

_____

_____

Date and specific time of occurrence (as reported by Complainant):

Date: _____ Time: _____

Complaint received by: _____

Results of Investigation: _____

_____

_____

_____

_____

_____

Investigated by: _____

Disposition of Complaint: _____

_____

_____

_____

(use additional pages as necessary)

Appendix B - Metric Conversions

The following information is provided to facilitate the conversion of blast calculations between imperial (US) and SI (metric) units -

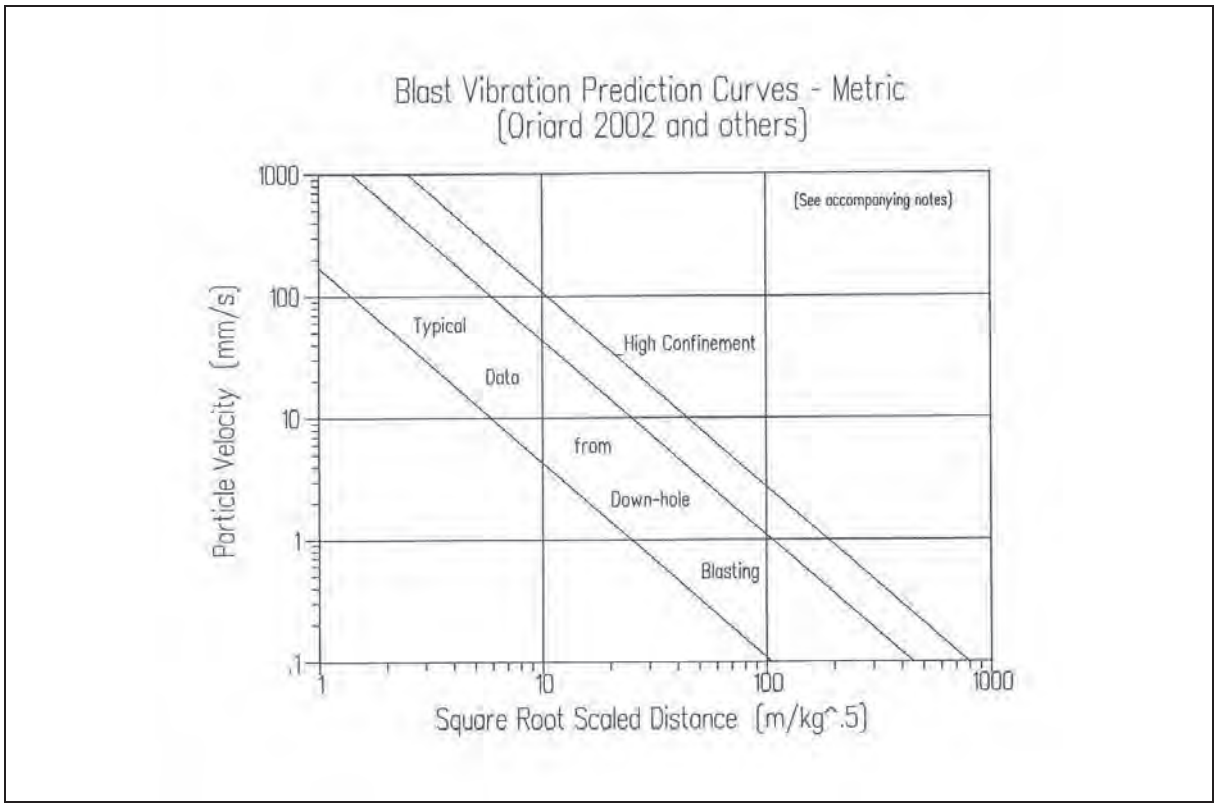
Official Definitions (according to U.S. and Canadian law):

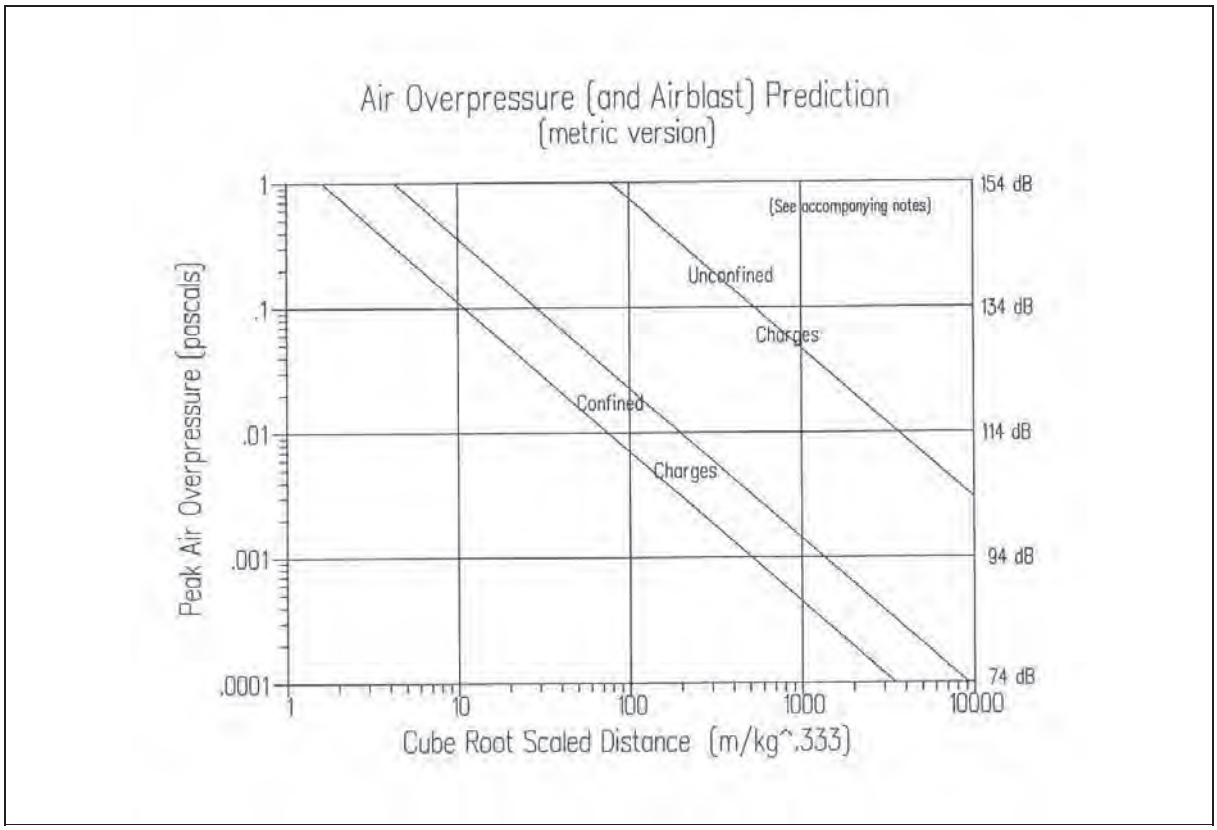
1 inch (in.) = 25.4 millimeters (mm)

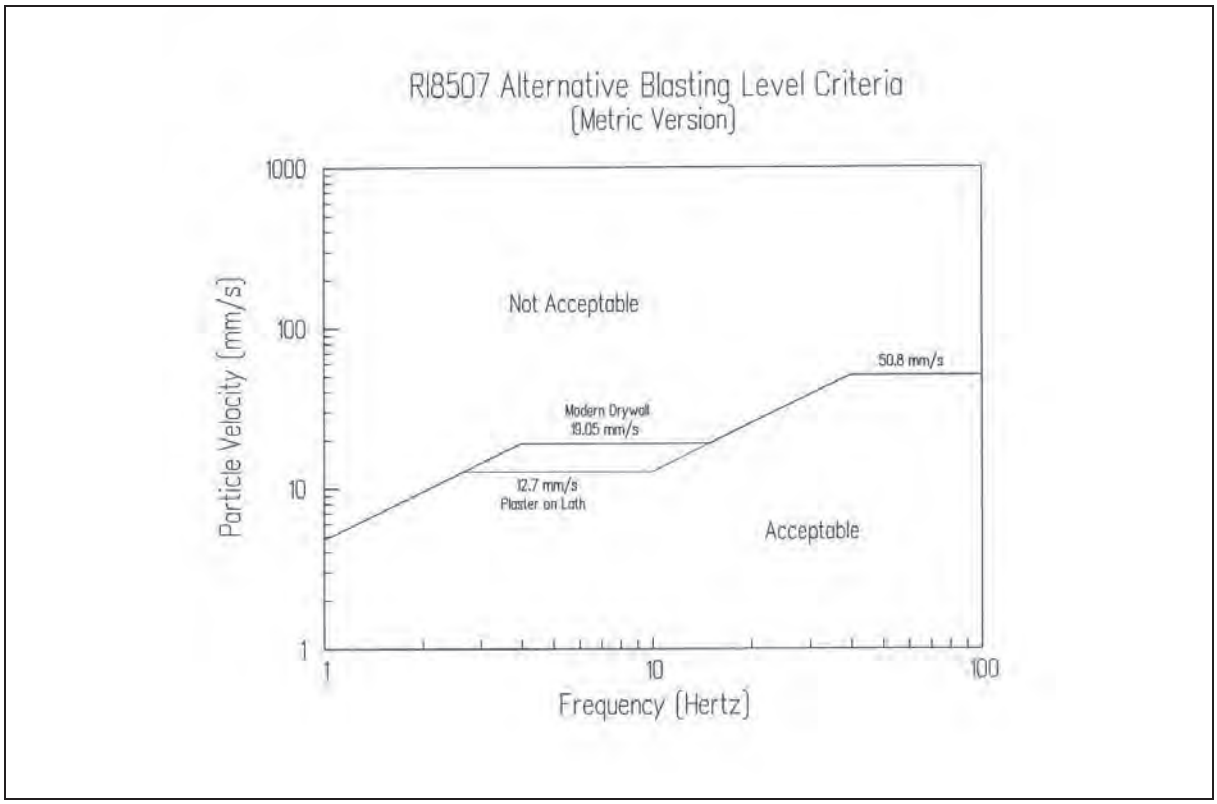
1 pound (lb.) = 453.59237 grams (g)

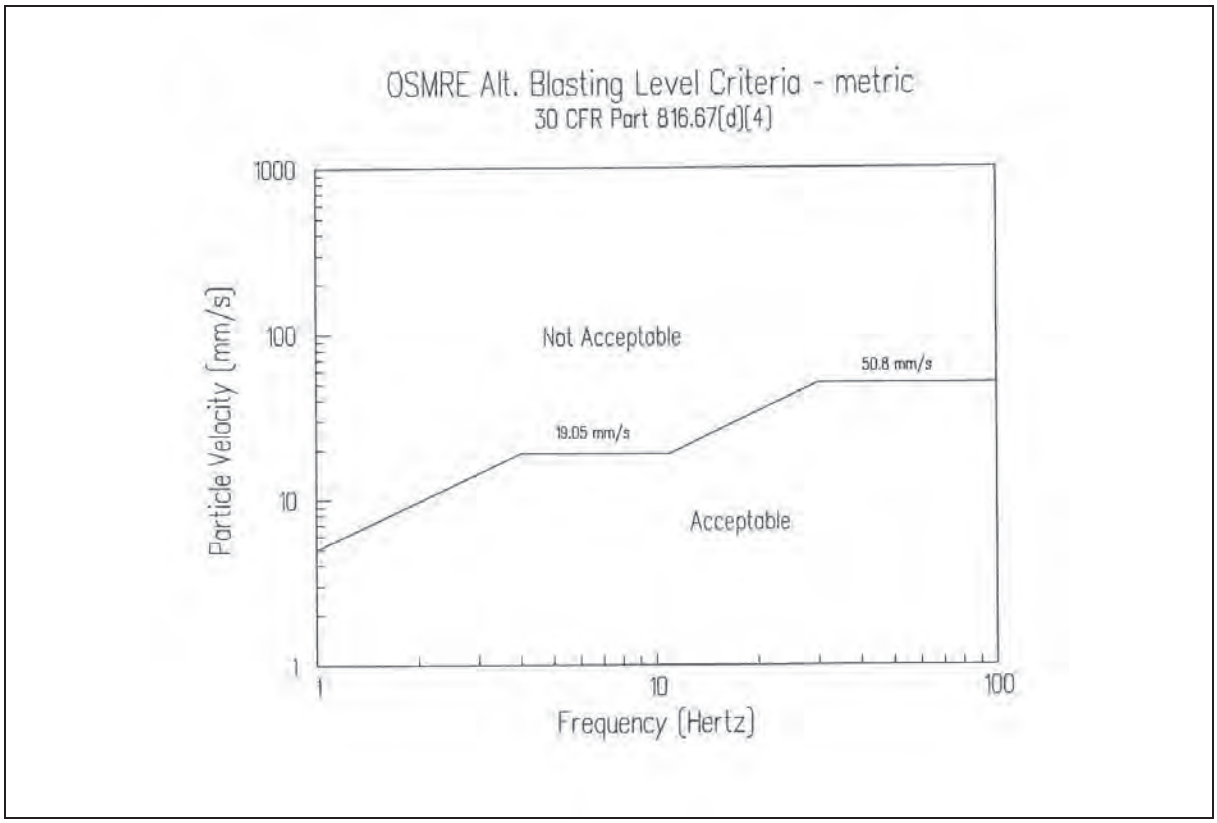
Useful Conversion Factors:

Distance:	feet (ft)	x	.3048	=	meters (m)
	meters	x	3.2808	=	feet
Weight:	pounds (lbs)	x	.454	=	kilograms (kg)
	kilograms	x	2.2026	=	pounds
Peak Particle Velocity:	in/sec	x	25.4	=	mm/sec
	mm/sec	x	.3937	=	in/sec
Volume:	cu. yards (yd^3)	x	1.308	=	cu. meters (m^3)
	cu. meters	x	.7645	=	cu. yards
Powder Factor:	lbs/yd^3	x	.93	=	kg/m^3
	kg/m^3	x	1.6863	=	lbs/yd^3
Square Root Scaled Distance:	$ft/lbs^{1/2}$	x	.45236	=	$m/kg^{1/2}$
	$m/kg^{1/2}$	x	2.2106	=	$ft/lbs^{1/2}$
Cube Root Scaled Distance:	$ft/lbs^{1/3}$	x	.3965	=	$m/kg^{1/3}$
	$m/kg^{1/3}$	x	2.5221	=	$ft/lbs^{1/3}$
Pressure:	psi	x	.145	=	Pascals
	Pascals	x	6.895	=	psi


Blast Vibration Prediction Curves - Metric
(Oriard 2002 and others)
Particle Velocity (mm/s)
1000
100
10
1
.1
(See accompanying notes)
Typical
Data
from
Down-hole
Blasting
High Confinement
1
10
100
1000
Square Root Scaled Distance (m/kg^.5)


Air Overpressure (and Airblast) Prediction
(metric version)
Peak Air Overpressure (pascals)
1
.1
.01
.001
.0001
154 dB
134 dB
114 dB
94 dB
74 dB
(See accompanying notes)
Unconfined
Charges
Confined
Charges
1
10
100
1000
10000
Cube Root Scaled Distance (m/kg^.333)


RI8507 Alternative Blasting Level Criteria
(Metric Version)
Particle Velocity (mm/s)
1000
100
10
1
Not Acceptable
50.8 mm/s
Modern Drywall
19.05 mm/s
12.7 mm/s
Plaster on Lath
Acceptable
1
10
100
Frequency (Hertz)


OSMRE Alt. Blasting Level Criteria - metric
30 CFR Part 816.67(d)(4)
Particle Velocity (mm/s)
1000
100
10
1
Not Acceptable
50.8 mm/s
19.05 mm/s
Acceptable
1
10
100
Frequency (Hertz)

Appendix C - Calculations for Sinusoidal Waveforms

The following equations express the relationships between Velocity, Displacement, Frequency and Acceleration for sinusoidal waveforms.

$$V = 2\pi f D \quad \text{or} \quad V = 386.1\ Gs / (2\pi f)$$

$$D = V / (2\pi f)$$

$$A = 2\pi f V$$

or

$$A_g = (2\pi f V) / 386.1$$

$$f = V / (2\pi D) \quad \text{or} \quad f = A / (2\pi V)$$

Where:

V is velocity in inches/second

D is peak displacement in inches

A is acceleration in inches/second^2

A_g is acceleration in Gs

f is frequency in Hertz (cycles per second)

π is 3.14159….

Appendix D - References and Additional Reading

Blasters' Handbook (1998), International Society of Explosives Engineers, Cleveland, OH.

Dowding, Charles H. (1985), "Blast Vibration Monitoring and Control," published by Prentice- Hall. ISBN 0-13-078197-5. (See Note A following)

Dowding, Charles H. (1996), "Construction Vibrations," published by Prentice Hall. ISBN 0-13-299108-X. (See Note A following)

Edwards, A.T., and Northwood, T.D., (1960), Experimental Studies of the Effects of Blasting on Structures. The Engineer, September 1960.

Medearis, K. (1976), "The Development of Rational Damage Criteria for Low-rise Structures Subjected to Blasting Vibrations," Report to the National Crushed Stone Association, Washington, D.C.

Nicholls, H. R., Johnson, C. F., and Duvall, W. I. (1971), "Blasting vibrations and Their Effects on Structures," Bureau of Mines Bulletin 656.

Oriard, L. L. (2002), "Explosives Engineering, Construction Vibrations and Geotechnology," published by the International Society of Explosives Engineers. ISBN 1-892396-13-0. (See note A following)

Oriard, L. L. (1999), "The Effects of Vibrations and Environmental Forces," published by the International Society of Explosives Engineers. ISBN 1-892396-10-6. (See note B following)

Oriard, L.L., (1994), Vibration and Ground Rupture Criteria for Buried Pipelines. Proceedings of the Twentieth Annual Conference on Explosives and Blasting Technique. International Society of Explosives Engineers.

Richter, Charles F., (1958), Elementary Seismology. W. H. Freeman and Company.

Robertson, D.A., Gould, J.A., Straw, J.A., and Dayton, M.A., (1980), Survey of Blasting Effects on Ground Water Supplies in Appalachia: Volumes I and II. Bureau of Mines open field report 8(1)-82.

Rose, R., Bowles, B. and Bender, W., (1991), Results of Blasting in Close Proximity to Water Wells at the Sleeper Mine. Proceedings of the Seventeenth Conference on Explosives and Blasting Technique. International Society of Explosives Engineers.

Siskind, D.E. and Stagg, M.S., (1993), Response of Pressurized Pipelines to Production-Size Mine Blasting. Proceedings of the Ninth Annual Symposium on Explosives and Blasting Research. International Society of Explosives Engineers.

Siskind, D. E., Stagg, M. S., Kopp, J. W., and Dowding, C. H. (1980), “Structure Response and Damage Produced by Ground Vibration from Surface Mine Blasting,” Bureau of Mines Report of Investigations, RI 8507.

Siskind, D. E., Stachura, V. J., Stagg, M. S., and Kopp, J. W. (1980), “Structure Response and Damage Produced by Airblast from Surface Mining,” Bureau of Mines Report of Investigations, RI 8485.

Stagg, M. S., Siskind, D. E., Stevens, M. G., and Dowding, C. H. (1984), “Effects of Repeated Blasting on a Wood-Frame House,” Bureau of Mines Report of Investigations, RI 8896.

Stagg, M. S., and Engler, A. J. (1980), “Measurement of Blast-Induced Ground Vibrations and Seismograph Calibration,” Bureau of Mines Report of Investigations, RI 8506.

Tart, R.G., Oriard, L.L., and Plump, J.H., (1980), Blast Damage Criteria for Massive Concrete Structure. ASCE National Meeting, Specialty Session on Minimizing Detrimental Construction Vibrations, Portland, OR, ASCE Preprint 80-175 April 1980.

Wiss, J. F. and Linehan, P. W., (1978), Control of Vibration and Blast Noise from Surface Coal Mining. Bureau of Mines Open File Report 103-79. National Technical Information Service.

Note A - These publications are exceptionally good in their treatment of the subject matter.

Note B - This publication will prove to be of great value to those persons or organizations who investigate claims of blast vibration or airblast damage.

EXHIBIT I

Lost Lake Recreation Area

County of Fresno wishes to remind residents and park patrons that swimming in the river is not recommended while water releases are occurring. The water flows are much higher and result in faster currents. Turn Around, Don't Drown!

Lost Lake Recreation Area is available for day use and camping.

On the San Joaquin River, two miles below Friant Dam and the town of Friant, Lost Lake Recreation Area is 19 miles northeast of Fresno. The primitive nature study area and 38 acre lake make Lost Lake one of the most popular County parks.

Lost Lake Recreation are provides individuals, groups, students, scouts, and families with multiple features and activities. These include reserved group picnic areas, softball field, volleyball courts, hiking trails, nature study area and trail, bird watching, hiking, kayaking, canoeing, fishing, and playgrounds. Restrooms and picnic shelters are provided in the day use area for the public.

The Campground at Lost Lake Recreation Area provides for tent, auto, and motorhome camping. Each of the 37 campsites have picnic tables and campfire rings. Water and Restrooms are provided adjacent to the campsites. Each campsite is accessible for vehicles up to 34' long. We feature two ADA compliant campsites that are reserved for people with disabilities.

If you would like to review, here is the Lost Lake Master Plan (PDF, 49MB) (/files/sharedassets/county/v/1/vision-files/files/14421-lost-lake-master-plan.pdf).

If you would like to volunteer at Lost Lake Park you can contact the Friends of Lost Lake Park (https://www.facebook.com/people/Friends-of-Lost-Lake-Park/100064267496871/).

Park Hours

Winter Hours: October 1 - March 31 from 7 AM to 7 PM
Summer Hours: April 1 - September 30 from 7 AM to 10 PM
(Note: When Campground is open, All campers must check-in prior to close of park)

Vehicle Entrance Fees

All vehicles must pay an entrance fee, even if the party has a camping reservation: Entrance fees at all developed Parks is $5 per vehicle.

Annual passes are available for $40 per year and can be purchased at Fresno County Resources Division: 2220 Tulare Street, 6th Floor, Fresno, CA 93721. Telephone (559) 600-3004

Camping Reservations and Rates

Please call Parks at (559) 600-3004 to make group campsite reservation or for more information. No reservations for single campsites. All single campsites are first come, first serve:

Rates (Effective 5/18/2015)

- $25 per night per single campsite (price includes 1st vehicle entry fee)
- $9 per night for seniors (age 62 and over, ID required, price includes 1st vehicle entry fee)
- $11 per night for Disabled Veterans (valid ID, adjudication letter, Dept. of Defense Form 214 required, price includes 1st vehicle entry fee)
- $200 per night for group campsite with a 10 vehicle minimum **(Plus $100 refundable cleaning deposit)**

(Note: All campers must check-in prior to close of park)

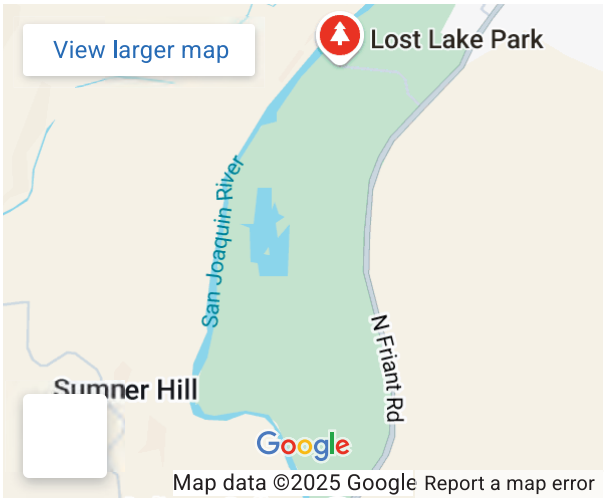
Rules, Regulations and Permits

Information on bounce houses and pets.

More information... (/departments/public-works-and-planning/divisions-of-public-works-and-planning/resources-and-parks-division/parks/county-parks-rules-and-regulations)

Campfire Permits Required (/?splash=https%3a%2f%2fwww.readyforwildfire.org%2fpermits%2fcampfire-permit%2f&____isexternal=true)

Location



Directions

Located 19 miles north of Fresno below Friant Dam. North on Highway 41 to the Friant Road exit. Proceed east on Friant Road past Woodward Park, for approximately 12 miles to Lost Lake. The entrance to the Park is on the left before the town of Friant. Once inside the Park, picnic areas are to the left and the campground is to the right.

Address

16385 N. Friant Road.
Friant, CA 93626

History

The land that today makes up the Lost Lake Recreation Area was once the ancestral home of the Wakichi Band of Yokuts. Over 300 documented grinding holes have been found throughout Lost Lake Recreation Area. Numerous Native American ceremonies are held throughout the year at Lost Lake to respect and honor local tribes.

In 1852, Charles Converse established the Converse Ferry near the north end of the present campground. Converse would go on to design and construct the first Fresno County Courthouse that is located at Millerton Lake. Converse Ferry would change names several times before being named the community of Friant.
The term "Lost Lake" is due to the creation of a gravel pit in the late 1930s as a result of quarrying materials for the construction of Friant Dam. While quarrying rock and cement for Friant Dam, about

357 pounds of gold was found in Lost Lake valued at $200,000. Today the same amount of gold would value at $7.36 million.
In 1956, the County of Fresno purchased 248 acres from the Bureau of Land Management to create Lost Lake Recreation Area. In 1959, the County of Fresno leased an additional 78 acres from the State of California State Wildlife Conservation Board (https://wcb.ca.gov/) to expand the fishing and day use area and bring the total acreage to 326 acres. On March 26,1961, Lost Lake Recreation Area was dedicated and formally open to the public. Originally a fishing and day use area, the campground planning began in 1974 however construction did not begin until 1980. In 1981, at a cost of $462,000, The Campground at Lost Lake Recreation Area opened to the public.
The Campground at Lost Lake Recreation Area was closed in September 2014 for improvements and upgrades. A $1.4 million grant was provided by the Wildlife Conservation Board utilizing Prop 40 funds via recommendations from the San Joaquin River Conservancy. The project came in under budget by approximately $150,000 and the County of Fresno contributed over $100,000 of in-kind labor and materials.

Mailing Address:

County of Fresno Resources Division
2220 Tulare Street, 6th Floor, Fresno, CA 93721
Tel: (559) 600-3004
FAX: (559) 600-4552
parks@fresnocountyca.gov (mailto:parks@fresnocountyca.gov)

Free viewers are required for some of the attached documents.
They can be downloaded by clicking on the icons below.

(https://get.adobe.com/reader/) (https://support.microsoft.com/en-us/windows/windows-media-player-d10303a5-896c-2ce2-53d4-5bd5b9fd888b) (https://www.microsoft.com/en-US/microsoft-365/free-office-online-for-the-web) (https://www.microsoft.com/en-US/microsoft-365/free-office-online-for-the-web) (https://www.microsoft.com/en-US/microsoft-365/free-office-online-for-the-web)

From:	Cala Carter
To:	Randall , David A.
Cc:	Mark Rivard
Subject:	CEMEX Proposed 100 year Extension of Gravel Quarry permit & conversion to blasting hard rock & crushing it into gravel -Letter response
Date:	Monday, March 10, 2025 6:23:15 PM
Attachments:	CEMEX-Comment-Letter response .docx

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

To: David Randall, Senior Planner, Fresno Co Public Works & Planning Dept

Dear Mr. Randall,

Myself and my husband strongly oppose the CEMEX proposed plan for changing the Quarry site from a mechanical (digging) of sand and gravel, to (blasting & manufacturing) blasting hard rock and crushing it into gravel.

Comment 59-1

The idea of blasting explosions going off so close to residential areas & public roadways is a safety hazard, not to mention creating a 600 ft below ground surface right next to the San Joaquin River, and not far from our River Parkway conservation area which is a museum devoted to teaching future generations the history of the San Joaquin River, and how our generation is protecting and preserving these wetlands for the future of our land's natural resources, is unacceptable!

CEMEX needs to find a different area to propose such a project. Attached is our response letter to the CMEX proposal.

Thanks,

Cala Carter

Cala Carter, CPIW, AIS, President Lic# 0737397

CCIS BONDING & INSURANCE SERVICES / CCIS Insurance Grp Inc

O: 559-320-2247 F: 559-320-0299 C: 559-289-5183

2520 W Shaw Ln, Ste 104, Fresno, CA 93711

ccarter@ccisinsurance.com

Cala Carter, Small Group Benefit Plan agent

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Cala Carter & Mark Rivard

3225 W Minarets Avenue, Fresno, CA 93711

03-10-2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 59-2

Impacts on Water Quality & the San Joaquin River

Comment 59-3

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

Comment 59-4

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 59-5

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow

rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 59-5 Cont.

Impacts on the San Joaquin River Parkway & Recreation

Comment 59-6

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 59-7

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 59-8

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 59-9

Comment 59-10

Comment(s) 59-11 / 5-12

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 59-13

Threats to Wildlife

Comment 59-14

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

Comment 59-15

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Comment 59-16

Conclusion

Comment 59-17

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,

Cala Carter

3225 W Minarets Ave

Fresno, CA 93711

559-289-5183

Hello,

On behalf of the listed organizations, I am writing to provide our comments and feedback on the CEMEX Rockfield Modification Project. We appreciate the Board for releasing a Draft Environmental Impact Report for public views and the opportunity to comment on the CEMEX Rockfield Modification Project to ensure transparency, public participation, and compliance with existing policies such as the California Environmental Quality Act (CEQA).

We acknowledge the County's dedication to a comprehensive review process. The undersigned organizations respectfully submit this letter to enhance our community's well-being and ensure that critical environmental and public health standards are upheld. For your consideration, please find our comments letter attached.

Thank you,

Andrew Escamilla (He/Him/His)
Campaigns and Organizing Manager
California Environmental Voters &
California Environmental Voters Education Fund

E andrew@envirovoters.org | **W** www.envirovoters.org
O 559.475.6058 ext 135 | **M** 805.616.0957
We are piloting a 4-day work week (M-Th).

March 10, 2025
Fresno County Board of Supervisors

Re: CEMEX Rockfield Quarry Modification Project EIR

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Divisions of Public Works and Planning
2220 Tulare St., 6th Floor
Fresno, CA 93721

Greetings,

On behalf of the listed organizations, I am writing to provide our comments and feedback on the CEMEX Rockfield Modification Project. We appreciate the Board for releasing a Draft Environmental Impact Report for public views and the opportunity to comment on the CEMEX Rockfield Modification Project to ensure transparency, public participation, and compliance with existing policies such as the California Environmental Quality Act (CEQA). Comment 60-1

We acknowledge the County's dedication to a comprehensive review process. The undersigned organizations respectfully submit this letter to enhance our community's well-being and ensure that critical environmental and public health standards are upheld. For your consideration, please find our comments below.

Section 4.1 Aesthetics and Visual Resources

The DEIR acknowledges that the CEMEX Rockfield Modification Project will have significant and unavoidable visual impact even with mitigation measures. This draft EIR fails to analyze the equity implications of these impacts. Communities that already experience poor air quality, excessive heat, and lack of green space should not have to further endure the degradation of their visual and environmental surroundings. The San Joaquin River is a vital environmental and cultural asset that will face significant degradation if this project moves forward. This river serves as one of the few remaining natural refuges in the region, providing recreational, mental, and physical health benefits to local residents. Under Table ES-1 Mitigation Measure 4.1-1, the proposed mitigation measures, such as rock staining to reduce visual contrast, are insufficient and temporary solutions that fail to restore the ecological integrity of the affected land. Rock stain is a short-term aesthetic fix, it does not provide a real solution and does not address the

Comment 60-2

Comment 60-3

lasting environmental impact caused by this project. Over time, weather conditions will diminish any aesthetic improvements, making this measure ineffective. The stain is not guaranteed to restore the ecological integrity of the land, and over a period of time, weather conditions may impact in making disturbed areas visible again. In the long term, this is a “green washing” mitigation measure that does not address the land degradation and fails to reduce environmental impacts.

Comment 60-3 Cont.

To effectively mitigate the impact of the area's aesthetics and visual resources, Fresno County must conduct a more comprehensive environmental review that thoroughly examines the project’s disproportionate effects on impacted communities. The county should require that CEMEX engage in mandatory and enforceable land restoration efforts, that includes large scale tree planting, native vegetation restoration, and long-term air quality monitoring. Impacted residents must be engaged and considered a part of the direct decision making in the project proposal to ensure that our community needs and concerns align with restoration efforts. Furthermore, the county must impose a legal binding requirement on CEMEX to fund sustainable improvements to public parks, trails and tree cover in impacted areas, ensuring that communities' access to natural spaces is not just another place for corporate gains.

Comment 60-4

Section 4.3 Air Quality

Comment 60-5

Fresno County is already suffering from some of the worst air pollution in the nation, disproportionately harming low-income, immigrant, and BIPOC communities. The San Joaquin Valley consistently exceeds the state and federal air quality standards for PM2.5 (9.0 µg/m^3 annually, or 35 µg/m^3[1]) and ozone (8 hour standard of 0.070 ppm). CARB’s recent workshop proposing updates to the PM 2.5 standard identified the San Joaquin Valley as the state’s worst region in exceeding the 9.0 µg/m^3 annual standard, at 16.2 µg/m^3 according to recent data[2]. Additionally, the San Joaquin Valley Air Pollution Control District recognizes the air basin as being in non attainment with both of these pollutants[3]. As such, the proposed CEMEX expansion will further deteriorate the already overburdened air quality, compounding existing environmental injustices. The threshold values in the DEIR fail to account for cumulative pollution exposure, which is a critical oversight. This is a major problem because communities, especially those already burdened by pollution, do not just experience from a single pollutant but from the accumulation of pollution from various types of pollutants. Nearby communities from

Comment 60-6

[1] https://ww2.arb.ca.gov/our-work/programs/state-and-federal-area-designations/federal-area-designations/pm2-5

[2] https://ww2.arb.ca.gov/sites/default/files/2024-12/9ugm3_Annual_PM2.5_Workshop_Recommendations_and_Inventory_Updates_ADA.pdf

[3] https://ww2.valleyair.org/air-quality-information/ambient-air-quality-standards-valley-attainmnet-status/

this project site are already enduring severe health crises, including high rates of asthma, respiratory diseases, and other pollution-related illnesses. While the DEIR acknowledges potential health risks, it underestimates the severity of these health risks and fails to propose meaningful or enforceable mitigation measures. There is no clear outline strategy of how pollutants will be monitored or transparency for impacted residents.

Comment 60-6 Cont.

Comment 60-7

To ensure our communities health as a priority, we demand that Fresno County take immediate and binding actions to safeguard our communities that are directly impacted by environmental harm such as air pollution. We suggest that the county enforce a comprehensive, real-time community air monitoring program with public access to ensure health protection and also hold CEMEX accountable if their pollution level exceeds safe limits. In addition, we suggest the county require CEMEX to transition to zero emission emissions equipment to reduce and eliminate particulate pollution.

Comment 60-8

Section 4.11 Land Use and Planning

Upon review under Section 4.11 Land Use and Planning of the DEIR, we've identified several concerns regarding the project's consistency with Fresno County's General Plan goals and policies. As labeled in Goal LU-A**,** which aims to promote long-term conservation, potentially productive agricultural lands, and accommodate agricultural-support services and related activities that support the sustainable agriculture to further the County's economic development goals, the DEIR provides no specific plan to stay consistent. In addition, the DEIR stated that the proposed project provides a needed service to the surrounding area by producing cement products for construction projects. As stated by Marek Warszawski, in CEMEX's own document, Fresno County utilizes only 28% of their production. There are multiple sites where the county uses such as Vulcan Sanger Site, Academy Quarry, Fresno River Rock, AI's Concrete, Bass Avenue Materials, Carmelita Mine, Coalinga Pit #1, Coalinga Pit #2, Gale Sands, Kings River Sand and Gravel, River Rock Site, Riverbend Sand and Gravel, Sante Fe Aggregate, Sierra Pacific Materials, and Tivy Valley Granite. Following Goal LU-C, focusing on ensuring long term preservation of productive agricultural land, conserving natural wildlife habitats, and maintaining flood-carrying capacities, the project was identified as consistent. However, there was no further explanation regarding CEMEX's effort to measure how the project will be implemented to achieve this goal. The DEIR asserts that the proposed project is consistent with applicable Fresno County General Plan goals and policies, as demonstrated in Table 4.11-1. Nevertheless, the DEIR does not provide sufficient evidence or detailed analysis to support this assertion.

Comment 60-9

Comment 60-10

Comment 60-11

The DEIR lacks detailed plans and commitments necessary to demonstrate how the project will effectively contribute and be consistent with current policies and zoning regulations. More specifically, it fails to provide concrete measures or strategies that will be implemented to ensure the conservation of agricultural lands and support for agricultural activities. Best practices for agricultural sustainability, such as land conservation, habitat preservation, and mitigation of land degradation must be integrated into the project's plan to prevent long-term impact. We strongly demand a detailed plan is provided with coherent and actionable steps to demonstrate CEMEX project alignment with each policy goal. We also ask that CEMEX do a thorough examination of each relevant goal and policy, specifying clear steps to reach agricultural sustainability. This is essential to validate its claim to be consistent with local priorities.

Comment 60-11 Cont.

Comment 60-12

Section 4.13 Noise

Noise pollution is a serious yet often overlooked public health issue. Chronic exposure to excessive noise is linked to increased stress, sleep disturbances, cardiovascular disease, and cognitive impairments, particularly among vulnerable groups such as children and the elderly. The DEIR fails to assess noise pollution's cumulative impacts alongside other environmental stressors. Instead, it dismisses noise impact of nearby communities and labels it as a "less than significant" issue without proposing adequate mitigation under noise per **Figure 4.17-1.** Just because noise levels at currently identified intersections 2, 3, 14, and 15 exceed 60 decibels (dBA LdnI) within 100 ft from the road does not mean added noise will not impact communities. Dismissing the need to take further action on how this project noise impact is unacceptable. Even small noise increases can have a negative impact on residents especially combined with other pollution sources.

Comment 60-13

The DEIR clearly fails to acknowledge the project's noise impact level on residents and is dismissive of the cumulative harm to impacted communities. We demand that Fresno County impose stringent noise mitigation measures to be implemented, including stricter operational limits, noise barriers, and increased monitoring. Additionally, the County must ensure full community participation in decision-making. We demand extended public comment periods, mandatory public hearings in impacted neighborhoods, and transparency in enforcement actions. The County must require that CEMEX establish sound barriers, limit operational hours, and conduct long-term noise monitoring to minimize harm to nearby residents.

Comment 60-14

Comment 60-15

Section 4.17 Transportation

The increase in truck traffic resulting from the CEMEX expansion will not only contribute to higher emissions but also increase safety risks for pedestrians and cyclists.

Comment 60-16

Fresno County already suffers from severe air pollution, and adding more truck traffic will significantly worsen our air quality, particularly for those living near major roadways. Additionally, while there are existing bike lanes along impacted intersections, pedestrian infrastructure is severely lacking. An increase in truck traffic will make conditions even more dangerous for cyclists and pedestrians, especially with limited lighting, inadequate signage, and unprotected bike lanes. The risk of road hazards, such as falling aggregates from these trucks, further endangers residents.

Comment 60-16 Cont.

Comment 60-17

Although we appreciate CEMEX initiatives to reach a net-zero CO2 by creating a zero emission fleet and switching to having zero-emission electric ready mix trucks, the DEIR of the Rockfield Expansion Project does not detail how these sustainability goals will be integrated into the local project. The oversight of potential hazards that will impact our communities is a high concern. Also, in light of CNRA's California's Advanced Clean Car II Rule to reach zero-emission vehicles by 2035, we advise that the DEIR address how the Rockfield Expansion Project plans to incorporate zero-emission vehicle into its operation to ensure compliance with state priorities and contribute to our regional air quality improvements. We strongly urge a Specific, Measurable, Achievable, Realistic, Time bound, Inclusive, and Equitable (SMARTIE) plan on how they will transition to zero-emission transport vehicles and fund community air quality monitoring programs. Additionally, the County should also establish buffer zones between truck routes and residential areas to protect our public health. Improvements to pedestrian and cyclist safety should include enhanced protected pedestrian lanes, improved and clear signage, and improved traffic management and safety measures to prevent accidents and fatalities.

Comment 60-18

Comment(s) 60-19 60-20

Again, we thank you for the opportunity to comment on this period of the process. The undersigned are gravely concerned about the length of the time the Fresno County has allowed ongoing and unmitigated environmental issues, despite full understanding of its impact on our communities health, air quality, water quality, and infrastructure damage. Fresno County has an opportunity to demonstrate environmental leadership by upholding strong policies that protect both the environment and the well-being of its residents. I urge the county to reconsider this project proposal mitigation measures and instead adopt a community-centered approach to preserving the priorities of its community needs and health.

Comment 60-21

Comment 60-22

Thank you for your time and consideration. I look forward to your response.

Sincerely,

Andrew Escamilla

Campaigns and Organizing Manager

California Environmental Voters Education Fund

Barbara Brydolf, Ph.D

President & Conservation Chair, Alta Peak Chapter CNPS

From: Gohar Hakimipour
To: Randall , David A.
Cc: District 2
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Monday, March 10, 2025 4:50:01 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 10, 2025

Mr. David Randall
Fresno County Public Works and Planning Department

Dear Mr. Randall,

I'm writing the following letter in regard to the CEMEX plant expansion to the Supervisor Bredefeld who represents my district.

Dear Supervisor Bredefeld,

I hope this letter finds you well. My name is Gohar Hakimipour, and I am the president and founder of the Clovis North River Alive Club. For the past four years, River Alive has spent over 1,500 hours completing service work by the San Joaquin River. Our goal from the start was to preserve the natural beauty of the river by picking up trash and restoring abandoned spots by the river to their former beauty. So, when our club heard of the plans for the CEMEX expansion, we knew it was our right to have a say. River Alive is one of the many stewarts of the river. The CEMEX expansion will hurt the river and its habitat that River Alive has worked so hard to protect. It will jeopardize the peaceful and enjoyable access to the river, but it will also risk the safety of the animals that reside near the river.

Comment 61-1

I am also part of the Clovis North cross country team. As for being a part of a huge running community that extends beyond the boundaries of my school, running across Friant to Woodward Park is stressful with the amount of anxious car traffic going on. A person has died at every intersection on Friant in the past seven years. Those lives were taken because of reckless driving due to traffic. The Cemex expansion will significantly impact the traffic on Friant, adding thousands more heavy truck traffic annually to the current heavy traffic on the Friant Road. Additional traffic as the result of Cemex expansion will compromise traffic safety on Friant and other streets in the area and will put running teams' health and wellness in danger. Not to mention, Cemex expansion will also significantly impact air quality and consequently it impacts the health of the runners and pedestrians who use Woodward Park everyday.

Comment 61-2

Comment 61-3

From as long as I could remember, the San Joaquin River has been a safe haven for me. As a child, I made a lot of memories by the San Joaquin with my family—especially my mom. We used to canoe and swim in the river on weekends. These

Comment 61-4

excursions, although tiresome, allowed me to connect to nature and connect with my mom. The CEMEX expansion will negatively impact this experience for another little girl and her mother. Therefore, I plead with you— protect the San Joaquin River. Ensure the people of Fresno can continue enjoying our beautiful river, and that we don't exacerbate the air quality problems in our city. I hope this moves you in favor of the community of Fresno. Thank you.

Comment 61-4 Cont.

Best Regards,
River Alive Club

Sent from my iPhone

March 10, 2025

Via Electronic Mail

David Randall, Senior Planner
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
DRandall@FresnoCountyCA.gov
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Re: Comments on the CEQA Analysis for the Proposed CEMEX Rockfield Modification Project, EIR 7763

Background

The San Joaquin River Restoration Program (SJRRP) is the direct result of the San Joaquin River Restoration Settlement (Settlement) reached in September 2006 by the U.S. Departments of the Interior and Commerce, the Natural Resources Defense Council (NRDC), and the Friant Water Users Authority (FWUA). The Settlement, which followed an 18-year lawsuit, received Federal court approval in October 2006. The Settlement acknowledges two goals: to restore and maintain fish populations in "good condition" in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, (the "Restoration Goal") and to reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the Restoration Flows provided for in the Settlement (the "Water Management Goal"). Comment 62-1

A key portion of the Settlement in support of the Restoration Goal is the release of a portion of the unimpaired runoff into Millerton Lake down the San Joaquin River to support fisheries. The Settlement also includes the role of a Restoration Administrator (RA), who is selected by the non-Federal Settling Parties (NRDC and FWUA) and appointed by the Court. The RA, in association with an assigned Technical Advisory Committee (TAC) also specified by the Settlement, is tasked with recommending how Restoration Flows will be released to meet the Restoration Goal of the Settlement and with providing input and recommendations for the implementation of various channel improvement measures to be implemented as a part of the Settlement. For the purposes of reviewing and commenting on the CEMEX Rockfield Modification Project (Project), the focus and interest of the RA will be the potential for any impact to hydrology or water quantity that may result from implementation of the Project. Comment 62-2

The CEMEX Rockfield Modification Project (Project) may affect hydrology, river flow and losses along the San Joaquin River beyond what was assumed in the Settlement. Paragraph 13(f) of the Settlement[1] states:

> *The Parties agree to work together in identifying any increased downstream surface or*

[1] NRDC, et al., v. Kirk Rodgers, et al., 381 F.Supp.2d 1212 (2005, E.D.Cal.), https://www.restoresjr.net/?wpfb_dl=9

underground diversions and the causes of any seepage losses above those assumed in Exhibit B and in identifying steps that may be taken to prevent or redress such increased downstream surface or underground diversions or seepage losses.

Comment 62-2 Cont.

As a representative of the Court tasked to consult on the implementation of the Settlement, the RA supported by the TAC has participated in the review of the Draft EIR for the Project.

Key Concerns Regarding the Project

Comment 62-3

The San Joaquin River downstream of Friant Dam to the Merced Confluence is the Restoration area, where the goal of returning riparian vegetation and anadromous fish species is being implemented. This approximately 153-mile series of reaches also experiences substantial losses of river flows – depending on year type, 30% to 85% of the water released to the river at Friant Dam does not reach the Merced confluence. The cause of the losses includes natural seepage and authorized diversions but also include unauthorized diversions and induced seepage from interconnected surface and ground water. These losses have significantly increased in the river reach between Friant Dam and Gravelly Ford, in some years more than 35% greater than what was assumed in the Settlement and the 2002 San Joaquin River Background Report.

As further background, it should be noted that in all but the wettest years, the full flow of the San Joaquin River downstream of Friant Dam is fully subscribed – various users hold existing water rights, and flows are utilized for consumptive or environmental purposes. Water rights holders and contractors along the river are engaged in working together, and with various Groundwater Sustainability Agencies (GSA's) to monitor flows, uses and losses in the river, and to identify and limit any unauthorized or illicit losses.

Comment 62-4

Restoration Flows released pursuant to the Settlement are released from water stored by the Bureau of Reclamation (Reclamation) pursuant to Reclamation's water rights. Restoration Flows released by Reclamation are protected by Section 1707 of the California Water Code, and Restoration Flows are not "abandoned water" available for other uses. But for the Restoration Flow releases, the full volume of Reclamation's stored water would be available for water supply to various Reclamation contractors. All flows stored and released by Reclamation have substantial monetary value to Reclamation or it's contractors.

As RA for the SJRRP, my focus in reviewing the Draft EIR for the Project is the potential for diversion or loss of in-river flows due to implementation of the Project, and as a result of that implementation any negative impacts for the Settlement or Restoration Program. Simply stated, no additional unauthorized diversions, or uncontrolled seepage or losses from river flows that are not fully mitigated, can be allowed because of Project Implementation.

Comments

Comment 62-5

I have coordinated with Reclamation during the review of the Draft EIR and concur and support all of Reclamation's comments on the Project as described and explained in Reclamation's comment letter of March 7, 2025. In addition to Reclamation's comments, I have several comments on the analysis of groundwater and Groundwater-Surface Water Interaction at the Quarry Site.

Comment 62-6

There are a number of generalizations used in the hydraulic analysis of the Quarry site. The analysis uses a small number of test wells (three) along the 7,000 + foot border between the Quarry Site and the San

Joaquin River, as well as a limited data set of testing, to characterize all manner of conditions groundwater and hydrologic conditions and potential impacts. Comment 62-6 Cont.

The following statement appears on pg. 4.10-113 of the Draft EIR:

> *The base flows within the San Joaquin River are typically at or below the elevation of the base of the alluvium on the Quarry Site. Thus, flows from the San Joaquin River toward the Quarry Site within the alluvium can only occur during the infrequent and relatively short-term high flow periods. Due to the recharge trenches along the west side of the Quarry Site, groundwater levels in the alluvium and the weathered rock would be maintained consistent with existing conditions. As a result, there would be no significant change in the volume of potential inflow from the river into the quarry during high flow events through the alluvium and weathered rock as a result of the project.*

Data and information elsewhere in the Draft EIR contradicts the statement that base flows are typically at or below the elevation of the base of the alluvium. For example, the HEC-RAS model results in Appendix G-1, Hydraulic Analysis, show a riverbed elevation of 286.77 at the downstream end of the Quarry Site, and 291.01 at the upstream end of the Quarry Site. Figure 3 & 4, Appendix G-4, Groundwater Conditions at the Quarry Site, shows substantially different thicknesses of alluvium and weathered rock across the site, generally much lower in elevation than the lowest point of the river. Pg 12 of Appendix G-5, states:

> *"Where present, the alluvium is up to 60 feet thick. Beneath the alluvium, the weathered rock ranges in thickness from 20 feet to 60 feet."*

Contrary to the statement above from the DEIR, it is indeed quite possible that there would be a significant change in the volume of inflow from the river, particularly when additional mining activity further lowers the hydraulic grade line across the site.

On pg. 81 of Appendix G-4, Groundwater Conditions at the Quarry Site, it is noted that "for the hardrock, the best values for transmissivity are from the pump tests on MW-1D and 2D. These values were 320 gpd per foot and 960 gpd per foot, respectively, or an average of 640 gpd per foot." These wells are closest to the river of all the monitoring wells, and thus likely represent the best available estimate of current seepage from the river. However, these estimates were averaged with transmissivity values from wells across the site, yielding a much lower estimate of overall transmissivity (350 gpd per foot) and therefore a much lower estimate of groundwater inflow to be addressed in future operation or mitigation

On Pg 4.10-56 of the DEIR, identifies the Friant-Kern Canal as "may be the predominant source of recharge" for the Quarry Site during some times of year. Setting aside the facts that the concrete-lined Friant-Kern Canal is more than a mile from the edge of the Quarry Site boundary at its nearest proximity whereas the river is only 200 feet distant, there is analysis, well data, or other evidence to corroborate this assumption. Further, Appendix N of Appendix G-4 concludes in part: Comment 62-7

> *"Stable isotope data demonstrate that all surface water and groundwater present at the site originated at the same elevation in the Sierra Nevada mountains and is present at the site due to percolation from the San Joaquin River."*

The assumption that some portion of groundwater flow into the Quarry Site originates from the Friant-Kern Canal is not supported and represents another opportunity to substantially underestimate the amount of water moving from the river into the Quarry Site.

It seems entirely possible that various favorable assumptions may have resulted in the underestimation of the volume of inflow from the river to the Quarry Site, particularly as mining progresses and lowers the Comment 62-8

hydraulic grade line for the site. If true, the losses to the river could be substantial. Even under the favorable assumptions in the DEIR, there is no end of losses from the river nor the need for continuous mitigation in the form of future pumping. From the DEIR, pg. 4.10-88:

Comment 62-8 Cont.

> *Upon completion of mining at the Quarry Site at the end of Phase 2… The consumption of groundwater at the Quarry Site would be 145 acre-feet more per year than under existing conditions (i.e., 270 acre-feet after reclamation minus 125 acre-feet existing). An approximately 108-acre, 100-foot-deep lake would be formed from groundwater and rainfall in the excavation bottom. Water would continue to be pumped from the quarry pit into the Northeast Pond and groundwater recharge trenches. Therefore, equipment related to water management, such as pumps, piping, monitoring wells, and related electrical infrastructure, would remain.*

Under more conservative estimates of inflows from the river, it is possible that losses from the river and the extent of permanent mitigation may be far greater.

It is recommended that a site-specific groundwater model be developed and run for analyzing inflows from the river and the extent of pumping required to address those inflows. In particular, different scenarios for subsurface conditions, transmissivity and future river stage can be modeled to provide a full understanding of the range of possible impacts on river flows.

Comment 62-9

The disposal of excess water from the Quarry Site is via a seepage trench located along the river. This appears to be sufficient for current activities, although there are several questions and issues with this system:

Comment 62-10

- The seepage trench is located between river and excavation area. Per the DEIR appendices (Pg 77 – 79, Appendix G-4), "it is assumed that half of the groundwater ditch recharge would flow to the San Joaquin River… the remainder would enter the excavation". If only half of the flow is returned to the river, this is a permanent impact to river flows.
- The current array of wells on the site is not reliably able to estimate inflows from the river, nor effectively measure how much water is returned to the river.
- Appropriate annual filings of water use with the State Water Resources Control Board for any water withdrawn from the San Joaquin River, and volumes of groundwater pumped and transported to the appropriate GSA, should be required.

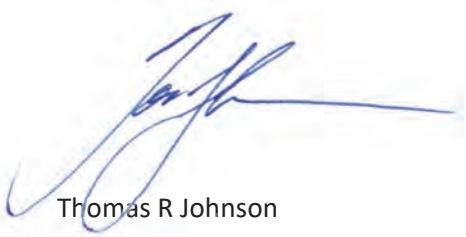
It is recommended that an alternative mitigation system for excess groundwater inflows, inflows from the river, or accumulated mining pit water be identified and included in any final permitting for the Project. The mitigation system must be able to adaptively and permanently manage the entirety of flows to the site, including rainfall, flood flows, and increased inflows to the site due to increased river stage. The mitigation system should be able to a) accurately assess the inflows from the river, b) return 100% of inflows from the river to the river, with no impact on water quality, and c) can accurately measure the returns to the river.

Comment 62-11

I appreciate the considerable effort that the applicant and the County have taken to compile the information in the DEIR and appreciate the opportunity to comment on this Project.

Please feel free to contact me with any questions or comments at tjohnson@trjllc.com or on 916-764-2268.

Regards,



Thomas R Johnson

SJRRP Restoration Administrator

March 10, 2025

David Randall, Senior Planner
County of Fresno
Fresno, CA

CC: Fresno County Supervisor Garry Bredefeld

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear Mr. Randall,

On behalf of the Safe Access to Woodward Park coalition, we would like to share a letter we are submitting to Supervisor Bredefeld, who represents the area around Woodward Park, regarding our strong opposition to the Cemex Project.

Comment 63-1

Dear Supervisor Bredefeld,

Comment 63-2

In September 2020, shortly after Angel Hernandez was fatally hit by a car at the intersection of Friant and Fort Washington when you were the City of Fresno District 6 Councilmember, we invited you to a walk audit along Audubon and Friant Rd with Councilmember Karbassi. As you remember, during our walk we tested different crosswalks that lead to Woodward Park on Friant Road. We discussed the traffic safety situation that high volume traffic is causing on Friant Road and its incompatibility with so many pedestrians and bicyclists walking to and from Woodward Park. Unfortunately, the traffic safety on Friant Rd has gotten worse since then. More fatal accidents like Paul Moore on Friant and Audubon, and Amaya Chenot on Shepard and Friant are proof of that terrible reality. The number of memorials that are erected at every intersection on Friant Road is a testimony to the systematic and chronic traffic safety issues on the roadways near Woodward Park.

The CEMEX expansion will increase truck traffic from 250,000 to 400,000 a year. We desperately encourage you to put the health and safety of residents of your district before the wealth of another mega non-local (non-US) company and say NO to CEMEX request to extend the operation permit to 100 more years and to a scale so big that it will match the biggest mining operation in California.

Comment 63-3

Sincerely,

Anthony J. Molina, M.D.,
Safe Access to Woodward Park Coalition

David Randall Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX Rockfield Quarry EIR 7763 Proposal and the Future of the San Joaquin River

Dear David Randall,

As a member of Fresno Fly Fishers for Conservation and a concerned resident of Fresno County, I am writing to express my deep opposition to the CEMEX proposal that would extend commercial mining operations on the banks of the San Joaquin River for the next 100 years. Comment 64-1

This area is one of the most spectacular parcels of land in the region, yet public access remains extremely limited. Instead of prioritizing conservation and community use, this agreement would extend private and commercial restrictions, preventing generations of Fresno County residents from enjoying this vital natural resource. Comment 64-2

I am particularly concerned about the expedited approval process for this 100-year commitment. The brief public comment period, which ends on March 10th is far too little time for Fresno County residents to learn about the project's consequences. A project of this magnitude demands thorough consideration, not a rushed decision that will impact future generations. Comment 64-3

The environmental consequences of this project cannot be ignored. The California Department of Fish and Wildlife (CDFW) has made significant strides in reintroducing salmon to the San Joaquin River, yet this mining operation could jeopardize these efforts. The increased truck traffic, potential river pollution, and habitat destruction would be devastating for local wildlife. Fracking and blasting a 600-foot mine so close to the river could lead to accidental discharges, seepage, and contamination of the surrounding water table endangering both aquatic ecosystems and local wells. Comment(s) 64-4 64-5 64-6

Beyond the environmental harm, this project poses economic concerns. CEMEX, a foreign-owned LLC, is granted limited liability by design, meaning if damages occur, there may be little accountability. Moreover, the current agreement lacks measurable performance oversight, and reports indicate repeated violations of work schedules and environmental standards. The increased truck traffic alone—up to 1,000 trucks per day will degrade our roads and impact local residents, with little assurance that CEMEX will be held responsible for the consequences. Comment(s) 64-7, 64-8 64-9 64-10

Fresno County deserves better. Rather than approving a destructive mining operation, this land should be preserved and made accessible to the public. A park or conservation area would not only protect the environment but could also generate long-term revenue through recreation, tourism, and sustainable business opportunities. A private mine will only benefit a foreign corporation, while our community bears the long-term costs. Comment 64-11

I urge you to reconsider this agreement and advocate for a better future for Fresno County. Our community has the right to more input and a greater say in how this land is used. Please extend the public comment period and conduct a thorough review of the environmental and economic impacts before making a decision that will affect our region for the next century. Comment 64-12

Thank you for your time and consideration. I look forward to your response on this critical issue.

Sincerely,
Jason Palmer
559-250-9020
Fresno Fly Fishers for Conservation

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 10, 2025

Mr. Jason Palmer
2465 N. Miami Ave.
Fresno, CA 93727

Comment letter on CEMEX Rockfield Quarry EIR 7763

Mr. Palmer,

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

March 10, 2025

Sent via email

David Randall
Senior Planner
Fresno County Department of Public Works and Planning
Tulare Street, Sixth Floor
Fresno, CA 93721
(559) 600-4052
drandall@fresnocountyca.gov

Re: Rockfield Quarry Modification Project Draft Environmental Impact Report, SCH 2020060123

Dear Mr. Randall:

These comments are submitted on behalf of the Center for Biological Diversity (the "Center") regarding the Draft Environmental Impact Report ("DEIR") for the proposed Rockfield Quarry Modification Project ("Project"). The Center has reviewed the DEIR closely and has found that the DEIR's analyses and mitigation for the Project's impacts to biological resources, greenhouse gas emissions, surface and groundwater quality and availability, and its analysis of project alternatives are inadequate. The Center urges the County, at a minimum, to correct the deficiencies identified below and recirculate a revised DEIR to ensure adequate and informed public review of the Project.

Comment 65-1

The Center is a non-profit, public interest environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center has over 1.7 million members and online activists throughout California and the United States. The Center has worked for many years to protect imperiled plants and wildlife, open space, air and water quality, and overall quality of life for people in Fresno County.

Comment 65-2

I. The DEIR Fails to Provide an Accurate Baseline Regarding the Project's Impacts to Biological Resources

Comment 65-3

Under CEQA, an environmental review document must evaluate the potential environmental impacts of the project as compared to the existing environmental conditions (the "baseline"), so that the Project's impacts can be meaningfully analyzed and compared to alternatives. (CEQA Guidelines § 15125(a); see County of Amador v. El Dorado County Water Agency (1999) 76 Cal.App.4th 931, 952; Neighbors for Smart Rail v. LA County Metropolitan

Transit Authority (2013) 57 Cal.4th 310, 315.) The evidence provided in the DEIR's analysis of impacts to biological resources does not meet this standard.

Comment 65-3 Cont.

a. The DEIR Improperly Limits the Scope of Analysis for Special-Status Species

Comment 65-4

To determine which special-status species have the potential to occur on the Project sites, the DEIR includes a literature review and search of existing databases, including a query of the CNDDB ("California Natural Diversity Database") database. However, the DEIR limits its analysis of special-status species to only four USGS 7.5-minute quadrangles (Friant, Lanes Bridge, Little Table Mountain, and Millerton Lake West) but provides no justification for this limited scope (4.4-20). Many special-status species travel long distances or disperse and migrate according to seasonal and climatic patterns. Species that experience metapopulation dynamics exhibit patchy presence and absence across a landscape but depend on suitable unoccupied habitat for long-term population stability. As such, not all species that may be impacted by the Project will be captured focusing on the four quadrangles centered on the Project site. To thoroughly analyze the potential impacts of the proposed Project, the Applicant should expand the CNDDB search to include all nine quads surrounding the Project site. The CNDDB has even created a tool to do so: the QuickView tool "Species in 9 Quads" query.[1]

b. The DEIR Improperly Withholds Data and Fails to Provide Adequate Information on Biological Surveys

Comment 65-5

The DEIR fails to perform more than cursory analysis of presence or absence of sensitive species in and around the Project area. The DEIR conducted a literature review and search of existing databases, but only performed limited surveys. While the literature sources of information used for the DEIR's analyses are extremely valuable and necessary, they are not sufficient to determine the biological resources present in the Project area, and the minimal survey for wildlife is far from adequate to detect special-status species. At each Project site, general surveys were conducted on a single day, April 30, 2019 (App E-1, p.6; App E-2, p.6). The only surveys that targeted any special status species were three surveys conducted over three days in 2017, which exclusively targeted special-status plant species within the Project boundaries (App E-3, p.1). The only surveys that assessed the habitats around the Project site, which include the San Joaquin River and Little Dry Creek among other habitats, were generalized wildlife surveys conducted on a single day, June 14, 2021 (4.4-3). This survey only extended to habitats between the two Project sites, between the Plant site and Little Dry Creek, and within 0.5 miles of the Project site along the San Joaquin River.

Notably, the information provided in the DEIR regarding the 0.5 mile surveys is inconsistent and insufficient to determine how the surveys were actually conducted, and therefore insufficient to determine whether the surveys were adequate. For example, the Plant Site Habitat Assessment (App E-1) states that this 0.5 mile buffer included in the survey only "extends from the project site to the edge of the riparian zone associated with the San Joaquin River" (App E-1, ES-1). Presumably, this is because the River lies 0.6 miles west of the project site (App E-1, ES-3), however this is not stated outright. However, later in this same appendix

[1] CNDDB QuickView. https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data#43018410-cnddb-quickview-tool

(App E-1 Section 4.2.6, Riparian Habitat and Upland Vegetation, p.13), the DEIR lists several plant species that were "found" in the survey. Was the riparian area included in this survey or not? The Quarry Site Habitat Assessment (App E-2) also references the additional 0.5 mile buffer survey conducted in 2021. In both assessments, the exact same language is used: "A subsequent biological inventory was conducted on June 14, 2021, by Thomas J. McGill and Jacob Davies." However, neither assessment provides detailed information on how that subsequent survey was conducted; a description of methodology is only provided for the April 30, 2019 surveys. It is therefore unclear whether the subsequent 2021 surveys a) included riparian habitat and b) were field surveys or were based on aerial imagery or existing databases. This lack of detail obfuscates the DEIR and makes it impossible to assess the survey efforts.

Comment 65-5 Cont.

On-the-ground surveys are particularly important to determine the wildlife that surround the Project sties. The riparian zone along the San Joaquin River should receive particular attention and survey effort, as it provides suitable habitat for numerous special-status species. The DEIR itself states that "Riparian habitats found along the San Joaquin River… provide nesting habitat for raptor species" (App E1, p.15) and "The San Joaquin River corridor is considered a significant wildlife movement corridor that provides natural areas for wildlife to move through the region in search of food, shelter, or nesting habitat." (App E1, p.16).

Alarmingly, the survey information is even further deficient—the DEIR does not actually provide the data from the survey efforts at all, except in the form of maps of vegetation/habitat types. Both the Quarry and the Plant site assessments reference an Appendix B, the Observed Flora and Fauna Compendium: "Common plant species observed during the habitat assessment were identified by visual characteristics and morphology in the field and recorded in a field notebook (See Appendix B)" (App E-1, and E-2 p.7); "Wildlife species detected during the habitat assessment by sight, calls, tracks, scat, or other sign were recorded during surveys in a field notebook (See Appendix B)." (App E-1 and E-2, p.8). For both assessments, Appendix C, Potentially Occurring Special-Status Biological Resources, referenced in E-1 p.17 and E-2 p.20 is also missing. Astoundingly, this data appears to have been removed from the DEIR "for brevity" (App E-1, PDF page 61, App E-2, PDF page 125). Instead, a link is provided to the County's Project website,[2] but the website does not provide this information either. This is an egregious oversight that amounts to a clear withholding of important from the public.

For the public to properly assess the biological resources analysis and mitigation, the DEIR must provide detailed information on what areas were actually surveyed, how all surveys were performed, and what species (plants and animals) were observed. The DEIR fails to do this, instead withholding data, in clear violation of CEQA

c. The DEIR Fails to Provide Adequate Baseline Information on Numerous Special-Status Species

Comment 65-6

As noted above, the DEIR relies on existing databases, aerial imagery, and only brief general biological surveys time to determine whether special-status species are present in and around the Project area. The surveys included walking transects and recording plants and animals that were observed, including animal sign like scat (App E-1 p.7, E-2 p.8). However, general

[2] https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/environmental-impact-reports/cemex-rockfield-expansion

biological surveys often do not detect cryptic, fossorial, migratory, aestivating, or nocturnal wildlife species. Such species with suitable habitat in and around the Project area could be permanently or periodically present, even if not observed during a general biological survey. Targeted surveys are necessary to assess the presence of these species.

Comment 65-6 Cont.

However, targeted surveys were not performed for *any* species, either within or around the two Project sites. Instead, the DEIR relies on historical data and claims that because quarry operations have been ongoing for decades, numerous species either do not occur or are unlikely to occur in and around the Project site (4.4-23). However, numerous special-status species have been observed in very close proximity to the Project area, and have the potential to be impacted by the proposed Project. Species-specific survey data is therefore particularly important for these species, which include California tiger salamander, burrowing owl, western pond turtle, and western spadefoot, all of which can be difficult to detect without targeted surveys. For example, western spadefoot and California tiger salamander spend the majority of the year underground, and would not be detected by a one-day survey based on daytime visual observations along a transect, which is all that the DEIR includes. The DEIR therefore does not provide sufficient evidence that these species are either absent or unlikely to occur, thereby failing to provide an accurate baseline.

The DEIR claims that California tiger salamander and burrowing owl are both absent from the Project sites and that western pond turtle and western spadefoot have a low potential to occur. These claims are based on CNDDB data and a 2019 habitat assessment. However, California tiger salamanders have been observed within 1 mile and 0.5 miles of the of the Plant site and Quarry sites, respectively (4.4-29, 30), burrowing owls have been observed just over 2 miles away from each Project site (4.4-32), western pond turtles have been observed within 2.75 and 3.25 miles of the Plant and Quarry sites respectively (4.4-35), and western spadefoots have been observed within 1.8 and 1.2 miles of the Plant and Quarry sites respectively (4.4-36). All of these are small distances well within the possible movement range of these species. For example, California tiger salamanders regularly move over 600m, and sometimes up to 2.2 km, away from their breeding ponds (Orloff, 2011; Searcy et al., 2013). Burrowing owls forage over 2-3km from their nests, and young owls disperse up to 50+ km. Additionally, many burrowing owl populations are migratory, moving across very large distances (Miller, 2024). Western pond turtle nests have been found up to 1,919 feet from aquatic habitats and individuals have been documented to move regularly between aquatic habitats with long-distance movements of up to 2,018 feet (Sloan, 2012). Western spadefoots have been observe to disperse up to 600 m from breeding pools, and are likely able to disperse even further (Halstead et al., 2021; Laabs et al., 2001).

The DEIR claims that because the Project area has already been significantly disturbed and numerous movement barriers surround the Project sites, it is unlikely that any of these species will occur in the Project area. However, disturbance does not preclude the presence of these species. For example, California tiger salamanders can be found in agricultural channels and stock ponds (Alvarez et al., 2021; Wilcox et al., 2015), and numerous burrowing owl colonies exist at airports (Miller, 2024). Additionally, movement barriers around the Project area are not complete—wildlife movement across roads for example does occur, even though it may be infrequent—and individuals have the potential to enter the Project site from surrounding areas.

Comment 65-7

Additionally the DEIR fails to consider importance of adequate baseline data near the Project site but outside of the Project's footprint, as the potential impacts from the proposed

Comment 65-8

quarry—including both ongoing operations and the newly proposed blasting—may impact surrounding areas. As noted above, the DEIR references surveys of a 0.5 mile buffer around the survey area, but it these surveys also did not target any specific species – in fact, it is unclear if they included any field data at all.

Comment 65-8 Cont.

As detailed below, the rock blasting which would occur as part of the proposed Project operations has not been conducted previously, and is likely to have new detrimental impacts to wildlife outside of the Project footprint. These impacts, which include but are not limited to noise, vibrations, flyrock, dust, and geological stability, would extend beyond the Project footprint into the surrounding areas, which include the San Joaquin River and the Ball Ranch Nature Preserve, both of which support rich biodiversity and special-status species. Any special-status species that may be present in these areas, as well as on the Project sites, could be impacted by the proposed Project. Surveys and analyses must therefore include both the Project sites and the surrounding area. The DEIR entirely fails to accomplish either of these requirements.

d. The DEIR Improperly Excludes Numerous Water Features from Analysis of Baseline Conditions

Comment 65-9

The DEIR's analysis of impacts to biological resources excludes at least two water features from analysis, the river water delivery ditch at the Quarry site and the waste wash conveyance ditch at the Plant site (4.4-7). The river delivery ditch connects the quarry to the San Joaquin River, which hosts many special-status species that may also use the ditch as habitat and may therefore be impacted by the Project. The waste wash ditch conveys water from the aggregate processing plant to the onsite silt ponds. The DEIR presumably justifies exclusion of the ditches because they are not technically defined as a water of the US, a water of the state, or a lake or streambed under state and federal laws (4.4-19), although an explicit justification is not provided.

Regardless of legal definition, the ditches may serve as habitat for special-status species. The river supply ditch in particular connects a natural river that supports high biodiversity to the Project Site, and it is entirely possible that special-status species including but not limited to western pond turtle may use the ditch as habitat. For example, western pond turtles use a wide variety of aquatic and terrestrial habitats, including perennial and ephemeral waters, as well as standing water and streams (Bondi, 2009; Holland, 1994; M. R. Jennings & Hayes, 1994), and could use either of the two ditches as habitat. The DEIR also provides no detail on whether the river supply ditch is accessible by fish from the San Joaquin River, which could include Chinook salmon. If the ditch is accessible by salmon, then it is entirely possible that individuals could become trapped in the ditch or the quarry, leading to injury or mortality. In such a case, the impacts to this sensitive species could be significant. Additionally, the Project proponent would be obliged to obtain take authorization to operate the Project including the river supply ditch, which the DEIR fails to account for. By failing to assess the existing conditions in the ditches, and failing to consider special-status species that may occur in the ditches, the DEIR fails to establish an accurate baseline and potentially excludes important impacts to special-status species, in violation of CEQA.

e. The Proposed Mitigation for Numerous Special-Status Species is Insufficient and Improperly Deferred

Comment 65-10

The deficiencies in the baseline analyses noted above contribute to a lack of sufficient mitigation for impacts to special-status species. Because the DEIR inappropriately concludes that California tiger salamander is absent from the Project site, the DEIR fails to provide any mitigation measures for potential impacts to this species at all. Given the lack of adequate surveys described above, this failure to mitigate for the potential impacts to California tiger salamander is completely unjustified, and must be remedied. Comment 65-10 Cont.

The DEIR does provide mitigation measures for impacts to burrowing owl, western spadefoot and western pond turtle within the Project sites (MM 4.4-1a,b), but these mitigation measures include only pre-construction surveys and development of relocation plans (4.4-50). In the case of the burrowing owl, relocation should not be considered an appropriate mitigation measure except as a last resort. As noted by the California Department of Fish and Wildlife's ("CDFW") Staff Report, all possible avoidance and minimization measures should be considered before temporary or permanent exclusion and closure of burrows to avoid "take," and habitat compensation must be provided for any evicted owl (State of California Department of Fish and Game, 2012). The DEIR fails to consider any mitigation except relocation, in violation of these standards.

Additionally, for all three of these species, the proposed mitigation is improperly deferred, offering only vague plans to relocate any individuals encountered. The burrowing owl mitigation (MM 4.4-1) states that if burrowing owls are found, "a relocation plan shall be developed, approved by CDFW, and implemented prior to development of any Quarry Site grasslands. The western pond turtle and western spadefoot mitigation (4.4-2) states that these species would be relocated "to a nearby, suitable habitat near the Quarry Site." However, no specific relocation sites are identified for any of the three species. Relocation plans should be developed and completed for the DEIR so that the public and decision makers can judge whether such measures would adequately mitigate the Project's impacts. The DEIR therefore provides insufficient detail for the public and decision makers to ascertain whether such measures would adequately mitigate the Project's impacts to these sensitive species. Comment 65-11

This improperly deferred mitigation violates CEQA. (see *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 670 [EIR inadequate where the success or failure of mitigation efforts "may largely depend upon management plans that have not yet been formulated, and have not been subject to analysis and review within the EIR"]). In the limited circumstances in which deferred mitigation is appropriate, the agency must meet all of the following elements: (1) practical considerations prevented the formulation of mitigation measures during the planning process; (2) the agency committed itself to developing mitigation measures in the future; (3) the agency adopted specific performance criteria prior to project approval; and (4) the DEIR lists the mitigation measures to be considered, analyzed, and possibly incorporated into the mitigation plan. (See *POET, LLC v. State Air Resources Bd.* (2013) 218 Cal.App.4th 681, 736-37 [review denied].) The DEIR fails to meet these criteria.

Additionally, as noted elsewhere in this letter, impacts from the Project are likely to extend beyond the Project's footprint, so relocating individuals to areas close to the Project may not prevent significant impacts. In fact, the proposed mitigation for burrowing owl, western pond turtle, and western spadefoot entirely fails to consider impacts outside of the boundaries of the Project sites at all, despite the fact that impacts from the proposed Project's new operations (including blasting) are likely to extend well beyond the existing Project footprint. These mitigation measures are therefore insufficient.

II. The DEIR Fails to Adequately Analyze or Mitigate the Project's Blasting Impacts to Special-Status Species

Comment 65-12

The DEIR fails to provide an adequate analysis of significant impacts from the proposed Project, particularly (but not limited to) impacts from the proposed blasting. The proposed Project would include blasting up to 600 ft deep into hard rock below the alluvium in the Quarry Site, which would lead to numerous potential new impacts, including flyrock, dust, pollutants, noise, and ground vibrations. The DEIR fails to analyze any of these impacts on the wildlife that may be present in and around the Project site, including sensitive species that reside in and around the San Joaquin River (with the exception of a brief but flawed consideration of Chinook salmon), which lies a mere 200 feet from the edge of the quarry.

In place of an actual analysis of potential impacts, the DEIR provides only generalized anecdotal examples of wildlife habituating to ongoing quarry operations in the past (4.4-53, 54). Anecdotal evidence is far from sufficient to determine impacts and their significance. Not only does such evidence suffer from detection bias (i.e., only those individual animals that are able to acclimate will be observed, and those that are unable to acclimate will be unjustly ignored), but it also fails to consider the best available science on blasting. Additionally, these anecdotal examples describe habituation of wildlife to the ongoing quarry operations, which consist only of surface mining, and do not include blasting. The DEIR provides no actual study of how blasting will change the impacts of the Project and how wildlife might be affected. The so-called evidence provided in the DEIR is therefore not an appropriate to determine potential impacts of the proposed Project, particularly expansion of quarry operations through blasting.

The San Joaquin River is a precious biodiversity resource, home to numerous special-status species, including Chinook salmon, raptors, riparian birds, western pond turtle and many others. All potential impacts to the San Joaquin River and its species must be thoroughly analyzed and mitigated. The DEIR fails to accomplish this.

a. Central Valley Spring- and Fall-run Chinook Salmon

Comment 65-13

The DEIR's analysis and mitigation for impacts to Chinook salmon is insufficient. Chinook salmon have been extremely economically and culturally important for thousands of years, and remain so today. Extensive water diversions, dams, and other modifications along the San Joaquin River have rendered much of their historical habitat inaccessible, and the species has suffered great declines. The Central Valley spring-run Chinook salmon is currently listed as threatened under the state and federal Endangered Species Acts, and fall-run Chinook salmon are a species of concern. The San Joaquin River Restoration Program, a multi-agency effort to restore fish populations in the River, is currently conducting a reintroduction effort to bolster this sensitive species in the San Joaquin River. It is therefore of paramount importance that any impacts to salmon, particularly (but not limited to) those from blasting, be thoroughly analyzed and fully mitigated.

The DEIR fails to accomplish this. The DEIR provides an analysis of impacts to Chinook salmon, but the analysis is insufficient, and it minimizes the risks to this highly sensitive species. The DEIR claims that the impacts to salmon will be less than significant (4.4-63), with insufficient evidence to support this claim. The DEIR's analysis is based on a comparison of blast modeling results to the State of Alaska Department of Fish and Game blasting standards (Kolden & Aimone-Martin, 2013; "Alaska standards"). These standards are themselves based on

a summary analysis of numerous empirical studies, which investigated different species using different methods, some of which were lab-based and some of which were field-based, but none of which were standardized. In fact, only one study cited in the Alaska standards included Chinook salmon, and the study focused solely on impacts to juvenile fish, not eggs or adults. Such data are no doubt important to our understanding of blasting impacts on salmonids, but do not necessarily provide a standard that can be applied to all salmonid species in all localities. The DEIR fails to address this, providing no evidence showing that the results from the Alaska standards are applicable to the species and conditions present in the San Joaquin River. In fact, the Alaska standards themselves show that different species of fish have different sensitivity thresholds to vibrational impacts. Further, the ecology and biology of California are extremely different from many of the localities studied in the references cited in the Alaska standards, which primarily focused on Alaska and Canada. It is not safe to assume that standards developed for Alaskan biological communities and Alaskan river conditions are relevant to those in the San Joaquin River.

Comment 65-13 Cont.

Critically, the proposed Project provides no avenues for monitoring or adjustment in the case that the noise or vibrational impacts are greater than predicted by the modeling. Given the weaknesses in the analysis outlined above, it is entirely possible that the blasting would result in greater noise and vibrations reaching the river than expected, but without any kind of monitoring in place, we would never know such impacts were occurring. The DEIR is therefore entirely inadequate to detect, let alone mitigate, impacts to Chinook salmon in the San Joaquin River. To even approach adequacy, the Blasting Protocols (4.4-57) must include monitoring of the actual sound and vibrational impacts to the riverbed, and provide a contingency plan in the case that data detected in the San Joaquin River exceeds those thresholds. The County must not put the fate of this iconic socially and economically important species on limited data without proper checks in place.

Given the sensitivity of the Chinook salmon population in the San Joaquin River and the significant resources and effort that are currently being applied to support this species, relying on untested modeling, unproven assumptions and limited data to determine whether fish will be harmed is not acceptable.

b. Western Spadefoot and Western Pond Turtle

Comment 65-14

The DEIR also provides limited mitigation for western spadefoot, which only addresses impacts to individuals present on the Project site. Potential impacts of the expanded quarry operations including blasting were not addressed at all. Mining for gravel and clay has destroyed and degraded vernal pool habitat in many areas, disrupting soil formations, hydrology, and seed banks and introducing harmful invasive species (U.S. Fish and Wildlife Service, 2005). In the case of the proposed Project, such impacts would have occurred long in the past, if at all. However, if western spadefoot are still present in and around the Project site (which is impossible to determine with certainty given the lack of surveys described above), they are likely to be negatively impacted by the proposed Project. In addition to directly killing individuals and destroying spadefoot habitat when present, activities that disturb the soil and produce low frequency noise and vibration, such as mining, grading for development, and seismic exploration for natural gas may negatively impact western spadefoots (U.S. Fish and Wildlife Service, 2005). Dimmitt & Ruibal, (1980) found that western spadefoots were extremely sensitive to these types of stimuli and would emerge early from their burrows in response to these ground-moving

activities, disrupting their natural dormancy patterns. Such emergence at inappropriate times could lead to non-lethal detrimental effects that may result in reduced fitness or mortality (U.S. Fish and Wildlife Service, 2005).

Comment 65-14 Cont.

Western pond turtles are also likely to be impacted by the Project's operations if they occur in or around the Project site. While only limited data exists on the impacts of noise and vibrations on turtles, studies show that turtles can detect a range of sounds, with sea turtles likely avoiding anthropogenic noises, and noise can affect nesting in at least one sea turtle species (Maeda et al., 2024; Simmons & Narins, 2018). As discussed above, western pond turtles may occur in and around the Project site, nest in upland habitats near bodies of water, numerous of which are present in and around the Project site. Any western pond turtles near the Project sites could be harmed by the Project's blasting and operations, even outside of the project footprint.

The only mitigation provided for these two species (western spadefoot and western pond turtle) is Mitigation Measure 4.4-1b, which would require pre-construction surveys and clearance of any ponds on the two sites that are scheduled for removal. The impacts to these species from ongoing operations as well as new operations, including blasting, are not analyzed or mitigated at all. In addition to the failure to conduct adequate surveys, the DEIR provides insufficient analysis or mitigation for potential impacts to western spadefoot or western pond turtle from the proposed Project's operations.

c. Nesting Raptors

Comment 65-15

The DEIR does acknowledge potential impacts to nesting raptors, including Swainson's hawk and bald eagle. The DEIR notes that "abundant nesting habitat for raptor species can be found offsite along the San Joaquin River… and in the area along Little Dry Creek" and that "Ground disturbance and noise impacts from mining could disturb nesting birds located on or near the project sites" (4.4-49). However, the proposed mitigation for these impacts is insufficient to address these acknowledged potential impacts. MM 4.4-1c requires pre-construction surveys for nesting birds, including raptors. However, the mitigation requires only a 500' buffer zone around the disturbance area for these surveys, which is well below the standard mitigation outlined by CDFW. The CDFW guidelines for Swainson's hawk nesting surveys stipulate a 0.5 mile survey radius, significantly larger than that which is required in the DEIR (Swainson's Hawk Technical Advisory Committee, 2000). The National Bald Eagle Management Guidelines specify that new activity should not occur within 660 feet of a nest (US Fish and Wildlife Service, 2007); again, greater than the search radius described in the DEIR's mitigation. The DEIR therefore ignores guidelines based on the best available science, rendering its mitigation for impacts to Swainson's hawk and bald eagle insufficient.

d. Other Resident and Migratory Birds

Comment 65-16

Resident and migratory birds are similarly overlooked. The DEIR notes that habitats within and around the Project sites "provide suitable habitat for a variety of year-round and seasonal avian residents, as well as migrating songbirds that occur in the area." (4.4-18). Even with minimal wildlife surveys, numerous bird species were detected in the two Project sites, including red-winged blackbird, gadwall, red- tailed hawk, killdeer, American coot, common yellowthroat, pied-billed grebe, northern rough-winged swallow, tree swallow, and western kingbird (4.4-12,17). Additional nesting and resting habitat for both resident and migratory birds

lies in around the Project sites, including the San Joaquin River and the Ball Ranch Nature Preserve. As noted in the DEIR, "Nesting habitat occurs west of the project sites in riparian and oak woodland habitats associated with the San Joaquin River as well as north of the Plant Site associated with Little Dry Creek." (4.4-22). Any additional disturbance or alteration of natural habitat through the Project's proposed operations will have significant impact on the many bird species that use the habitats around the Project sites area, including not only nesting birds but migratory birds as well. The Project's impacts to migratory birds must therefore be analyzed, disclosed, and mitigated.

Comment 65-16 Cont.

The DEIR asserts that pre-construction nesting surveys for nesting birds, and buffers around any existing nests, will reduce impacts to less than significant (4.4-50-52). However, this analysis ignores the impacts of edge effects from Project operations on nesting birds, and fails to analyze impacts to birds that are not nesting, which includes birds that may use the Project and surrounding areas as a migratory stopover point or birds that forage in and around the Project sites. As described above, the proposed Project blasting operations will introduce new edge effects, including noise, which may impact resident and migratory birds within and around the Project areas. For example, field observations and controlled laboratory experiments have shown that traffic noise can significantly degrade habitat value for migrating songbirds (Ware et al., 2015). Subjects exposed to 55 and 61 dBA (simulated traffic noise) exhibited decreased feeding behavior and duration, as well as increased vigilance behavior (Ware et al., 2015). Another study found a 28% decrease in bird abundance in areas when traffic noise was present compared to when there was no traffic noise (McClure et al., 2013). And these impacts do not always improve over time: researchers have postulated that some species in areas with chronic noise pollution may become *more* sensitive to noise stressors instead of becoming habituated or less sensitive to them (Goudie & Jones, 2004). Therefore, birds (and other native wildlife) in and around the project site could be significantly adversely affected by ongoing noise from the proposed Project operations, including blasting. Nesting and foraging would both be impacted. Birds that would otherwise nest near the project site may be unable to do so, and birds that forage in and around the Project may not be able to access previously available foraging areas. However, the DEIR fails to consider these impacts, and provides no analyses or mitigation to address them, in violation of CEQA.

III. The DEIR Fails to Adequately Analyze or Mitigate the Project's Impacts to Wildlife Connectivity

Comment 65-17

Habitat connectivity is vital for wildlife movement and biodiversity conservation. Limiting movement and dispersal with barriers (e.g., development, roads, or fenced-off croplands) can affect animals' behavior, movement patterns, reproductive success, and physiological state, which can lead to significant impacts on individual wildlife, populations, communities, and landscapes (Ceia-Hasse et al., 2018; Cushman, 2006; Haddad et al., 2015; Trombulak & Frissell, 2000; Van Der Ree et al., 2011). Individuals can die off, populations can become isolated, sensitive species can become locally extinct, and important ecological processes like plant pollination and nutrient cycling can be lost. In addition, connectivity between high quality habitat areas in heterogeneous landscapes is important to allow for range shifts and species migrations as climate changes (Cushman et al., 2013; Heller & Zavaleta, 2009). Lack of wildlife connectivity results in decreased biodiversity and degraded ecosystems.

Comment 65-17 Cont.

Connectivity among and between natural waterways and upland habitat is essential for native species as well. The shade and erosion control from riparian vegetation provide cool and clear streams that are ideal for spawning and rearing (Lohse et al., 2008; Moyle et al., 2011). Encroachment and over-aggressive removal and degradation of riparian areas have been identified as major drivers of declines in California's freshwater and anadromous fish (Grantham et al., 2012; Lohse et al., 2008; Moyle et al., 2011; Opperman et al., 2005; Pess et al., 2002). Many other species, including mountain lions and bobcats, often use riparian areas and natural ridgelines as migration corridors or foraging habitat (Dickson et al., 2005; Hilty & Merenlender, 2004; M. Jennings & Lewison, 2013).

In addition to providing habitat connectivity, buffer zones around the County's aquatic habitats are essential to protect the County's high diversity of plants, fish, aquatic invertebrates, birds, amphibians, and reptiles. The streams (perennial and intermittent), wetlands (including vernal pools), and reservoirs throughout the County support numerous special-status flora and fauna, including steelhead trout, western pond turtles, and California red-legged frogs. Species that rely on these aquatic habitats also rely on the adjacent upland habitats (*e.g.*, riparian areas along streams, grassland habitat adjacent to wetlands). In fact, 60% of amphibian species, 16% of reptiles, 34% of birds and 12% of mammals in the Pacific Coast ecoregion (which includes Napa County) depend on riparian-stream systems for survival (Kelsey & West, 1998). Additionally, fish rely on healthy upland areas to influence suitable spawning habitat (Lohse et al., 2008), and agricultural encroachment on these habitats has been identified as a major driver of declines in freshwater and anadromous fish (Lohse et al., 2008; Moyle et al., 2011).

The DEIR fails to adequately analyze or mitigate impacts to wildlife connectivity from the proposed Project. The DEIR downplays the importance of the Project area to connectivity, failing to mention the area has been identified as CDFW as a "Conservation and Planning Linkage"[3] and failing to admit that the Project may impact the San Joaquin River. Instead, the DEIR erroneously claims that the "downward direction of mining activities is not expected to compromise wildlife movement opportunities or prevent the surrounding habitat from continuing to function as a wildlife corridor" (4.4-62) and that impacts to wildlife movement or corridors would therefore be less than significant (4.4-63).

This conclusion ignores the fact that the quarry is already likely disrupting connectivity, particularly along the San Joaquin River, and the proposed Project's extension of quarry and plant operations would continue to disrupt connectivity along the river for another hundred years. Even if the proposed Project did not include new hard rock mining, a continuation of the status quo alluvial mining operations that have been occurring for decades would itself have a significant impact on wildlife connectivity. If instead the operations were to be discontinued, connectivity would likely be greatly enhanced along the San Joaquin River and its riparian corridor. Further, the new proposed blasting operations and the additional mining operations that go with them will likely have additional, novel impacts to connectivity that must also be fully analyzed. The DEIR fails to do either of these necessary analyses.

The Quarry Site is already extremely close to the San Joaquin River—within 200 feet. This distance is significantly smaller than the buffers around aquatic resources that are supported by the best available science. Even buffer zones of 400 feet along streams and wetlands are often insufficient for wildlife protection (Fischer & Lindenmayer, 2000; Kilgo et al., 1998; Semlitsch & Bodie, 2003). A literature review found that recommended buffers for wildlife often far

[3] California Department of Fish & Wildlife Areas of Conservation Emphasis (https://apps.wildlife.ca.gov/ace/)

exceeded 325 feet, well beyond the largest buffers implemented in practice, and far beyond the distance between the San Joaquin River and the Quarry Site (Fischer & Lindenmayer, 2000; Robins, 2002). For example, Kilgo et al. (1998) recommend more than 1,600 feet of riparian buffer to sustain bird diversity. In addition, amphibians have been found to migrate over 1,000 feet between aquatic and terrestrial habitats through multiple life stages (Cushman, 2006; Fellers & Kleeman, 2007; Semlitsch & Bodie, 2003; Trenham & Shaffer, 2005), and western pond turtles have been found to migrate over 1,300 feet and 10,000 feet respectively from breeding ponds and streams (Semlitsch & Bodie, 2003; Trenham, 1998). Little Dry Creek, which lies 500 feet north of the Plant Site (2-23), is also within these science-based buffer zones, and its function as a potential riparian wildlife connectivity corridor would also likely be compromised by both ongoing and expanded operations.

Comment 65-17 Cont.

As described above, edge effects from the Project include but are not limited to noise, vibrations, flyrock, dust, and geological stability, all of which can impact the quality of the San Joaquin River riparian corridor and the ability of animals to move around the Project site. The proposed Project will continue the status quo of disruptive quarry operations near an essential riparian corridor and will introduce additional potential impacts from increased operations and new blasting activity that will further degrade a critical connectivity area. The DEIR fails to adequately disclose, assess, and mitigate the Project's impacts to wildlife connectivity and therefore fails to comply with CEQA.

IV. The DEIR Vastly Understates the Risk of Blasting Impacts on the San Joaquin River Ecosystem, and Improperly Defers Mitigation

Comment 65-18

The San Joaquin River is vitally important not only to California's water supply but to the many species and ecosystems that rely on its function and flows. The River has suffered over the past decades and centuries from over-exploitation, and the remaining perennial stretches with healthy riparian habitats are more important to preserve than ever.

The DEIR notes that "without appropriate vibration and airblast reduction measures, blast-induced groundborne vibration could exceed bank stability threshold" (4.4-57) and claims that the Blast Protocols would prevent significant impacts to the San Joaquin River (4.4-58). The Blasting Protocols include guidelines to monitor the impacts of blasting on the River, including vibration measurements, overpressure measurements, and visual inspection of the embankment. However, the Blast Protocols state that these visual inspections will only occur until blasts reach a depth of 100 feet (App H-6, p.5), without explaining this decision or providing any justification for cessation of riverbank monitoring. The DEIR appears to assume that blasting below 100 feet would not introduce additional risks of riverbank destabilization, but without providing a scientific explanation as to why this would be the case, it is impossible to determine whether this proposed mitigation will be sufficient to mitigate blasting impacts.

Furthermore, the DEIR provides absolutely no contingency plan for a situation in which the river embankment becomes damaged or the quarry experiences pit failure. Instead, the DEIR states "Should significance thresholds be exceeded or signs of instability of the embankment (such as clumping or cracking) be noted, the County must be notified within 48 hours. If it is determined that the instability is the direct result of blasting, and not due to natural water erosion, with or without flooding, then a corrective plan must be developed that identifies changes to the blasting program to prevent future exceedances" (4.4-58). Even the Blasting Protocols themselves state: "If the blast monitoring indicates that ground vibration or air overpressure

Comment 65-19

exceed the criteria recommended… or if flyrock exceeds the limits of the defined blast clearance zone, the operator will provide notification to Fresno County within 48 hours and identify changes to the blasting program that will be implemented to prevent future exceedances" (App H-6, p.6). This mitigation provided in the form of the Blasting Protocols (MM4.10-1) is improperly deferred. Any corrective plan or contingency plan must be fully developed before any blasting would occur, and must include an evidenced-based strategy that would be quickly implemented to prevent collapse of the riverbank and avoid potential catastrophe outlined below. The DEIR must include sufficient information about mitigation that the public and decision makers can determine whether such measures would adequately mitigate the Project's blasting impacts to the San Joaquin River. The DEIR entirely fails to accomplish this. As explained above, such improperly deferred mitigation violates CEQA.

Comment 65-19 Cont.

Further, this approach of deferring contingency plans until bank stability problems arise vastly minimizes the potential disastrous impacts of a pit failure. If the banks of the San Joaquin River were to become unstable, whether directly due to blasting operations or due to natural processes, and the river channel was to be altered such that flow was diverted into the quarry, even temporarily, the local and downstream impacts could be catastrophic. Such an event could wash out riparian habitat, harm and kill aquatic and riparian wildlife that get diverted into the pit, and introduce sediment and pollutants from the pit into the river, impacting wildlife and water quality for miles downstream.

Blasting of any kind is likely to increase this risk, even with the monitoring requirements outlined in the DEIR. One small mistake or miscalculation could lead to wide-reaching disaster from which the San Joaquin River might never fully recover. The County should not put the health of an entire river ecosystem at risk by allowing blasting so close to the San Joaquin River.

The potential for pit failure is particularly concerning given the potential for natural flooding as well. As described below in this letter (Section V-c), the DEIR's analysis conveniently finds that the San Joaquin River's 100-year floodplain no longer overlaps with the Quarry site, which FEMA's floodplain designation does (App G-1, App. A, Fig. 2). However, research indicates that flooding in California will become more extreme with climate change, not less, indicating that the 100-year floodplain may need to be updated to include the Quarry site. If blasting weakens the river embankment at all, even if those impacts are below the DEIR's established thresholds of significance, this weakening may compound with natural flooding and erosion processes to further stress the riverbanks and potentially increase the risk of pit failure, along with other synergistic flood impacts.

Even without a pit failure, deepening of the quarry is likely to have long-term impacts on the river. As stated by Norman et al. (1998), "In the long term, stream capture by gravel pits is a near certainty. Because the gravel pits have a lower base elevation, there is risk of rapid channel change into the pits during high flows, a process termed avulsion. The flooded pits "capture" the stream." If the Quarry is deepened by 600 feet as the Project proposes, any flooding in the near- or long-term could result in capture of a huge amount of streamflow. The impacts of such avulsion include river bed erosion, channel incision, bank erosion and collapse, changing aquatic habitat, increase in sediment, and damage to fish spawning habitat, among others (Norman et al., 1998).

The DEIR fails to consider the impacts of avulsion at all and fails to provide adequate analysis or mitigation for the impacts to the San Joaquin River embankment from blasting or ongoing operations. Instead, the DEIR improperly minimizes the potential impacts of the project to this sensitive ecosystem and defers important mitigation contingency planning. The DEIR's

failure to adequate analyze or mitigate impacts that could have severe consequences not only for the local area but also for the entire San Joaquin River system is an egregious oversight and a clear violation of CEQA.

Comment 65-19 Cont.

V. The DEIR Does Not Adequately Disclose, Analyze, or Mitigate Impacts to Surface Water Quality

Comment 65-20

The San Joaquin River is the second largest river in California (Laćan & Resh, 2016). It comes from headwaters in the central Sierra Nevada, including in Yosemite and Kings Canyon National Parks, and the Ansel Adams Wilderness. Snowmelt flows through the upper reaches of the River into Millerton Lake, a lake created by the Friant Dam that supplies irrigation water to the Central Valley. Past the dam, the River flows north of Fresno and then joins the Sacramento River and numerous tributaries to form the Sacramento- San Joaquin Delta (the "Delta.") The Delta is the hub of the California water system and the most valuable estuary and wetland ecosystem on the west coast.

The San Joaquin River has earned the title "hardest working river in California" by irrigating thousands of acres of cropland, providing drinking water for millions of people, and supporting fisheries and vast wetlands.

a. The DEIR Does Not Establish by Substantial Evidence that The Project Will Not Degrade Surface Water Quality.

The Plant Site and the Quarry Site are directly adjacent to the San Joaquin River. Dry Creek passes 475 feet to the north of the Plant Site on its way to the River. (DEIR at 4.10-15.) A river water delivery ditch directly connects the Plant Site to the River. (DEIR at 4.4-7.) Both the Plant Site and the Quarry Site have standing ponds of polluted industrial wastewater under current operating conditions. (DEIR at 4.10-8.) The surface water storage on the site will expand as a result of the proposed Project. At the Quarry Site, the amount of water that must be pumped out of the excavation site and stored on site will increase as the mining depth increases. (DEIR at 4.10-8.) At both the Plant Site and the Quarry Site, new ponds "may" be formed as mining progresses. The project will add groundwater recharge trenches at the boundaries of the Plant Site. All this water will be moved and stored on a site that is adjacent to the River and connected to it via surface water, but the DEIR dismisses without evidence the idea that this could lead to any surface water contamination.

The DEIR offers no estimate of the quality of the retained industrial wastewater created by the Project that will become surface water on-site. It merely reports on the current surface water quality, without considering how the intensified mining operations proposed by the Project might affect that water quality. The Project will increase the intensity of existing operations and the magnitude of blasting, and add entirely new pollutants like asphaltic oil. (DEIR at 2-44.) By completely neglecting to analyze or disclose this impact, the EIR fails to provide information regarding the project's significant environmental impacts that is sufficient to allow decision-makers and the public to understand the environmental consequences of the project, in violation of CEQA. (*Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 520; *Laurel Heights Improvement Ass'n v Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 404; See CEQA Guidelines § 15151.)

And even under current conditions, the on-site surface water is toxic. The current surface water has a conductivity level roughly ten times higher than the San Joaquin River. This conductivity level violates the drinking water standard in the basin plan. Conductivity is a general gauge of overall water quality. A higher level commonly indicates a discharge of some pollutant and a resulting harm to the overall health of the water body and the associated ecosystem (EPA, 2025). Surface water at the plant site also has significant arsenic, lead, and iron—none of which are present in significant levels in the San Joaquin River. The arsenic level at the Plant Site is 20 times the drinking water limit. The lead level is 30 times the limit. The iron level is a staggering 1,590 times above the limit. (DEIR at 4.10-24.) The DEIR claims that this toxic water—which will only get more toxic with intensified mining—will not have any impacts because the Project does not "propose" to discharge the water into the San Joaquin River. But a CEQA review is not limited to what the Project proposes; it extends to the Project's reasonably foreseeable impact. Commingling between the dirty surface water on site and the San Joaquin River is in fact reasonably foreseeable through flooding and through the confluence of the river supply channel and Little Dry Creek.

Comment 65-20 Cont.

b. The DEIR Does Not Properly Disclose Current Surface Water Quality Conditions.

Comment 65-21

The DEIR omits water quality testing necessary to understand baseline conditions and to predict likely environmental impacts. First, the surface water at the Quarry Site was not tested for lead or arsenic. (DEIR at 4.10-26.) Those two toxic metals were present in the surface water at the Plant Site at very high levels. (DEIR at 4.10-24.) Because the Project is documented to release these metals into surface water, it is inexcusable not to test for them at the Quarry Site. The County must conduct this testing.

Second, the DEIR does not test—indeed, does not analyze at all—water quality in the river supply channel. This waterway directly connects the San Joaquin River to the Plant Site, and so understanding its water quality is critical to understanding how the Project might affect water quality in the River. The DEIR asserts that water flows through the channel from the River to the Plant Site and assumes that the channel cannot introduce contamination into the River. However, without evidence, it is impossible to know if contaminates from the site are present in the channel, and, if so, if they make it to the River. The channel is an acknowledged interaction site between River water and site surface water. The failure to disclose adequate, up-to-date information about the current level of contamination means that the EIR does not establish environmental baseline, invalidating its analysis. (*Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 320 [holding that use of the proper baseline is critical to a meaningful assessment of a project's environmental impacts], *Save Our Peninsula Comm. v Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 119.)

c. The DEIR Dismisses the Threat of Surface Water Quality Impacts from Flooding Without Evidence.

Comment 65-22

Climate change is increasing the risk of extreme precipitation events and resulting floods in California. In particular, anthropogenic warming increases Sierra snowmelt significantly—likely by 200 to 400% during storms (Swain et al., 2018). Scientists estimate that this phenomenon may have already contributed to the failure of the Oroville Dam in 2017 when historical warming increased runoff in the Feather River Watershed by over a third. (Huang et

al., 2018; Huang & Swain, 2022). Hydrological modelling done by UCLA and the National Center for Atmospheric Research projects that the runoff-based flood risk has already doubled from historical averages and will increase further with every degree of warming. The increased flooding risk from both runoff and from sea level rise means that the amount of land in California considered to be at risk from a flood has already doubled relative to FEMA official 100-year flood projections (The Precipitation Problem: 8th Annual Risk Assessment, 2023).

Comment 65-22 Cont.

The DEIR acknowledges that the FEMA floodplain delineation based on studies from 1981 and 1998 is out of date, as it certainly is. (DEIR at 4.10-16; Figure 4.10-1.) But instead of updating the delineation with current information about the increased frequency and magnitude of flooding in California under climate change, the DEIR purports to update it based only on changed site topography. (DEIR at 4.10-16.) This results in a current site floodplain that is smaller than what FEMA delineated in 2009—a scientific implausibility that the DEIR supports with no evidence. Based on this supposed floodplain, the DEIR concludes that the San Joaquin River floodplain does not enter the Plant Site or the Quarry Site and therefore that there is no significant risk from flooding. (DEIR at 4.10-118-19.) This is contrary to the evidence and is not supported by adequate analysis. Because floodplains are expanding, not contracting, under climate change, the Project site likely is at risk of inundation from flooding in the watershed. In the event that a flood that reaches the Project site, the toxic industrial runoff stored as surface water would enter the San Joaquin River, and cause health and environmental damage everywhere the floodwaters reach.

The DEIR admits that excessive water released rapidly from the Friant Dam could result in flooding of the Quarry Site or Plant Site. However, it says that it is not necessary to consider this risk because it is "unforeseen." The DEIR does not cite any evidence to support the contention that rapid releases from the dam cannot be foreseen. In fact, the only citation in the paragraph is to the Fresno County Multi-Jurisdictional Hazard Mitigation Plan which actually estimates a "high" vulnerability to dam failure and flood in Fresno County. (The vulnerability ranking reflects the potential impact and the likelihood of future occurrences.) Just two years ago, heavy rains created record-breaking spillovers at the Friant Dam (Kassandra Gutierrez, 2023). Moreover, dam failures are increasing across the US and in California due to aging infrastructure and intensifying precipitation (Hwang & Lall, 2024; Mallakpour et al., 2019). By dismissing this threat without evidence, the DEIR violates CEQA.

d. The DEIR Relies on Improperly Deferred Mitigation for Surface Water Quality Impacts.

Comment 65-23

The DEIR repeatedly insists that stormwater runoff from the Project will be contained within the Project sites, citing no evidence besides the Surface Runoff and Drainage Plan. However, the Surface Water and Drainage Plan—meant to present "the overall conceptual approach for managing storm drainage"—is nothing more than an aspirational plan to make a plan at a later date. The Plan consists of statements like, "off-site runoff will not commingle with active project area runoff" and "stormwater runoff will be captured by the open water ponds." (DEIR at 4.10-84-85.) This is not a management plan and does not approach an effective mitigation strategy. The DEIR says that best management practices for stormwater treatment, erosion protection and stormwater monitoring will be provided in the Stormwater Pollution Prevention Plan that will be developed and implemented later, out of public view. (DEIR at 4.10-84.)

The County may not defer mitigation to a later date unless the EIR provides specific reasons why a mitigation plan cannot be developed now and provides specific performance measures to evaluate its success. (14 Cal. Code Regs. §15126.4(a)(1)(B); *San Joaquin Raptor Rescue Ctr. v County of Merced* (2007) 149 CA4th 645, 670; *Cleveland Nat'l Forest Found. v San Diego Ass'n of Gov'ts* (2017) 17 CA5th 413, 442.) An EIR is inadequate if "[t]he success or failure of mitigation efforts may largely depend upon management plans that have not yet been formulated, and have not been subject to analysis and review within the EIR." (*San Joaquin Raptor, supra*, 149 Cal.App.4th at p. 670.) As courts have pointed out "[f]undamentally, the development of mitigation measures, as envisioned by CEQA, is not meant to be a bilateral negotiation between a project proponent and the lead agency after project approval, but rather, an open process that also involves other interested agencies and the public." (*Communities for a Better Environment v. City of Richmond*, 184 Cal. App. 4th 70, 93.)

Comment 65-23 Cont.

Here, the County proposes exactly that—a stormwater mitigation plan that will be developed after Project approval, with no guarantee of success, for no clear reason. In the meantime, the DEIR asserts without evidence that stormwater will be entirely contained on the site, making the DEIR inadequate. The EIR has not established that this vague, undefined plan will effectively reduce the impact of this Project o surface water to less than significant. (*Banning Ranch Conservancy v. City of Newport (2012) 211 Cal.App.4th 1209, 1232-34*.)

e. The DEIR Ignores Possible Impacts from the River Supply Channel without Disclosure or Analysis.

Comment 65-24

Given that the river supply channel is an acknowledged direct connection between surface water on site and the San Joaquin River, the DEIR must be revised to include a full analysis not just of its water quality, but of its slope, flow characteristics, path to the River, and interactions with Dry Creek. Under Project conditions, the amount of water drawn from the River through the channel will decrease from 295 acre-feet per year to 125 acre feet per year. (DEIR at 4.19-9.) The DEIR offers no way to understand the effect of that change, or if a lower water level in the channel might allow water to move from the Project site to the River.

A "conclusory discussion" of a significant environmental impact makes an EIR "inadequate as an informational document" as a matter of law. (*Sierra Club*, *supra*, 6 Cal.5th at p. 514.) An EIR must provide information regarding the project's significant environmental impacts that is sufficient to allow decision-makers and the public to understand the environmental consequences of the project. (*Id.* at p. 520; *Laurel Heights Improvement Ass'n v Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 404; See CEQA Guidelines § 15151.) The document must include enough detail to enable the public "to understand and to consider meaningfully the issues raised by the proposed project." (*Id.* at 516 (citation omitted).) By omitting discussion of the river supply ditch almost entirely, the DEIR is inadequate.

VI. The DEIR Fails to Adequately Assess and Mitigate Impacts to Groundwater Quality and Groundwater Flow.

Comment 65-25

The DEIR's inadequate analysis of the Project's impacts on groundwater quality, groundwater flow, and groundwater supply lacks substantial evidence and overlooks several reasonably foreseeable impacts. CEQA requires adequate assessment of impacts associated with acquiring and providing water to a Project. (See *Vineyard Area Citizens for Responsible Growth,*

Inc. v. City of Rancho Cordova (2007) 40 Cal.4th 412, 434 [hereinafter "Vineyard Area Citizens"].) This assessment must include both direct and indirect environmental impacts resulting from the permanent allocation of water to a proposed project. (*Vineyard Area Citizens*, *supra*, 40 Cal.4th at 434.) Here, the DEIR overlooks not only groundwater supply, but groundwater contamination and impacts to groundwater flow from the Project's substantial groundwater pumping and blasting. It further fails to support all mitigation measures with substantial evidence and fails to assess consistency with the North Kings Groundwater Sustainability Plan.

Comment 65-25 Cont.

a. The DEIR Fails to Adequately Assess Impacts on Groundwater Quality.

The DEIR fails to adequately assess impacts on groundwater quality and support its conclusions of "less than significant impacts" for several reasons. First, the DEIR fails to mention, let alone adequately discuss, potential cross-contamination between aquifers due to the 600-foot depth of the Quarry site. The 2025 North Kings GSP provides that it is possible for the Project to tap into a separate aquifer at 600 feet below ground surface, which is the maximum depth of this project (North Kings Groundwater Sustainability Agency, 2025). This lower aquifer could have several different contaminants, or the same as those identified, at higher concentrations, impacting both surface water quality and groundwater quality as the Project pumps this water into ponds and trenches.

Relatedly, the DEIR fails to support its contention that "[b]ecause there would be no change in the management of the Northeast Pond, no change in the existing water quality in the Northeast Pond is anticipated." (DEIR at 4.10-89.) Considering the massive increase in pumping at the Quarry site, and thus (1) the increase in groundwater that will end up in the pond, and (2) the water potentially originating from a different aquifer with different contaminants in different concentrations, the EIR must provide more than simply an assumption that the water quality at the Northeast Pond will remain unchanged.

Comment 65-26

Second, the DEIR fails to support the assumption that leaving contaminated water in ponds throughout the Project site will not significantly impact groundwater quality. The DEIR identifies several groundwater quality concerns, including arsenic, nitrate, iron, manganese, and hexavalent chromium (DEIR at 4.10-42) and admits that iron, manganese, and conductivity already exceed their maximum contaminant levels in the Plant Site silt pond and three Quarry Site ponds. (DEIR at 4.10-42, 88.) It further admits that an iron and manganese rich pond that will form at the Plant Site following Phase I could impact groundwater quality. (DEIR at 4.10-95.)

Comment 65-27

However, the DEIR simply assumes the ponds will not impact groundwater quality. Appendix G provides the only explanation for this assumption: "Concentrations of total iron, total manganese, and total arsenic exceeded the respective MCLs, indicative of metals in the sediment part of the water samples. These higher concentrations aren't indicated to pose a threat to groundwater quality, because of filtration as some of the silt pond water percolates to groundwater." (Appendix G-3 at 26) Contrary to CEQA's requirement to support such contentions with "substantial evidence," nowhere does the DEIR support this conclusory statement that percolation will essentially eliminate all groundwater quality concerns. (See *Sacramento Old City Assn. v. City Council* (1991) 229 Cal.App.3d 1011, 1027.)

Relatedly, the DEIR further concludes, without explanation, that leaching from the Plant Site pond into groundwater will essentially stop after operations conclude, despite the Plant Site

reclaimed pond remaining full of contaminated water. The DEIR states that any leaching from the Plant site reclaimed pond will "likely" not occur. (DEIR at 4.10-95.) However, nowhere does the DEIR provide an explanation for this assumption.

Comment 65-27 Cont.

Third, the DEIR fails to provide any support for its contention that the groundwater pumped into ponds and trenches, and later reclaimed ponds, will not impact water quality in the San Joaquin River. For example, the DEIR explains that conductivity levels for four Plant Site wells exceeded the conductivity limit for the San Joaquin River below Friant Dam; however, it dismissed this impact because the Project will not discharge groundwater *directly* to the San Joaquin River. (DEIR at 4.10-43.) This, too, requires further assessment, as Appendix G states that "It is assumed that *half of the groundwater ditch recharge would flow to the San Joaquin River* or local groundwater beyond the project site," (Appendix G-3 at 35 [emphasis added]) and estimates that 145 acre feet per year will go from the trenches to the San Joaquin River or alluvium (over 47 million gallons). (Appendix G-4 at 86.) This is unsurprising, considering "[t]he recharge ditches would be located so as to have a maximum effect in two areas: 1) *near the river*, and 2) near a concentration of offsite wells to the southeast." (Appendix G-3 at 42.) Despite this assumption, nowhere does the DEIR assess impacts of high conductivity levels on groundwater and surface water, nor impacts of other contaminants on water quality in the San Joaquin River and local aquifers.

Comment 65-28

Furthermore, it remains reasonably foreseeable that flooding in the groundwater trenches and Project Site could contaminate the San Joaquin River. As described above, the DEIR admits that releases from the Friant Dam "could result in flooding of the Quarry site and/or plant site." (DEIR at 4.10 at 119.) The recharge trenches are just feet from the San Joaquin River (DEIR at 2-19), and again, Appendix G admits that "*half of the groundwater ditch recharge would flow to the San Joaquin River* or local groundwater beyond the project site." (Appendix G-3 at 35 [emphasis added].) This is a critical oversight and must be fully assessed.

Finally, despite these groundwater quality concerns, the DEIR relies on two unsupported mitigation measures to render these impacts less than significant. For the Plant Site pond specifically, the DEIR includes Mitigation Measure 4.10-5a. However, this mitigation measure requires only monitoring and only suggests a single mitigation strategy for just manganese and iron: "aeration or mechanical circulation of the water from the bottom of the pond to the surface of the pond" if iron and manganese levels persist for five years above their water quality standards (DEIR at 4.10-97-98.) Not only does this mitigation measure overlook other contaminants that could exceed standards in the pond, but it provides no support for the efficacy of aeration. This is impermissible, as substantial evidence in the record must support mitigation measures' effectiveness. (*Sacramento Old City Assn. v. City Council* (1991) 229 Cal.App.3d 1011, 1027.)

Comment 65-29

And for groundwater quality at the Quarry Site, the DEIR provides "Blasting Protocols" to prevent groundwater contamination from explosives. However, not only does this ignore other potential sources of contamination (e.g. cross contamination between aquifers), but the DEIR fails to explain how the list of Best Management Practices in Appendix H-6 will prevent groundwater contamination from explosives, as CEQA requires. (DEIR at 4.10-99-100.)

Comment 65-30

b. The DEIR Fails to Adequately Support Its Conclusions Regarding Impacts to Groundwater Flow.

Comment 65-31

First, the DEIR fails to support its estimate regarding how much groundwater will be diverted from its natural flow pattern and end up in the Project site excavations. The DEIR admits that "[s]everal communities and individual residences in the foothills and Sierra Nevada rely exclusively on groundwater from bedrock wells for their supply." (Appendix G-5 at 12.) And it explains that groundwater infiltration into the bedrock *does* occur and is dependent on the degree and nature of fracturing of the weathered rock and hard rock. (DEIR at 4.10-48.)

Comment 65-31 Cont.

However, despite impacts on groundwater in this bedrock and communities that rely on it, the DEIR failed to provide sufficient information on impacts of that groundwater ending up in the Project excavations. While Appendix G estimates average hydraulic conductivity through hard rock as 1.4 gallons per day per foot (Appendix G-4 at 90), and estimates that 195 acre feet will end up in the Quarry Site annually, Appendix G acknowledges that "the thickness of the water producing fractures [in the bedrock] is unknown." (Appendix G-4 at 90.) This is critical information missing from the groundwater flow analysis. The Project could capture far more groundwater, diverted from its natural flow path, than the DEIR acknowledges.

Second, DEIR fails to take into account the potential for blasting and drilling to impact the thickness of the fractures in the hard rock. Thicker and more numerous fractures in the hard rock from blasting would result in more groundwater reaching the Project site after passing through the alluvium, drawing down aquifers potentially far beyond the Project site. Despite this potential, the EIR concludes that there will be "no significant change in the volume flowing through alluvium and weathered rock" than before the quarry deepens. (DEIR at 4.10-114.) The EIR needs to assess this impact and assess the potential for more groundwater to flow into the Project site as a result of thicker fractures after blasting.

Comment 65-32

Third, the DEIR fails to explain the flow patterns of groundwater within the bedrock. Rather, Appendix F-2 explains that "the 7 groundwater monitoring wells installed within the bedrock that have been recently installed do not provide information about the continuity of the groundwater flow … [or] distribution of aquifers and aquitards." (Appendix F-2 at 9.) In other words, the DEIR lacks critical information about flow that should affect the monitoring well placement 600 feet below ground in the bedrock. The EIR requires this critical information, as clustered monitoring wells should monitor groundwater both upstream and downstream with screening intervals at different depths to capture representative samples of contaminants. As a result, the final EIR must contain a full study modeling groundwater flow in the bedrock and place monitoring wells accordingly.

Comment 65-33

c. The DEIR Fails to Adequately Assess the Project's Impacts on Groundwater Supply.

Comment 65-34

The Project will require significant dewatering, first during excavation, then continuously as groundwater flows into the excavation pits. The DEIR estimates that half of the groundwater pumped out of the excavations will go to recharge trenches along the perimeter of the project site to "minimize drawdown" near a number of offsite wells and may also be used for dust control and wash water. (DEIR at 4.10-86, 87.) The rate of dewatering at the Plant Site will reach 1,610 acre feet per year (DEIR at 4.10-86) and at the Quarry Site 320 acre-feet per year under current conditions, 375 acre-feet per year after 30 years of mining, and 405 acre-feet per year at the end of mining. (Appendix G-5 at 45.) The projected drawdown would be approximately 90 feet at the edge of the quarry pit, 45 feet 2,000 feet from the pit, and 15 feet at 4,000 feet away. (DEIR at

4.10-107.) Dewatering will result in impacts to groundwater hydrology, altered flow regimes, and reduced groundwater levels. Comment 65-34 Cont.

Despite these critical impacts, the DEIR relies solely on recharge trenches to prevent aquifer depletion from additional acres of impervious surfaces at the Quarry Site, groundwater pumping, and the cone of depression. (DEIR at 5-23-24.) The DEIR explains "it is *most likely* that the recharge operations would be conducted throughout the mining and active dewatering period as the primary means to manage the water pumped from excavation." (DEIR at 4.10-107 [emphasis added].) In other words, the DEIR concludes that because some water pumped from the excavation area would end up in recharge trenches and ponds, "there [will] not be a substantial reduction in local groundwater volumes during mining." (DEIR at 4.10-102.)

Nowhere does the DEIR provide evidence supporting this conclusion. Instead, Appendix G estimates that there will be about 195 acre feet of outflow from the recharge ditches annually (compared to the maximum dewatering from the Plant Site of 1,610 acre feet per year and 405 acre feet from the Quarry Site per year.) (Appendix G-4 at 86.) Furthermore, the DEIR admits that only about half of the water taken from the excavation during dewatering will go to the recharge trenches (DEIR at 4.10-87), only half of which will flow to the San Joaquin River *or* local aquifers. (Appendix G-3 at 35.) Thus the DEIR's reliance on recharge trenches is not supported by substantial evidence.

Additionally, nowhere does the DEIR discuss the possibility of subsidence as a result of the massive pumping the Project will require. Instead, it dismisses this impact with one sentence, explaining that because the project will drill into hard rock there will be no subsidence. (Appendix F-1 at 14, F-2 at 8.) However, the Project Description provides that "remaining alluvial deposits on approximately 117.6 acres of the 138.5-acre Plant Site would be mined to a depth of approximately 85 feet below ground surface." (DEIR at 2-3, 2-29.) This will require substantial dewatering at the Plant site, which could result in subsidence. Subsidence, if it were to occur, could also have additional impacts, including a potential increase in flood risk. The EIR must provide more than one sentence to support its conclusion that subsidence will not be a significant impact. Comment 65-35

The only mitigation measures provided for the reasonably foreseeable drawdown of water around the Project site are Mitigation Measure 4.10-10a, "Quarry Site Groundwater Adaptive Management Program" and Mitigation Measure 4.10-10b, "Quarry Site Groundwater Adaptive Management Program Funding Mechanism." However, neither provide mitigation measures beyond the recharge trenches. Rather, they require only monitoring and vague "corrective measures" if drawdown goes beyond 15% of the baseline. (DEIR at 4.10-109.) The only specifics they provide is additional water diverted to recharge trenches, which is already part of the Project and the sole strategy identified in the DEIR for mitigating drawdown. (*Id*.) This is insufficient under CEQA, which requires that a lead agency adopt concrete, specific, and enforceable actions to mitigate significant impacts. (*California Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173); (See also *Federation of Hillside & Canyon Ass'ns v. City of Los Angeles* (2000) 83 Cal.App.4th 1252, 1261 [mitigation measures must be "fully enforceable through permit conditions, agreements, or other measures" so "that feasible mitigation measures will actually be implemented as a condition of development."].) Comment 65-36

d. The DEIR Fails to Acknowledge the Potential of Pit Failure and Its Impacts on Groundwater Quality and Flow. Comment 65-37

Nowhere does the DEIR even mention, let alone meaningfully discuss, impacts to groundwater quality and flow from potential pit failure. Instead, the DEIR asserts that mitigation through monitoring will reduce the impact of pit failure at both sites to less than significant, despite the Quarry Site's location just 200 feet from the San Joaquin River. (DEIR at 4.7-30-37, 2-17.) However, in reaching this conclusion, the DEIR admits that it lacks critical information to support its slope stability conclusions: (1) it lacks boring data to develop reliable kinematic models; and (2) it lacks information about local groundwater conditions that could affect kinematic stability of portions of mining slopes, including artesian conditions, preferential seepage paths, and piping conditions. (DEIR at 4.7-34.) Specifically, Appendix F-2 explains that "the 7 groundwater monitoring wells installed within the bedrock that have been recently installed do not provide information about the continuity of the groundwater flow … [or] distribution of aquifers and aquitards, and consequently they do not provide sufficient information key to assessing pore pressure distribution within the slope stability model." (Appendix F-2 at 9.) Without this critical information, the DEIR fails to support its conclusions regarding slope stability with substantial evidence and overlooks grave potential impacts to groundwater quality and flow.

Comment 65-37 Cont.

The DEIR promises to mitigate the impacts of slope instability at the Quarry Site with a Quarry Site kinematic analysis and another study on groundwater conditions with the potential to impact stability. (DEIR at 4.7-36-37.) But this is insufficient under CEQA, which requires binding, enforceable mitigation *before* Project approval. (Guidelines § 15126.4, subd. (a)(2)). "[A]n agency goes too far when it simply requires a project applicant to obtain a [] report and then comply with any recommendations that may be made in the report." (*Ctr. for Biological Diversity v. Dep't of Fish & Wildlife* (2015) 234 Cal. App. 4th 214, 240); (*Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777, 793.) These reports regarding potential slope instability cannot be deferred until a later stage; they must be completed before Project approval.

e. The DEIR Fails to Adequately Assess Consistency with the North Kings Groundwater Sustainability Plan.

Comment 65-38

Finally, Appendix G of CEQA provides that a project has significant impacts if it conflicts with or obstructs a sustainable groundwater management plan. (DEIR at 4.10-83.) However, the DEIR incorrectly claims that it need not assess consistency with the North Kings Groundwater Sustainability Plan (GSP) (or any other GSP) because it is not part of the North Kings GSA area. (DEIR at 4.10-112-13.) Specifically, it claims that the top of the hard rock unit at the Quarry site is the top of the plutonic bedrock: a depth at which the North Kings GSA does not address. (DEIR at 4.10-112.) However, the boundary modification request to Department of Water Resources (DWR) that *may* draw this boundary has not yet been approved. (North Kings 2025 GSP at 3-33.) Thus, at this time the DEIR must assess consistency with the GSP, as it is admittedly "located within the jurisdiction of the North Kings GSA," in a critically over-drafted subbasin. (DEIR at 5-23.)

As a result of this incorrect assumption, the DEIR's assessment of consistency with the GSP is inadequate. The DEIR even admits elsewhere that "[t]the use of groundwater by the proposed project and cumulative projects in a critically over-drafted groundwater basin could also lead to conflict or obstruction of the North Kings GSA Groundwater Sustainability Plan, which is a potentially significant cumulative impact." (DEIR at 5-23.) However, the DEIR

assures that Impact 4.10-18 fully assessed this conflict: an impact that does not exist in the DEIR. (DEIR at 5-23, 4.10-119 [impact 4.10-17 is the final in the section].) The EIR must include this assessment and support any consistency findings with substantial evidence.

Comment 65-38 Cont.

VII. The DEIR's GHG Analysis Is Inadequate and Misleading.

Comment 65-39

The Project will emit significant GHG emissions, which the DEIR obscures with an outdated baseline and an incorrect threshold of significance that ignores feasible mitigation and misrepresents the state's climate plans. The Project proposes to lock in intensive mining on the site for one hundred years, long past the time when California needs to achieve net zero emissions. Approving a Project of this scale without adequate consideration of GHG impacts is irresponsible and a violation of CEQA.

a. The Climate Crisis Is a Catastrophic and Urgent Threat to California.

A strong, international scientific consensus has established that human-caused climate change is causing widespread harms to human society and natural systems, and that climate change threats are becoming increasingly dangerous. The Intergovernmental Panel on Climate Change (IPCC), the leading international scientific body for the assessment of climate change, concluded in its 2023 Sixth Assessment Report that: "[u]nsustainable and unequal energy and land use as well as more than a century of burning fossil fuels have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850-1900 in 2011-2020." (IPCC, 2023). The increase in global surface temperature has resulted in sea level rise, increased frequency of extreme weather events, and has resulted in "irreversible losses" at the species and ecosystem levels. (IPCC, 2023). These findings were echoed in the United States' own 2023 Fifth National Climate Assessment, prepared by scientific experts and reviewed by the National Academy of Sciences and multiple federal agencies. The 2023 Assessment concluded that "[t]he global warming observed over the industrial era is unequivocally caused by greenhouse gas emissions from human activities–primarily burning fossil fuels" and long-term responses include "sea level rise, ice sheet losses, and associated disruptions to human health, social systems, and ecosystems." (US Global Change Research Program, 2023).

In its 2020 update, the National Academy of Sciences and the Royal Society concluded that climate change is largely a result of human activity, as "natural causes alone are inadequate to explain the recent observed changes in climate." (National Academy of Sciences & Royal Society, 2020). The additional carbon input from human activities has significantly disturbed the natural carbon cycle, resulting in an imbalance in the system that fosters global climate stability. (National Academy of Sciences & Royal Society, 2020). Based on observed and expected harms from climate change, in 2009 the U.S. Environmental Protection Agency found that greenhouse gas pollution endangers the health and welfare of current and future generations. (74 Fed. Reg. 66496 (Dec. 15, 2009) [U.S. EPA, Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act; Final Rule].) In 2021, EPA again recognized the critical nature of the climate crisis, stating that: "[t]he changing climate is affecting people's health and livelihoods and damaging infrastructure, ecosystems, and social systems in communities in every region of the nation." (US Environmental Protection Agency, 2021)

Comment 65-39 Cont.

These authoritative climate assessments decisively recognize the dominant role of greenhouse gases in driving climate change. In its 2023 Assessment Report, IPCC stated that "the extent to which current and future generations will experience a hotter and different world depends on choices now and in the near term." (IPCC, 2023). In order to prevent global warming from reaching an irreversible point, policies must be implemented to reach net zero CO2 emissions and achieve significant reductions in other greenhouse gases. (IPCC, 2023).

The impacts of climate change will be felt by humans and wildlife. Climate change is increasing stress on species and ecosystems—causing species-level changes in morphology, behavior, phenology, and geographic range shifts, and ecosystem-level changes such as the increasing frequency of extreme weather events, widespread changes in productivity, species interactions, and vulnerability to biological invasions (Weiskopf et al., 2020). Climate-change-related local extinctions are already widespread and have occurred in hundreds of species. (Wiens, 2016). Catastrophic levels of species extinctions are projected during this century if climate change continues unabated (Maclean & Wilson, 2011; Thomas et al., 2004; Urban, 2015). Conservation actions aimed at protecting biodiversity can slow the progression of climate change–the ecosystem services provided by biodiverse ecosystems are an integral part in the balanced functioning of our climate system (Shin et al., 2022).

Therefore, immediate and aggressive greenhouse gas emissions reductions are necessary to keep warming well below 2°C above pre-industrial levels. The IPCC Sixth Assessment Report and other expert assessments have established global carbon budgets, or the total amount of carbon that can be burned while maintaining some probability of staying below a given temperature target. According to the IPCC, "[t]he best estimates of the remaining carbon budgets from the beginning of 2020 are 500 GtCO2 for a 50% likelihood of limiting global warming to 1.5°C and 1150 GtCO2 for a 67% likelihood of limiting warming to 2°C." (IPCC, 2023). Additionally, "[i]f the annual CO2 emissions between 2020-2030 stayed, on average, at the same level as 2019, the resulting cumulative emissions would almost exhaust the remaining carbon budget for 1.5°C (50%), and deplete more than a third of the remaining carbon budget for 2°C (67%)." (IPCC, 2023). As of 2023, climate policies by the world's countries would lead to an estimated 2.7°C of warming, and possibly up to 3.4°C of warming, well above the level needed to avoid the worst dangers of climate change (Climate Action Tracker, 2023).

The United States has contributed more to climate change than any other country. The U.S. is the world's biggest cumulative emitter of greenhouse gas pollution, responsible for 24 percent of cumulative global CO2 emissions from 1850 to 2022, and the U.S. is currently the world's second highest emitter on an annual and per capita basis (Friedlingstein et al., 2023; Friedrich et al., 2023). U.S. climate policy is wholly inadequate to meet the international climate target to hold global average temperature rise to well below 2°C above pre-industrial levels to avoid the worst dangers of climate change. Current U.S. climate policy has been ranked as "insufficient" by an international team of climate policy experts and climate scientists which concluded: "[w]ithout additional, drastic emission reductions measures, the US will still be far from meeting its domestic climate target, let alone get its emissions onto a 1.5°C trajectory." (Climate Action Tracker, 2023). In its 2018 Special Report on Global Warming of 1.5°C, the IPCC—the leading international scientific body for the assessment of climate change—described the devastating harms that would occur at 2°C warming. The report highlights the necessity of limiting warming to 1.5°C to avoid catastrophic impacts to people and life on Earth (IPCC, 2018). The report also provides overwhelming evidence that climate hazards are more urgent and

more severe than previously thought, and that aggressive reductions in emissions within the next decade are essential to avoid the most devastating climate change harms.

Comment 65-39 Cont.

In California, climate change will transform our climate, resulting in such impacts as increased temperatures and wildfires, and a reduction in snowpack and precipitation levels and water availability (Turco et al., 2023). In response to inadequate action on the national level, California has taken steps through legislation and regulation to fight climate change and reduce statewide GHG emissions. Enforcement and compliance with these steps are essential to help stabilize the climate and avoid catastrophic impacts to our environment. California has a mandate under AB 1279, the California Climate Crisis Act, to achieve net zero GHG emissions by no later than 2045, and achieve and maintain net negative GHG emissions thereafter, and to ensure that by 2045, statewide GHG emissions are reduced to 85% the level in 1990. (AB 1279 2022.) In 2019, Governor Newsom issued an executive order to leverage state investments to further California's climate goals (Executive Order N-19-19 (2019).) Newsom has continued to issue climate-related executive orders, such as a 2020 order requiring that, by 2035, all passenger vehicles will be zero-emission, in addition to other motor vehicle emission goals. (Executive Order N-79-20 (2020).) Through these bills and orders, California has laid a path that may allow the state to achieve tangible climate solutions, but there is still work to be done.

Although some sources of GHG emissions may seem insignificant, climate change is a problem with cumulative impacts and effects. (*Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, (9th Cir. 2008) 538 F.3d 1172, 1217 ("the impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis" that agencies must conduct).) One source or one small project may not appear to have a significant effect on climate change, but the combined impacts of many sources can drastically damage California's climate as a whole. Therefore, project-specific GHG emission disclosure, analysis and mitigation is vital to California meeting its climate goals and maintaining our climate.

b. The GHG Analysis Is Invalidated by the Use of an Unsupported Baseline.

Information provided in the EIR is inadequate to establish a reliable baseline of existing GHG emissions at the Project site. Under CEQA, an environmental review document must evaluate the potential environmental impacts of the project as compared to the existing environmental conditions (the "baseline"), so that the Project's impacts can be meaningfully analyzed and compared to alternatives. (CEQA Guidelines § 15125(a); see *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 952; *Neighbors for Smart Rail v. LA County Metropolitan Transit Authority* (2013) 57 Cal.4th 310, 315.)

The DEIR uses production records from the year 1998 as a baseline for this Project. (DEIR at 4.8-30.) It makes no attempt to explain why records from twenty-six years ago are an accurate report of current environmental conditions. Especially given that the last twenty-six years have seen tremendous progress on emissions reductions technologies and climate regulation, it is very likely that emissions from 1998 drastically overstate emissions from the facility today. By comparing the Project's projected emissions against an inflated baseline, the increase in emissions over baseline conditions caused by the Project will be incorrectly understated. (*Communities for a Better Env't v South Coast Air Quality Mgmt. Dist.* (2010) 48 C4th 310, 315.) The DEIR must be revised to compare the Project's GHG emissions against an accurate baseline and recirculated.

c. The EIR's Threshold of Significance Forecloses Consideration of Foreseeable GHG Impacts and Is Not Supported by Substantial Evidence.

Comment 65-40

A lead agency's selection of a threshold of significance must be supported with substantial evidence. Moreover, a determination that an environmental impact complies with a particular threshold of significance does not relieve a lead agency of its obligation to consider evidence that indicates the impact may be significant despite compliance with the threshold. (CEQA Guidelines § 15064(b)(2).) If evidence shows that an environmental impact might be significant despite the significance standard used in the EIR, the agency must address that evidence. (*Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1111.)

i. The DEIR Rejects Air District Guidance Without Evidence.

Comment 65-41

The San Joaquin Valley Air Pollution Control District ("SJVAPCD"), which has jurisdiction over the Project, provides guidance on evaluating GHG emissions under CEQA which the DEIR opts to ignore. (DEIR at 4.8-27.) It is not necessarily clear at this stage that the SJVAQMD threshold would adequately capture the significant impacts of the Project. A recirculated DEIR would have to provide substantial evidence to establish that the SJVAPCD threshold, or any threshold it opted to use, is sufficient. But dismissing a threshold that the local air district recommends, that does include performance standards directly relevant to this type of Project, with conclusory statements and no evidence falls short of the level of disclosure required under CEQA. disclose the analytic route the . . . agency traveled from evidence to action and is thus not sufficient to allow informed decision making." (*Vineyard Area Citizens for Responsible Growth*, 40 Cal.4th at p. 445 [A DEIR must "disclose the analytic route the . . . agency traveled from evidence to action."].)

The threshold recommended by SJVAPCD is that Projects must either implement Best Performance Standards or achieve a 29% reduction in emissions compared to business as usual. The DEIR claims that this policy adopted by the local air district, "does not apply to the proposed project for a number of reasons." But those reasons are unsupported by substantial evidence or reasoning. First, the DEIR notes that Fresno County is the lead agency for the Project. However, Fresno County can still use a threshold adopted by the local air district–-in fact, this is exactly how it often works. (See *Center for Biological Diversity v Department of Fish & Wildlife* (2015) 62 C4th 204, 230 [suggesting air district numerical thresholds as one possible approach].) Second, the DEIR claims that the passage of cap-and-trade in 2010 somehow makes the Air District threshold adopted in 2009 irrelevant. This is a misunderstanding of CEQA and cap-and-trade, as discussed further below. The passage of cap-and-trade did not displace local authority to regulate land use projects, and it certainly did not supersede CEQA analysis for projects that *are not subject* to cap-and-trade. The DEIR thus ignores an applicable threshold without evidence.

The DEIR likewise rejects the best performance standard required by the SJVAQMD threshold, with inadequate explanation. (DEIR at 4.8-34.) The air district published performance standards for Continuous Mix Asphalt Plant Dryers in 2010 that would reduce their GHG emissions by 13.1% to 17.2%. The DEIR says that "certain features" of the standard are "not feasible." The only elaboration here is the claim that requiring the facility to use warm mix asphalt is not feasible because the mix design is not always under the control of the operator.

This assertion stops far short of substantial evidence. It does not explain why mix design would not be controlled by the operator or who would control it. Nor does it address why other aspects of the best performance standard could not be adopted. Comment 65-41 Cont.

Instead, the DEIR rejects SJVAQMD guidance entirely in favor of a threshold adopted by the South Coast Air Quality Management District, but its application of that threshold is invalidated by the same misunderstanding of cap-and-trade that led it to incorrectly reject the SJVAQMD threshold.

ii. The Cap-and-Trade Program Does Not Alter CEQA or Relieve Lead Agencies of their CEQA Responsibilities.

Comment 65-42

The DEIR relies on cap-and-trade compliance to minimize the significance of the Project's emissions. It does this without answering the most fundamental question—whether the Project is in fact subject to cap-and-trade. Petroleum refineries, which includes facilities that produce asphalt,[4] are included if they produce over 25,000 MT CO_2e per year. (CARB, 2012). The only information the DEIR provides on current GHG emissions at the facility is the "baseline" figure from 1998. As discussed above, this is inadequate information and the DEIR must provide an actual baseline of current conditions or explain why the 1998 data is a reasonable approximation.

However, if that baseline does reflect current conditions, then the facility as currently operating is not subject to cap-and-trade. But the DEIR goes on to estimate the proposed Project's estimated emissions at 31,812 MT CO_2e, so, presumably, the facility would be subject to cap-and-trade after expansion. (DEIR at 4.8-32.) That would mean that the Project would be given an allowance that permitted a certain amount of total GHG emissions. If the Project's total emissions were less than that, it could trade the excess to other covered entities or bank them for later. If it wanted to emit more than the allowed amount, it would have to purchase credits to allow that.

But none of this is what the DEIR says. Instead, it says that *other* entities—namely, electricity and transportation fuel suppliers—are covered by cap-and-trade. (DEIR at 4.8-32.) Therefore, the DEIR ignores all the GHGs emitted by the Project's use of electricity and transportation fuel on the theory that cap-and-trade makes those emissions invisible to CEQA. These ignored emissions total 9,356 MT CO_2e, almost a third of the Project's total emissions. (DEIR at 4.8-33.) The remaining emissions, from the asphalt dryer and asphalt oil heater, the DEIR says are not covered by cap-and-trade. Because the asphalt dryer and oil heater will emit 8,508 MT CO_2e and that number is below the SCAQMD's significance threshold, the DEIR concludes the Project will not have significant GHG impacts. (DEIR at 4.8-34.

This analysis is riddled with errors and inconsistencies. As an initial matter, the DEIR must explain why the Project—a petroleum refinery that will emit over 25,000 MT CO_2e —is not itself a covered entity. Splitting the Project's emissions between some that are covered by cap-and-trade at some point upstream and others that are not covered does not make sense for a Project that should be complying with cap-and-trade in its own right, for its own total emissions.

If the Project is indeed not subject to cap-and-trade, then the cap-and-trade regulation does not cover any of its emissions, or excuse any of them from being considered under CEQA.

[4] An entity is covered if it "has one or more of the processes or operations" that define a covered entity. That means that an entity that produce asphalt, like the Project, are covered entities even if they also do other things. (CARB 2012.)

For one thing, it is not true that all electricity and transportation fuel suppliers are necessarily covered; most types of suppliers are only covered if they emit more than 25,000 MTs CO2e. The DEIR's claim that all electricity and transportation fuel used by the Project will come from a covered entity is not supported by evidence.

Comment 65-42 Cont.

Further, even electricity or fuel supplied by a covered entity is not somehow immune from consideration under CEQA at the point of use. The DEIR misunderstands the function and purpose of the cap-and-trade regulation. The cap-and-trade regulation does not eliminate or mitigate emissions and it is far from the be-all-end-all of the State's plan to achieve climate goals. The DEIR claims that the lead agency has no responsibility to address emissions from combustion of transportation fuels and electricity that *this Project* will cause; it can merely point to marginal reductions that California will achieve on a statewide level through cap-and-trade. But the cap-and-trade program is just one of many complementary programs that require different actors to work in different ways to reduce emissions. Covered facilities must participate in cap-and-trade, and local governments must mitigate impacts of their land use decisions through CEQA. One responsibility does not discharge the other.

Under CEQA, a lead agency must consider the whole of the action and the entire underlying activity being approved, including parts of the project might be regulated by another entity. (14 Cal Code Regs §15378(a), (c)–(d); *Orinda Ass'n v Board of Supervisors* (1986) 182 CA3d 1145, 1171.) This approach is necessary to prevent piecemealing, a strategy where environmental considerations are concealed through a focus on individual parts that overlooks the whole. (*Bozung v LAFCO* (1975) 13 C3d 263, 283.) Here, the DEIR considers a Project that will emit 17,864 MT CO_2e over baseline and simply subtracts 9,356 MT CO_2e of those emissions in order to fall under the 10,000 MT significance threshold. All 17,864 MT CO_2e of these emissions are part of the same Project and must be considered together. To do otherwise is a violation of CEQA.

And the SCAQMD does not bless this approach in its significance threshold either, contrary to the DEIR's assertion. The threshold asks whether the project is consistent with a qualifying local GHG reduction plan that itself has been analyzed under CEQA. If it is, then the emissions are not significant. Cap-and-trade is a statewide plan, not local, and it was never analyzed under CEQA. Moreover, the DEIR claims *it does not apply to the Project*. The SCAQMD threshold says that emissions are insignificant if the project as a whole complies with a local climate plan like a CAP; it does not contemplate separating emissions into categories based on other entities' compliance with state law and ignoring some of them. The Project cannot have it both ways: at times rely on the cap and trade program for its emissions and in other instances ignore cap and trade program.

Furthermore, in its 2022 Scoping Plan, CARB explicitly rejects exactly the approach the DEIR uses: (Scoping plan at 20-21.)

> While CARB has developed programs such as the… the Cap-and-Trade program to reduce sector-wide GHG emissions, these programs were not designed to directly mitigate individual land use development project emissions from a CEQA perspective. Therefore, claimed consistency with these programs should not be used to conclude that motor vehicle emissions from a land use development project are fully mitigated or that such projects are definitively consistent with the Scoping Plan—particularly where the project at issue is not itself directly regulated by these programs.

The DEIR bases its GHG analysis on a threshold of significance that ignores half of the Project's emissions based on a misunderstanding of cap-and-trade that has been plainly rejected by CARB. This is an inadequate threshold of significance that invalidates the DEIR. The DEIR must be revised to accurately consider the significance of the GHG impacts and recirculated so the public and decision makers receive correct, legally adequate information.

Comment 65-42 Cont.

VIII. The DEIR's Alternatives Assessment Is Inadequate.

Comment 65-43

The purpose of an EIR's discussion of alternatives is to identify ways to substantially reduce or avoid significant environmental impacts. (Laurel Heights Improvement Association v. Regents of Univ. of Cal. (1988) 47 C3d 376, 403.) Therefore, an EIR must focus on alternatives that avoid or substantially lessen the Project's significant environmental impacts. (Pub. Res. §21002; 14 Cal Code Regs §15126.6(a)–(b).) The EIR should analyze alternatives that offer substantial environmental advantages over the proposed project. (Citizens of Goleta Valley v. Board of Supervisors (1990) 52 C3d 553, 566); (see e.g. Cleveland Nat'l Forest Found. v. San Diego Ass'n of Gov'ts (2017) 17 CA5th 413, 436 [an EIR that did not consider alternatives that would reduce vehicle miles travelled was inadequate].)

CEQA requires the County to prepare an EIR that meaningfully considers the suggested alternatives in detail. (Friends of the Eel River, 108 Cal.App.4th at p. 873 [holding that because the discussion of alternatives omitted relevant, crucial information, it subverted the purposes of CEQA and was legally inadequate].) A proper alternatives discussion of alternatives should provide sufficient "information to the public to enable it to under, evaluate, and respond" to the agency's conclusion. Stated differently, the discussion should "contain facts and analysis, not just the agency's bare conclusions or opinions," and should include "meaningful detail." (Id. at 404-406.) As explained in Citizens of Goleta Valley v. Board of Supervisors (1988) 197 Cal.App.3d 1167, 1180-83, assertions that a particular alternative is economically infeasible simply because it would be more expensive or less profitable to the private applicant are not adequate. "In the absence of comparative data and analysis, no meaningful conclusions regarding the feasibility of the alternative could have been reached." (Id. at 1180-81.) The Court of Appeals added that:

> The fact that an alternative may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project.

(*Ibid.*) Because the DEIR fails to provide substantial evidence supporting a finding of infeasibility for any suggested alternatives, additional analysis is required before the County may approve the project. (Pub. Res. Code § 21002.)

a. The General Plan or Zoning Codes Do Not Require this Proposed Project.

Comment 65-44

The DEIR refused to consider the Reduced Operational Life Alternative and an alternative 200 feet below ground surface because it claims mining aggregate for a shorter duration would conflict with the existing state MRZ-2 classification and the Fresno County General Plan and zoning designations for the project sites, which identify the project sites as

having aggregate deposits of regional and local significance (Fresno County, 2024). Specifically, it states: "[T]he County eliminated the Reduced Operational Life Alternative from further consideration as an alternative in this EIR as it would reduce utilization of a known MRZ-2 resource in conflict with Fresno County's General Plan and does not fully meet some of the project objectives." (DEIR at 6-8.) However, nowhere does the General Plan state that MRZ-2 resources must be mined for a certain duration or at a certain depth: The General Plan states only that "[t]he County shall not permit land uses incompatible with mineral resource recovery within areas designated as Mineral Resource Zone 2 (MRZ-2)." (DEIR at 6-8.) This means the County could not, for example, permit an office building on an area with MRZ-2 resources.

Comment 65-44 Cont.

The DEIR also claims drilling to any shallower depth would clash with Goal OS-C of the Fresno County General Plan Mineral Resources Section of the Open Space and Conservation Element to conserve areas identified as containing significant mineral deposits for potential future use. (DEIR at 6-39.) However, this goal specifically seeks to conserve MRZ-2 resources while also "promoting the reasonable, safe, and orderly operation of mining and extraction activities within areas designated for such use, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated." (Fresno General Plan at 2-120-21.) This goal hardly requires 100 years of mining at 600 feet bgs when environmentally superior alternatives exist.

The DEIR's other excuses for refusing a shorter-duration Project similarly lack support. For example, the DEIR claims that "interim loss of this aggregate resource could cause future shortages of construction and aggregate material in the Fresno region," and "[b]ased on this analysis, the County eliminated the Reduced Operational Life Alternative from further consideration as an alternative." (DEIR at 6-8.) Nowhere does the DEIR support this contention regarding shortages, as CEQA requires.

b. The DEIR Fails to Support Its Conclusions Regarding Other Alternatives with Substantial Evidence.

Comment 65-45

Beyond its flawed reasoning regarding the General Plan, the DEIR bases its GHG emissions assessment of all shallower alternatives (Alternatives 2-5) on unsupported assumptions. It claims that shallower mining would have the same or worse GHG emissions because "[t]he development of new or expansion of existing quarries or the reopening of Rockfield Quarry would result in even greater GHG emissions as aggregate is hauled into Fresno County from further distances, as compared to continuing the operation of the Rockfield Quarry as planned under the proposed project." (e.g. DEIR at 6-34.) In other words, not drilling to the depth of 600 feet "would require the Applicant, or other aggregate suppliers, to search for another aggregate source to supply the County's regional needs. As a result, another mine could be developed elsewhere in the County with similar or additional significant environmental impacts and increasing the overall footprint of aggregate mines in the County." (e.g. DEIR at 6-39.)

Nowhere does it support this contention, as CEQA requires. To the contrary, the Aggregate Sustainability in California report, last updated by the California Geological Survey in 2018, provides that the Fresno region will need an estimated 305 million tons of aggregate for the next 50 years' worth of construction, while it already has 556 million tons of permitted aggregate reserves, nearly double the projected demand. (Clinkenbeard & Gius, 2018; p.5) As a result, it is fairly possible that aggregate demand will go down, rather than stay the same.

c. The DEIR Fails to Support Its Conclusions Regarding Alternative 5 as the Environmentally Superior Alternative.

Comment 65-46

CEQA requires that before approving a project with significant environmental impacts, the agency must make findings identifying the specific considerations that make the environmentally superior alternative infeasible. (Pub. Res. Code § 21081; Preservation Action Council v. City of San Jose (2006) 141 Cal.App.4th 1336, 1351-52.)

The County rejected Alternative 5 (400 feet bgs, with reduced annual sales), despite this alternative (and all other shallower, shorter duration alternatives) meeting at least partially all the project objectives because it determined that Alternative 5 is not "economically feasible" without any further explanation. But under CEQA, determining that an alternative "may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible." (Preservation Action Council, 141 Cal.App.4th at 1352.) Instead, the agency must present "evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the [alternative]." (Id.) This evidence may include, for example: total estimated costs, total projected income, total expenses, and the change in the per unit cost of a project that results from a project alternative or mitigation measure. (See Citizens of Goleta Valley v. Board of Supervisors (1988) 197 Cal.App.3d 1167, 1180.).) The findings of infeasibility must be supported by substantial evidence. (Id. at 1176-77.)

The DEIR contained no substantial analysis as to Alternative 5's economic feasibility. Nor did it even explain why it chose Alternative 5 as the "environmentally superior alternative. The DEIR states only that Alternative 5 would reduce impacts on air quality, biological resources, energy, groundwater quality and supply, mineral resources, noise, and transportation. However, this requires further support, especially considering there are no differences in the conclusions regarding those very impacts for alternative 3 (300 feet bgs.) And the only difference between Alternative 5 and Alternative 4 (300 feet bgs with additional setbacks) is that Alternative 5 would have reduced energy impacts, whereas the DEIR asserts, without any support, that energy demands under alternative 4 would remain the same because of its unsupported assertion that "demand for aggregate resources would remain." (DEIR at 6-44.)

In sum, the DEIR failed to provide any support for Alternative 5 as the environmentally superior alternative and for why Alternative 5 is economically infeasible. Both deficiencies must be address before the Project can be approved. (CEQA Guidelines, § 15091, subd. (a)(3) ["No public agency shall approve or carry out a project for which an EIR has been certified... [unless environmentally superior] project alternatives identified in the final EIR" are infeasible].) The EIR must support its conclusions regarding alternatives with substantial evidence and provide additional information for the public to comment on.

IX. Conclusion

Comment 65-47

Thank you for the opportunity to submit comments on the DEIR for the CEMEX Rockfield Quarry Modification Project. The DEIR fails to adequately analyze or mitigate the proposed Project's impacts to biological resources, greenhouse gas emissions, surface and groundwater quality and availability, and project alternatives.

Given the possibility that the Center will be required to pursue legal remedies in order to ensure that the County complies with its legal obligations including those arising under CEQA, we would like to remind the County of its statutory duty to maintain and preserve all documents

and communications that may constitute part of the "administrative record" of this proceeding. (§ 21167.6(e); *Golden Door Properties, LLC v. Superior Court* (July 30, 2020, Nos. D076605, D076924, D076993) ___Cal.App.5th___ [2020 Cal. App. LEXIS 710.) The administrative record encompasses any and all documents and communications that relate to any and all actions taken by the County with respect to the Project, and includes "pretty much everything that ever came near a proposed [project] or [] the agency's compliance with CEQA . . . ." (*County of Orange v. Superior Court* (2003) 113 Cal.App.4th 1, 8.) The administrative record further includes all correspondence, emails, and text messages sent to or received by the County's representatives or employees, that relate to the Project, including any correspondence, emails, and text messages sent between the County's representatives or employees and the Applicant's representatives or employees. Maintenance and preservation of the administrative record requires that, *inter alia*, the County (1) suspend all data destruction policies; and (2) preserve all relevant hardware unless an exact replica of each file is made.

Comment 65-47 Cont.

Please add the Center to your notice list for all future updates to the Project using the email addresses below and do not hesitate to contact the Center with any questions.

Sincerely,

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From:	Scott Roycroft
To:	Randall , David A.
Subject:	public comment on CEMEX Rockfield Expansion Project
Date:	Monday, March 10, 2025 9:28:11 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Fresno Planning Department,

As a partnering business and donor to the San Joaquin River Parkway, I take significant interest in the conservation and protection of this section of the San Joaquin River. This section of river provides countless ecosystem services and critical habitat for special species. Fresno County has a duty to protect these critical resources which are threatened by the rockfield expansion project. Please consider the adverse impacts of this project on the river.

Comment 66-1

Thank you for your time and consideration.

Best,
Scott

--

Scott Roycroft
Head of Real Estate | Earth

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Friends of the River
3336 Bradshaw Rd.,
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Sacramento, CA 95827

VIA ELECTRONIC MAIL ONLY

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
DRandall@FresnoCountyCA.gov

Subject: RE: Draft Environmental Impact Report for the proposed modification to the existing CEMEX Rockfield Quarry (EIR No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667)

Dear Mr. Randall,

Friends of the River (FOR) is submitting this comment letter regarding the County of Fresno's Draft Environmental Impact Report (DEIR) 7763 for the CEMEX Rockfield Quarry: Rockfield Modification Project (proposed project). Comment 67-1

FOR's mission is to protect and restore California rivers by influencing public policy and inspiring citizen action. In addition, FOR is one of the Settling Parties of the the San Joaquin River Restoration Program (SJRRP) which is currently being implemented in accordance with the San Joaquin River Restoration Settlement and the San Joaquin River Restoration Settlement Act (Act), included in Public Law 111-11. The proposed project is located within the SJRRP Restoration Area and has the potential to impact Reclamation's successful implementation of the SJRRP.

FOR appreciates the County of Fresno's efforts on the proposed project and consideration of our comments. General comments and specific comments are provided in the attached "Comments on the Draft Environmental Impact Report: CEMEX Rockfield Quarry: Rockfield Modification Project (EIR 7763) and Unclassified Conditional Use Permit Applications No.s 3666 and 3667."

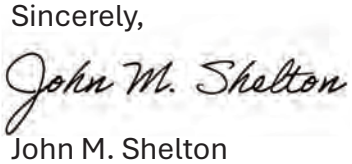
FOR does not believe there are enough overriding conditions that could be used to justify the extension of the Conditional Use Permits and that the County of Fresno should deny the application. If the County does make finding of overriding concerns for those impacts not fully mitigated, CEMEX should be required to implement more comprehensive mitigation for wildlife, recreation, visual, and traffic impacts. For several CEQA required areas of disclosure, Fresno County decision makers, FOR, and the public does not have Comment 67-2 Comment 67-3

enough information to adequately analyze the impacts of the proposed project on the resources for which we advocate. Also as an active party to the SJRRP settlement, we do not believe that the analysis is adequate to inform us in providing direction to the agencies implementing the SJRRP. We request additional information be provided in the DEIR regarding baseline conditions, impact analyses, and mitigation measures, as described in the attached document.

Comment 67-3 Cont.

FOR appreciates the opportunity to comment on this proposed project and the County's consideration of our comments. Please contact John Shelton at jshelton@friendsoftheriver.org with any questions or if there is a need for discussion of these comments in more detail.

Sincerely,



John M. Shelton
Policy Advisor
Friends of the River

Enclosure

cc: Donald E. Portz, Program Manager, SJRRP
Tom Johnson, Restoration Advisor, SJRRP
Jason Phillips, Chief Executive Officer, Friant Water Authority
Hamilton Candee, Altshuler Berzon LLP
Rene Henery, California Science Director, Trout Unlimited
Sharon Weaver, Executive Director, San Joaquin River Parkway and Conservation Trust

Comments on the Draft Environmental Impact Report: CEMEX Rockfield Quarry: Rockfield Modification Project (EIR 7763) and Unclassified Conditional Use Permit Applications No.s 3666 and 3667

Background

Staff from Friends of the River have reviewed the documents that Fresno County has made available on their website (https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/environmental-impact-reports/cemex-rockfield-expansion). With the amount of information available, and the limited time for review, staff focused on issues that are important for our organization such as fisheries and wildlife, public health, and outdoor recreation. In accomplishing our review, we also discussed the project with other organizations and community members, press coverage, and social media discussions. We used these communications to note issues that should also be brought to the attention of those making the decision to move forward with this project. It is possible that some issues were covered adequately in the appendices to the Draft Environmental Impact (DEIR) or other documentation, but were not summarized adequately in the main DEIR.

Comment 67-4

General Comments

Our organization, along with other environmental organizations and community members, does not believe that a gravel quarry and gravel processing plant is an appropriate land use for the San Joaquin River corridor currently or into the future. Historically, as the area developed and gravel mining operations were sited, the gravel and sand resources of the San Joaquin River and its immediate corridor were a fast and easy source. We understand that society's values change, and believe strongly that those values now reflect a desire to let the San Joaquin River and its associated floodplains and connected upland, recover from decades of sand and gravel extraction. In the last few decades, the State (Pappas & LiveScience 2014)

Comment 67-5

Overriding Considerations and Need for Gravel Operations in the River Corridor

Statements within the DEIR and supporting documents are misleading to imply that the Plant and Quarry are needed for gravel supply for the NE Fresno and North Clovis areas. As reported in Fresnoland by Gregory Weaver (Weaver 2025) and documented by The California Geological Survey (Clinkenbeard & Gius 2018), this region is better than adequately resourced with developed

Comment 67-6

supplies for next 50 years. Although some benefits can accrue to specific segments of the County's economy, the analysis of whether those benefits are greater than the benefits of a completed San Joaquin River Parkway, that may be precluded for the next 100 years is not undertaken. In addition, the significant impacts to Visual Resources and Traffic, by themselves could show that the overall economic impact to this region is likely to be negative.

Comment 67-6 Cont.

The San Joaquin River has been noted in the past as California's most endangered river (Pappas & LiveScience 2014). Since 2014, the San Joaquin River Restoration Program, the San Joaquin River Conservancy, both the Counties of Madera and Fresno, and the City of Fresno, have been intent of making the river more ecologically resilient by investing in properties for recreation, passing land use designations for the San Joaquin Parkway, and approving projects.

For these reasons, any finding of Overriding Considerations that are related to the economy, including employment, cannot be supported without much more analysis and information disclosure.

Project Analysis Should Be Based on Both Existing and Future Impacts, Including the Length of Time Those Impacts are Occurring

Comment 67-7

- Analysis of ecological, recreational, and other impacts should be based both on existing conditions and length of impacts.
- Hydrology and wildlife (fisheries especially) should be analyzed for planned restoration from SJRRP, SJRC, Active Transportation, and other Future Land use projects

Comment 67-8

- Future impacts to water supply should quantify, based on future planned/predicted river hydrology from open water (transpiration) surfaces.

Comment 67-9

The DEIR does not adequately compare the Proposed Project to the No Project Alternative. While we agree with the assessment that the No Project Alternative is the best environmental option, the analysis and discussion should include more information on reasonably foreseeable projects and future conditions. For example, the analysis regarding transportation impacts does not fully discuss the intention of both the City and County of Fresno, and the City of Clovis, to implement numerous plans and policies that encourage Active Transportation. The impact of this project on the ability for these jurisdictions to encourage biking and walking within the affected area of this project is not analysis nor discussed other than with current conditions. The impacts of blasting, gravel truck traffic, and spread of rocks and gravel from transporting materials on Friant Avenue is likely to disrupt the implementation of Active Transportation elements significantly over time.

Comment 67-10

The hydrologic and wildlife impacts, similar to Transportation and recreation, should consider and analyze future hydrologic conditions that are being implemented by water agencies. The San Joquin River Restoration Program has well publicized intents to implement full restoration flows on the San Joaquin River. This program, that has invested $100's millions in the San Joaquin River, is based on a legally binding settlement and Federal Government law (https://www.restoresjr.net/). Analysis within the DEIR should consider the higher levels of flows within the river that is mandated by the program, the higher levels of fisheries resources that are being pursued, and other related information that is available.

Comment 67-11

Given the long timeframe of the extension of the CUPs, the DEIR should also acknowledge the US Fish and Wildlife Service's, National Marine Fisheries Service's, Department of Fish and Wildlife's, and the San Joaquin River Conservancy's plans for restoration of fish and wildlife resources. This project area is an important component of future habitat for several listed and candidate species, and species of special concern that, and programs for recovery well documented. These efforts should be reasonably foreseeable to increase the number and types of fisheries and wildlife over the 100 years of the length of this CEQA project.

Comment 67-11 Cont.

Relative to hydrologic analysis and water supply, the DEIR should also find that reclaiming both the plant site and the quarry area will increase evaporation of water that is directly linked to groundwater flow or would intercept water from Little Dry Creek that would ultimately impact the River's flow. Although reclamation to other than open water habitat would likely be cost prohibitive for the Company that ultimately is the owner when reclamation is implemented, this impact needs to be stated as a unmitigated significant impact.

Comment 67-12

Future Conditions Should be Analyzed with Climate Change Considerations

Comment 67-13

- Future conditions should be analyzed with climate change considerations
    - Hydrology – flood potential with climate modeling
    - Water Quality (algae blooms in open water pits)

Related to the above discussion of reasonably foreseeable future conditions, most of the analysis on the future conditions does not incorporate well documented future impacts due to climate change. Analysis regarding hydrological conditions for the San Joaquin River and Little Dry Creek do not include like conditions that will exist both by 2050 and 2100. As is well documented with climate models, including downscaled modeling and analysis for this region, the climate in this region will have both hotter conditions and more flashy climatological events (for examples, see Moser & Ekstrom 2010, Zhang et al. 2024, and Liu et al. 2021). The analysis of the integrity of the quarry site from inundation, including through higher levels of groundwater flow from increased height of the river, and power of the river, should be better analyzed. An especially important, mitigation that would prevent the failure of the walls of the quarry should be very robust. The analysis of the quarry site from inundation from extreme flows of Little Dry Creek is especially superficial. (see below for related issues).

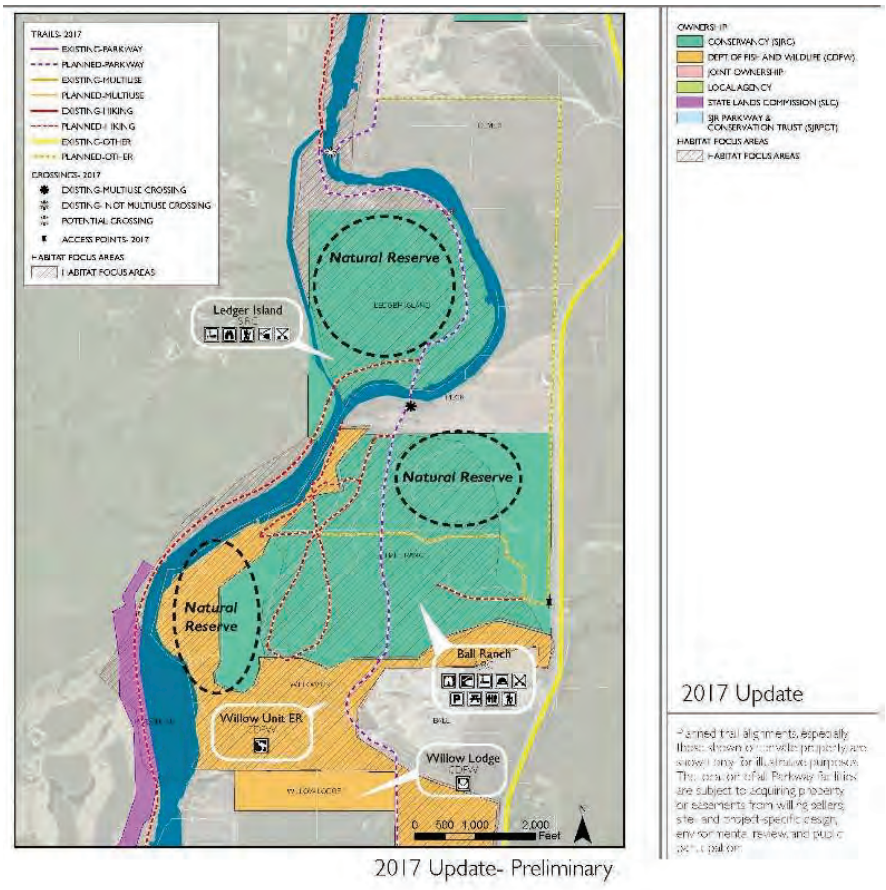
Climate Change projections are nearly unanimous in the prediction of hotter summers for this region. Reclaiming the plant and quarry sites to open water habitat does not consider what the future conditions will mean for water temperatures and the likelihood of outbreaks of *Microcystis*, a potentially dangerous micro algae (Power et al. 2024). With the potential for *Microcystis* outbreaks, the DIER should consider the potential future implications to fishers, wildlife and humans.

Better, more Comprehensive Mitigation Should be Implemented, Especially for Significant Impacts that Cannot be Fully Mitigated to Less Than Significant Impacts

Comment 67-14

An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures (§15093 of the State CEQA Guidelines). This project is one which takes a valuable resource of the County and State, and allows for the commercialization of that resource. The likelihood of a lucrative return to the local economy is documented within the DEIR. From this perspective, it is likely that CEMEX will significantly benefit from this project. For this reason, feasible mitigation measures need to be considered that in other instances could be deemed too expensive.

For Transportation impacts, especially for those that involve the safety of pedestrians and bicyclists, there are several mitigation measures that could reduce the over impacts of this proposed projects. The City and County of Fresno have identified multiple intersections along Friant Avenue within the likely travel routes for the gravel trucks. The County should consider the installation of pedestrian and bike bridges at the intersections of Fresno, Audubon, Shepard, Fort Washington, Champlain, Copper, and Willow. Potentially these overcrossings can be completed over time, with those nearest Woodward Park being the highest priority. Related to this is the impacts to the San Joaquin River Parkway multiuse trail. Although CEMEX states in their supporting documents that they could work with the San Joaquin River Conservancy to build this between the plant and Friant road, and along their quarry pit, both of these alignments will still have safety concerns with the increased truck traffic. The County should require that CEMEX build a the multiuse train and underpass at the entrance to their plant, in addition to constructing the multiuse trail on Ball Ranch, connecting by a bridge across the river to Ledger Island, and then reconnecting to the Fresno side of the river upstream of the quarry site and connecting it to Lost Lake Park. These additions would keep pedestrians and bicyclists away from the quarry and allow for safe travel by the plant site. In addition, this should also take more bicycle traffic off of Friant Road and avoid safety considerations of increased traffic.



2017 Update- Preliminary

Figure 1. From the San Joaquin River Parkway Master Plan. Siting of existing and proposed multiuse trails with two crossing of the San Joaquin River.

Specific Comments

Comment 67-15

Silty discharge from Plant site ponds to Little Dry Creek active floodplain

The proposed project at the plant site (Figure 2) does not discuss past levee breakage and loss of water from the silt pond. Although the proposed project describes some protection from discharges of the silt pond, there is not much information on any increase in design characteristics to the levee than can justify more confidence that further discharges will not happen. As seen in Figures 3-7, the silt pond is located next to the active flood plain of Little Dry Creek and has likely discharged silt and silty water into that flood plain. With the existing water quality constituents of the silt pond as reported in DEIR, the proposed project should provide strong mitiation measures to assure that the levee separating the silt pond from Little Dry Creek is much stronger, better monitored, and include a spill cleanup and abatement plan.

Comment 67-16

Little Dry Creek supplies the Main Pond on Ball Ranch, that is used by the public for fishing, swimming and boating recreational activities. With the potential for future discharges of the silt pond, analysis should be done for the Main Pond on wildlife and fisheries species (see Figure 8), water quality issues, and impacts to hydrology from the proposed extension of the plant site CUP.

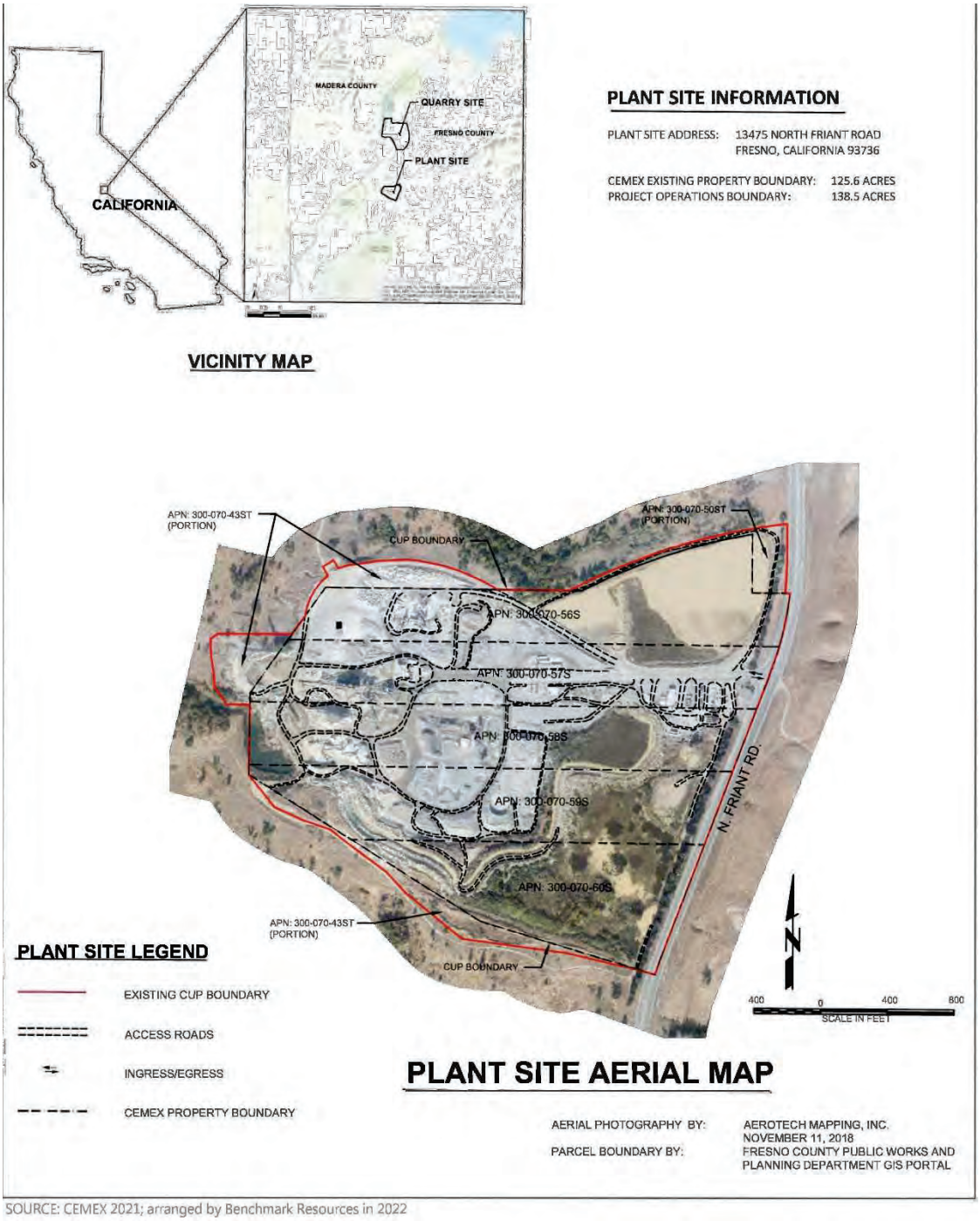


Figure 2. Figure 2-1 form DEIR showing the Plant Site's existing conditions. Note the property boundaries versus the project area disturbances and the location of the silt pond.

Comment 67-16 Cont.

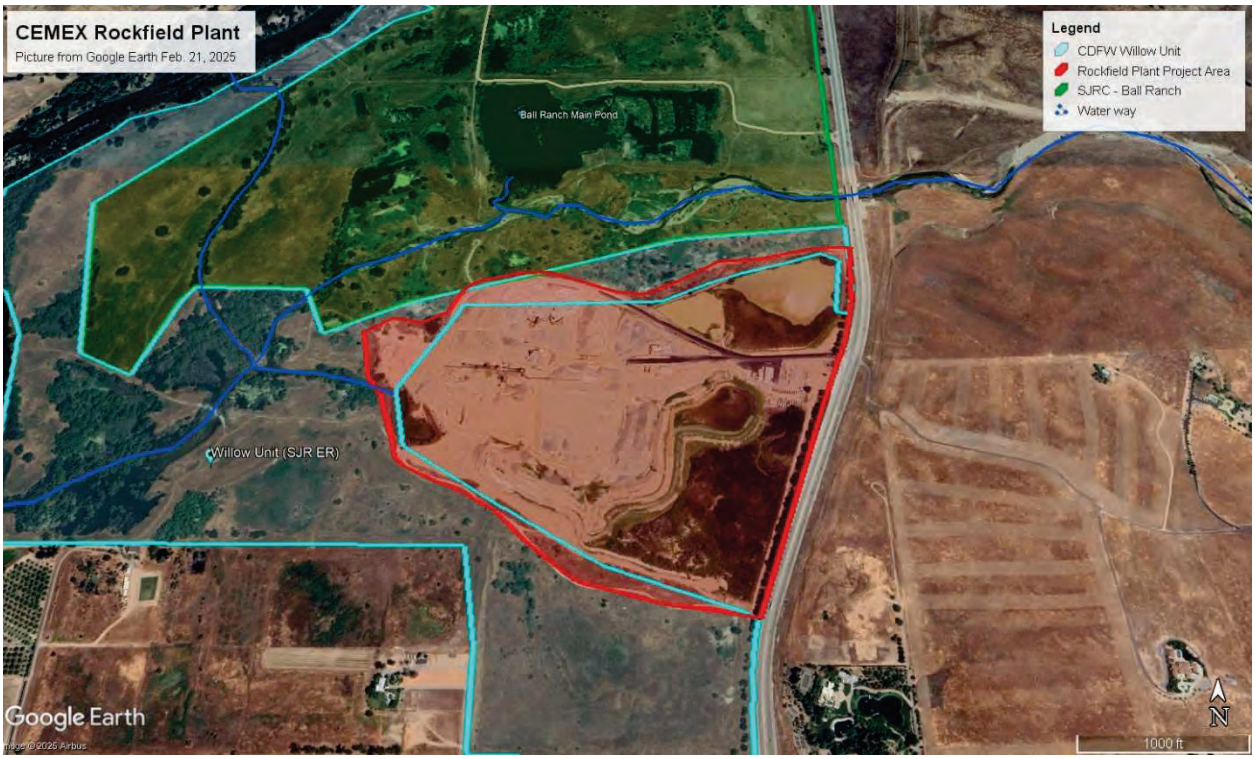


Figure 3: Rockfield Plant site from Google earth with approximate property boundaries. Note the proximity of the plant's northern boundary and silt pond to Little Dry Creek, especially Little Dry Creek's active floodplain.

Comment 67-16 Cont.

Figure 4: Google Earth Image from March 2025 showing existing conditions with a focus on the silt pond and Little Dry Creek. Note the silt deposits next to the silt pond.

Figure 5: Google Earth image captured March 2025 and using the time series tool to show another instance of siltation in Little Dry Creek's floodplain next to the silt pond in May of 2020.

Comment 67-16 Cont.

Figure 6: Google Earth image captured March 2025 and using the time series tool to show another instance of silty water in Little Dry Creek's floodplain next to the silt pond in August of 2018.

Comment 67-16 Cont.

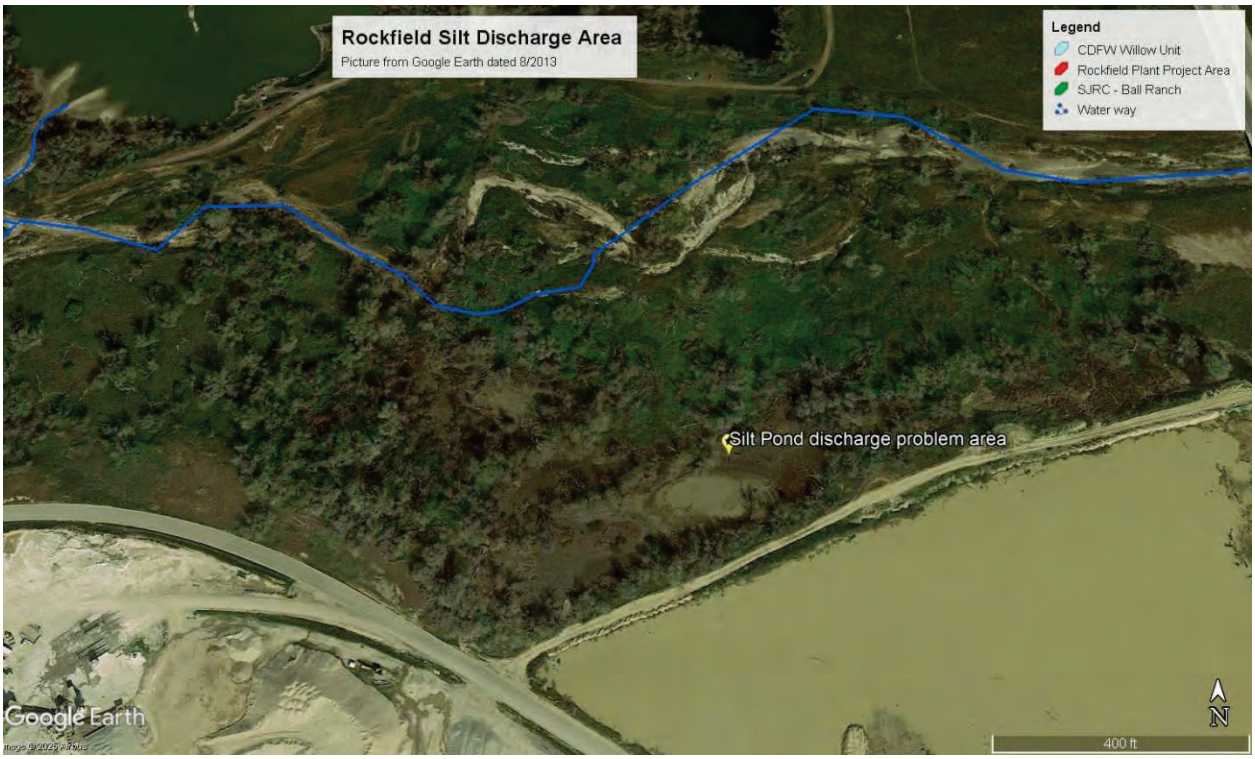


Figure 7: Google Earth image captured March 2025 and using the time series tool to show another instance of silty water in Little Dry Creek's floodplain next to the silt pond in August of 2013.

Figure 8: Sacramento Pikeminnow at the entrance of the Ball Ranch Main Pond. Photo taken April 12. 2029.

Comment 67-17

Lack of any analysis of the Inlet Ditch that is connected to the San Joaquin River and Little Dry Creek

- Silt issues
- Crossing of Little dry Creek
- Low water crossing of Little Dry Creek
- Invasive species issues in Ditch
- Lack of Fish Screen
- Lack of Water Quality Analsis

Figure 2 also shows the CUP boundary, which is also described as the Project Area for the plant site. A very important area that is not included, but should be, is the inlet ditch that supplies water to the plant. Figure 3 also shows, approximately, the location of the inlet ditch as in connects to the plant site on its western boundary, travels west before turning north and connecting to the San Joaquin River. A very important note is that the ditch crosses Little Dry Creek at grade, causing the waters to commingle (Figure 9). The ditch supplies project related water supplies, and has required maintenance in the past, which is likely to continued being required for flow. For this reason, it should be included in the project area and its continued operations and maintenance described and mitigation for continued negative impacts covered.

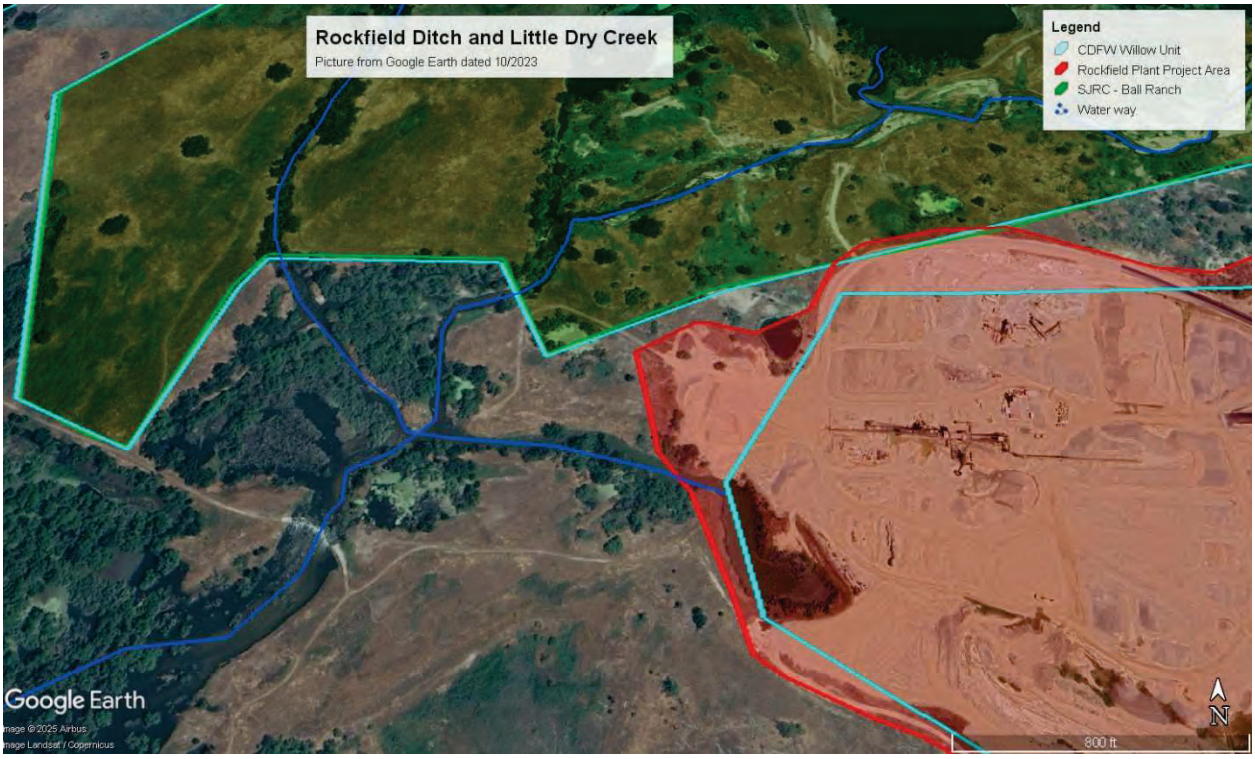


Figure 9: Rockfield water supply ditch with a focus on the crossing of Little Dry Creek from Google Earth, access in March 2025 and using the time series tool to show October 2023. Note the water within Little Dry Creek downstream of the inlet ditch crossing.

For example, Figure 10 shows how close land disturbance is to the inlet ditch pond at the plant site. This proximity of disturbance can allow silt and other contaminants to enter the water in the inlet ditch. With flows of Little Dry Creek, the likelihood of flow going back towards the River is likely. As with the water quality of the silt pond, water quality of the inlet ditch needs to be described. Mitigation and monitoring requirements need to be put into place to avoid, if possible, on going and future negative impacts. Siltation of fine sediments is especially problematic for the fisheries of the San Joaquin River and is identified as potential issues in the continue efforts as reestablishing a run of Chinook salmon.

An important mitigation measure to avoid some of the most important negative impacts from continued operations at the plant site is to separate the ditch water from Little Dry Creek. A siphon or some other such infrastructure should be required. In addition, none of the background information describes a right to use water from Little Dry Creek, and with the water comingled, CEMEX is taken water from a water body without any clam of rights for that.

Comment 67-18

Comment 67-19

Figure 10: Rockfield water supply ditch with a focus on the crossing of Little Dry Creek and the inlet pond from Google Earth, access in March 2025 and using the time series tool to show May 2023. Note that Little Dry is flowing and that the surface disturbance at the plant site goes up to the inlet pond, allowing siltation and contaminants to enter the inlet ditch waters that are connected to Little Dry Creek.

Impacts to Fisheries and Wildlife Need a More Comprehensive Analysis and a Mitigation and Monitoring Plan that Adequately Prevents Impacts

Comment 67-20

Although the supporting documentation for the DEIR discusses modeling that purports to show that the likelihood of impacts from blasting to fisheries, including Spring run Chinook salmon, are not

Comment 67-20 Cont.

expected, the monitoring, with mitigation measures if monitoring shows impacts taking place, is not sufficient to protect this very important resource. The 2013 State of Alaska Department of Fish and Game Blasting Standard (Alaska Blasting Standard) cited by the applicant identifies mitigation monitoring (hydrophones) that should be conducted in conjunction with blasting. The following is a recommended mitigation approach:

- Year 1 of blasting: Monitor blasting impacts at the river adjacent to the Quarry Site. Depending on monitoring results, implement the following actions:
    1. Below 0.6 pounds per square inch and 0.5 inches per second: no action.
    2. Between 0.6 pounds per square inch-6 pounds per square inch or 0.6 inches per second-2.0 inches per second: implement avoidance and minimization measures outlined in the Alaska Blasting Standard and continue monitoring.
    3. Above 7.3 pounds per square inch or 2.0 inches per second: implement avoidance, minimization, and mitigation measures outlined in the Alaska Blasting Standard and continue monitoring.

At the end of one year of monitoring, re-evaluate the need for monitoring using the following parameters:

- If after 1 year, river impacts stay below 0.6 pounds per square inch and 0.5 inches per second, no additional monitoring is needed so long as future blasting techniques don't create additional pressure or other river impacts.
- If after 1 year, river impacts have been between 0.6 pounds per square inch-6 pounds per square inch or 0.5 inches per second-2.0 inches per second, continue monitoring and implementing avoidance and minimization measures until 1 year of 0.6 pounds per square inch and 0.5 inches per second measurements.
- If after 1 year, river impacts exceeded above 7.3 pounds per square inch or 2.0 inches per second, continue to implement monitoring and avoidance, minimization, and mitigation measures until 1 year of lesser pounds per square inch measurements are experienced, at which point follow guidance for the range of pounds per square inch and inches per second measurements experienced.
- If at any point blasting technique changes so that blasts have the potential to be more impactful to the surrounding land than they were during a 1-year monitoring period where blasts registered below 0.6 pounds per square inch and 0.5 inches per second at the river, river monitoring should take place for the period of higher impact blasting to verify that the new blasting technique does not create additional impacts to the river. So long as impacts of the new blasting technique remain below 0.6 pounds per square inch and 0.5 inches per second at the river, no additional monitoring is necessary for that blasting technique. If the blasting technique creates impacts, either cease the technique or re-enter monitoring, avoidance, minimization, and mitigation measures described above.

Comment 67-21

The analysis of impacted wildlife species from operations, including blasting at the quarry site, does not adequately discuss probable species of wildlife expected in the area. The main example of this is any analysis of bat species. The North American Bat Monitoring Program has established monitoring sites very close to both the plant site and to the quarry site (NA Bat Monitoring Program 2023). This program has identified numerous species of bats adjacent to the project sites. In addition, Pallid Bats, recently listed as California's official state bat, have been identified in a night roosting site within 10 miles of the plant site (Figure 11). The DEIR should analyze the potential for blasting impacts of roosting of bat species, document their areas of concern, and potentially impacts for impaired water bodies such as the silt ponds on their diet.

Figure 11: Pallad bats at the Lanes Road house of the San Joaquin River Conservancy. Photo taken by J. Shelton November 2022

References

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From:	Sharon Weaver
To:	Randall , David A.
Subject:	CEMEX Rockfield Expansion Significant and Unavoidable impact
Date:	Monday, March 10, 2025 12:00:29 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hi David:

As I continue to review the DEIR I just came across the following paragraph in the 4.11 table regarding land use consistency with local planning documents: Comment 68-1

See Section 4.10, "Hydrology and Water Quality." With implementation of mitigation measures, the project would have less-than-significant impacts on water quality, groundwater supplies and recharge, and drainage patterns. However, as it cannot be said with certainty at this time that access would be granted to County and private residential supply wells to allow for the full implementation of Mitigation Measure 4.10-11a, the County has determined that the proposed project's potential impact on groundwater supply wells surrounding the Quarry Site would be significant and unavoidable.

If the County of Fresno has determined Groundwater impacts to be significant and unavoidable according to this statement, why weren't those impacts highlighted in the Notice of Availability?

Sharon Weaver
Executive Director
San Joaquin River Parkway & Conservation Trust, Inc.
11605 Old Friant Road
Fresno, CA 93730
(559)248-8480 X105
www.riverparkway.org

APPENDIX M-3
INDIVIDUAL RESIDENTS' COMMENT LETTERS (LETTERS #69-612)

From: James R Durando
To: Randall , David A.
Subject: Re: Cemex Friant Road
Date: Wednesday, January 22, 2025 6:12:00 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Thank you Mr Randall for replying. I am not interested in a civil claim.

Our mailing and email address are correct. You can drop the Trustees.

Thanks
Jim

On Jan 22, 2025, at 11:46 AM, Randall , David A. <drandall@fresnocountyca.gov> wrote:

James,

- I am in receipt of your email.
- You may send comments on the project to me, which may include your concerns about the impact on your property value. Your comments would be added to the record and provided to the Planning Commission.
- If you are asking about how to make a legal civil claim for the loss of value in your home, I cannot advise you; you would need to seek your own legal counsel.
- Mr. Mtunga's email address is TMtunga@FresnoCountyCA.gov.
- To confirm you are on our mailing list as: DURANDO JAMES R & DIANE R TRUSTEES, P O BOX 349, FRIANT CA 93626 and James R Durando, jimdiane@netptc.net, 15462 North Friant Road, Friant, CA 93626.

Thank you for your interest and participation in this important public process.

<image001.jpg>

David Randall | **Senior Planner**
Department of Public Works and Planning |
Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4497 Direct: (559) 600-4052
Your input matters! Customer Service Survey

From: James R Durando <jimdiane@netptc.net>
Sent: Wednesday, January 22, 2025 7:31 AM
To: Randall , David A. <drandall@fresnocountyca.gov>
Subject: Cemex Friant Road

Good morning Mr. Randall, The Cemex is weighing heavy on my mind. I know you are only in charge of EIR. I need your advise and direction of who to contact for the loss of property value. I do not know the county mechanism and I am hoping you

Comment 69-1

can direct me or find out who I contact. This is a very important consideration that needs to be addressed. The value in our home is what we have to care for us in our elder years a 37% loss would be devastating.

I would like the email for Mr Mtunga. The email I had to add us to the Cemex notification list returned to me.

Thank you for your consideration on our behalf.

Jim and Diane Durando
559 676-0190
15462 N Friant Road

PS Can you respond one way or another so I know you read the email.

Evany Zirul

404 E Sussex Way
Fresno CA 93704
zirul@comcast.net
zirul.art

January 23, 2025
Daniel Randall
2220 Tulares St 6th floor
Fresno, CA 93721

Dear members of the Fresno County Board of Supervisors

This letter is in protest to the approval of the Cemex USA proposition by the Fresno County to extend it's contract permit and property access for another 100 years. The damage to the (our)environment will be incalculable.

Comment 70-1

Located adjacent to the river, the project has unknown damage to the water and river. In this increasingly arid environment, the xxx to the river could be significant. Also, the continued and increased traffic of oversize vehicles is and will be a source of damage to our roads and air quality.

Comment 70-2

Comment 70-3

Why would a foreign company have such influence on our governors?

Comment 70-4

This proposition is in direct

Sincerely yours,

Evany Zirul

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

February 21, 2025

Evany Zirul
404 E. Sussex Way
Fresno, CA 93704

Comment letter on CEMEX Rockfield Quarry EIR 7763

Ms. Zirul

We received your enclosed letter on February 20, 2025, regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From:	Bob Papazian
To:	Randall , David A.
Subject:	Against modifying &/or extending CEMEX
Date:	Friday, January 24, 2025 3:28:09 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 71-1

Hello David,
I'm a 4th generation Fresnan. I just received the mailer today from the County of Fresno regarding the proposed CEMEX extension/modification of their existing agreement for mining rock, sand, & gravel adjacent to the San Joaquin River near north Fresno.

I am AGAINST any extensions or modifications to the existing agreement with CEMEX. I would like to see them cleanup, restore, & vacate that sight as spelled out in the current agreement. This property is sorely needed for the public, as Fresno continues to grow. It's been gratifying to finally see some public space (Ball & Sumner Peck ranches) set aside for public use near the San Joaquin River. The CEMEX operation has served its purpose. It's time to say "no" to any mining request extensions in that area, especially so near the river. I personally would like to see that property managed by the San Joaquin River Parkway & Trust & opened to the public, just like the former Ball Ranch & Sumner Peck properties.

Thank you for listening,
Bob Papazian
4th generation Fresnan

From:	DJ and Jill Agellon
To:	Randall , David A.; Mtunga, Tawanda
Cc:	District 2
Subject:	CEMEX Rockfield Quarry Modification Project EIR 7763
Date:	Saturday, January 25, 2025 11:59:09 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 72-1

Comment(s) 72-2, 72-3 72-4

County Planners, please do not allow Cemex to extend their contract and mining in this area. We currently live in Tuscan Bluffs off Friant Road and strongly oppose the Cemex project extension and plans for a 600 foot pit. Particularly concerning is that CEMEX is a multinational company headquartered in Mexico,where they do not even allow the type of blasting/drilling CEMEX wants to do in Fresno. Please do not allow air, noise, and water pollution to affect our community. The San Joaquin River Parkway should be restored. Further, Friant Road is already very dangerous and we can't imagine what adding more truck traffic to it would cause.

Thank you for your time and consideration,

The Agellon Family

From:	Corrie Lucchesi
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR
Date:	Saturday, January 25, 2025 6:50:17 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good morning.

I vehemently oppose the Cemex Rockfield Expansion which includes the blasting of a 600 foot pit. (https://www.fresnocountyca.gov/files/sharedassets/county/v/1/vision-files/files/46439-eir-7763-informational-slideshow.pdf) There are many things not to like about this expansion, but the simplest reason is the continued damage to the environment. What has already been done is bad enough, but to allow it to continue and on a heightened level is outrageous. Not only would this continue to damage the ecosystem, but it poses more danger for Fresno's citizens as air quality worsens and elevated noise pollution commences. In addition, Fresno is already among the top 10 most polluted cities in the US as was reported in The Fresno Bee on 4/27/24, and adding to this atrocity is an affront to humanity. (https://www.fresnobee.com/news/local/article288061190.html)

Comment 73-1

In conclusion, there are many homes in the vicinity of Cemex and its homeowners would be unduly and adversely affected by this expansion. I am one of those homeowners and I forcefully oppose this expansion taking place.

Thank you.

Corrie Lucchesi
11340 N. Via Milano Way
Copper River Ranch Neighborhood
559.259.0569

From: Susan McAndrew
To: Randall , David A.
Subject: CEMEX
Date: Tuesday, January 28, 2025 5:05:01 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr Randall,
I just received a letter informing me about the proposed modification of the CEMEX expansion plans. Comment 74-1
I am very opposed to this expansion. I have lived nearby for the last 35 years. We have already endured enough dust, traffic, speeding and pollution from this operation. I realize there is great pressure to provide building materials for area growth but they are basically trying to do that in the middle of a suburban area and a nature preserve. The traffic on Friant Rd has increased tremendously over the past decade. Having the large cement trucks and other construction vehicles try to share the road with all the new traffic is quite dangerous. Comment 74-2 Those trucks don't like to stop and I see them run redlights very frequently. They also speed along the highway.
The proposed change would afford even more traffic between the two plants as well as inbound customers to the concrete plant and hot-mix plant.
Those drivers are on a timeline everyday. They have to check in at arrival and departure . Every part of their day is tightly measured. They are under orders to get the job done. Quickly.
Friant road has some of the highest accident rates in the city. Many of them are fatal.
The city of Fresno has tried to mitigate the number of accidents . They lowered the speed limits. They limited right turns at red lights, highlighted signal lights and traffic signs, repainted lane lines and accommodated bicycle lanes near Woodward Park.
That's another thing- the route of access for all this truck traffic goes right next to a large regional park that has very heavy usage. A lot of the parking is on the South side of the road so there are groups of people crossing at all times. I see the disappointed looks on the faces of these big-truck drivers early in the morning when I change the light at Rice Road so I can cross to the Eaton trail.
So, are we going to unleash all this increased CEMEX traffic right into the middle of this suburban, recreation area?

Additionally, I see large holes in the pavement from the weight of the trucks. There would be two or three or four times more of them under this new plan. Comment 74-3
So who is going to pay to refurbish the road? Has that aspect been considered?

Then there are plenty of environmental concerns. Dust, debris falling off trucks, noise. All of this is a disturbance to the natural environment. Isn't that what the park was created for? The area is home to eagles, hawks, owls, coyotes , rabbits, finches, foxes etc. All of the commotion of CEMEX doesn't support that natural environment in the least. Comment 74-4
When I moved here , it was my understanding that CEMEX was supposed to be phased out . Comment 74-5

I don't even want to think about a 600 ft deep hole in the ground near Lost Lake Park!

I respectfully request that these concerns be taken into consideration and be given the most weight possible when the county makes decisions on this property.

Comment 74-5 Cont.

Regards,
Susan M McAndrew
Homeowner

From:	Ty Ty
To:	Randall , David A.
Subject:	Cemex mining operation and extension of permits
Date:	Monday, February 3, 2025 3:42:45 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I would like to voice my objection to expanding the mining operations of Cemex. Traffic in that area is dangerous and congested enough without additional mining operations going on there. The hours of operation for this project start far too early given their proximity to residential areas and has a significant impact on air quality which is something we already struggle with in our Valley. How much tax revenue will they be contributing to mitigate the effects of the air pollution, noise pollution, and traffic congestion on those of the community who will have to bear the brunt of it?

Comment 75-1

Comment(s) 75-2, 75-3

Comment 75-4

Blasting 600 feet underground so close to recreation areas and residential areas could also have unforeseen impacts on ground stability. There are no guarantees that this company will pay for any damages blasting mining will have on the surrounding areas and it could have a large impact on public funds as liability gets hashed out in the courts.

Comment 75-5

Comment 75-6

Additionally, I have serious concerns about the impact this project will have on the river and the surrounding areas such as Woodward Park and Lost Lake park. I understand reclamation is a part of their plans but that will be 70 years in the future. My children are alive now. They're the ones who will have to live through these disruptions in their environment with very little benefit to them. Just an eyesore, air pollution, noise pollution, more traffic and who knows what else.

Comment 75-7

I oppose the extension of this project. It is too close to recreation areas and residential areas. Any financial gains to our community would not outweigh the negative impacts.

Comment 75-8

- Nyein Win
2411 e soquel circle
93720

Sent from my iPhone

From: Jim Durando
To: Randall , David A.
Subject: CEMEX EIR
Date: Wednesday, February 5, 2025 1:44:45 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr Randall, The term monitor for the barrier between the dig and the San Joaquin River is inadequate. Monitor means nothing without parameters and in-depth studies of the safety of the barrier. I saw no report from independent geologist as to the safety and stability of the barrier. If this fails it could have catastrophic down river and in flooding and contamination from the blast site. We must have evaluation by an independent fine geologist study this concern.

Comment 76-1

Diane Durando
15462 N Friant Road

From: Jim Durando
To: Randall , David A.
Subject: Cemex EIR
Date: Wednesday, February 5, 2025 1:50:48 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr Randall,

I see no report from our local native American community in the EIR as to the effect of this blast /dig may have on their river sites that have many traditional grinding holes. Has the local Table Mountain Rancheria been consulted? Have they had time to evaluate possible destruction of these Native American sites?

Comment 77-1

Diane Durando
15462 N Friant Rd

From: Jim Durando
To: Randall , David A.
Subject: CEMEX EIR
Date: Wednesday, February 5, 2025 1:33:54 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr Randall,

I am very concerned about the term Monitor in the report. To monitor with no established preexisting levels means nothing. Water levels do vary during the year. There are no current studies presented that have completed a year of establishing the current water levels at each of the 5 domestic wells within 1/2 mile of the project. Every well must be checked as they may be in different depth levels. One of the wells serves 11 homes. Water levels do vary during the year this is why a complete evaluation of each well is mandatory to protect peoples water.

Comment 78-1

The wells levels must be protected by 24/7 evaluation by a public agency to protect the domestic wells.

Comment 78-2

Then there must be parameters to this monitoring. At what percent of water level loss is there a complete halt of the proposed blast & dig? Cemex could choose to monitor us to no water. There must be exact legal language protections in place to protect domestic wells.

I know the man on the zoom meant well when he said monitor like it was the best protection, but I do not believe he really thought through his statement.

Diane Durando
15462 N Friant Road

From:	Neil Thompson
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR 7763
Date:	Wednesday, February 5, 2025 12:07:56 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Comment 79-1

I would like to raise an issue that affects Public Safety especially as it relates to the Quarry Site. This could be analyzed under the Hazard category as the Fresno County General Plan Implementation Program HS-E.B includes a statement that "*The County shall, as part of the development review process, ensure that new development . . . does not create manmade safety hazards . . .*".

The issue pertains to the public safety hazard that the quarry will represent after the project is complete 100 years or so from now (and maybe before). The public would expect that the site would be fenced for security purposes during the operational years. However, after the operations have ceased and the Applicant or their successors have vacated the property the quarry will remain as an attractive nuisance forever and beyond. By that time the metropolitan population will be several times larger than it is now and the river parkway will be utilized far beyond what we can now envision. Recreational travel up and down the river will lead everyone past the open quarry whether the trail is on the east or west side of the quarry.

With the stepped but vertical walls and a surface water elevation more than 400 below the trail elevation, the open quarry will not be suitable for fishing, swimming, boating, kayaking, canoeing, floating or anything else. But it will be ATTRACTIVE, especially to preteens and teenagers. There is not a fence that will keep them out.

What will happen if one or more of the public falls into the pit? They won't fall all the way down - just 50 feet. That is a sure death. And if they do fall into the water, how will they get out? With vertical walls all around, they may have to swim more than one half mile to find the sloped haul road at one point. How many people have drowned at Lost Lake because they can't swim? This might be a great EMS training center.

Who is going to maintain the fence FOREVER? The definition of an old mining feature is “abandoned mine.” That is a liability that the County will own FOREVER.

Thank you for your consideration.

Neil Thompson
514 E. Cole Ave.
Fresno, CA 93720
nsthompson@aol.com
(559) 977-3339

DRandall@Fresno-CountyCa.Gov February 6, 2025

Subject: Cemex Mining the San Joaquin River

As residents of Fresno County, we want to strongly object to the Cemex proposal to dig a 600-foot hole in the San Joaquin Riverbed for mining purposes. This will further destroy the river and the natural habitat for birds, wildlife, and plant species. Please do not allow Cemex to continue with this project.

Comment 80-1

The negative effects of allowing this corporation to continue is overwhelming. Traffic, air quality and the destruction of our precious remaining environment is reason enough to refuse Cements efforts to go any further.

For the benefit of our valley and all who live here please deny their request.

Ken and Betty Cornelisen

482 W San Ramon #101

Fresno, Ca 93704

559-259-2090

559-360-8094

Kcorn224@gmail.com

Bcorn12@gmail.com

From:	Eve Hudson
To:	Mtunga, Tawanda; Randall , David A.
Subject:	Re: Cemex"s open pit mine application
Date:	Thursday, February 6, 2025 2:41:18 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

The 600-foot-deep pit mine proposed for the San Joaquin River near Friant creates many problems to our air quality, water quality and the environment in general. Comment 81-1

Cemex, as you know, is a multinational corporation based in Mexico. Last fall, the lower house of Mexico's congress passed a bill banning the same kind of mining that Cemex proposes to do in our country, on our own San Joaquin River. Why, if Cemex's proposal is not good enough for Mexico would we allow it here in our own country? Comment 81-2

My family and I have spent many happy hours recreating and enjoying the San Joaquin River in that area. We need all the park space that we have and more. Please do not destroy our natural environment and the open spaces that we enjoy. Comment 81-3

I am asking you to vote no on Cemex's proposal to further mine the San Joaquin River.

Sincerely,

Eve Hudson

52047 Sesame Lane

Yokuts Valley, Ca. 93675

From:	Ken Hudson
To:	Randall , David A.; tmtunga@fresnocounty.org
Subject:	Cemex open pit mine application, Vote NO
Date:	Thursday, February 6, 2025 3:51:36 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

To: DRandall@fresnocountyca.gov

tmtunga@fresnocounty.org

Re: Vote NO on Cemex's open pit mine application

Do NOT approve Cemex's application to extend their open pit mining operation. As a life-long resident of Fresno County, I have always enjoyed the San Joaquin River near Friant for canoeing, fishing, swimming, hiking, wildlife-viewing, and field trips for my elementary students. Some of my fondest memories are seeing deer, egrets, beavers, and lately, even eagles. Allowing this multinational company, based outside the United States, to disturb the riparian environment and muddy the water with a 600-foot mining pit for a hundred years is unconscionable. As local columnist, Marek Warszawski, points out, "last fall the lower house of [Mexico's] Congress passed a bill banning the same type of open pit mining the company wants to do in Fresno County. If blasting and drilling a 600-foot deep pit next to a major river isn't kosher in Mexico, it should be equally beyond the pale for the San Joaquin Valley." (The Fresno Bee, Jan 14, 2025)

Comment 82-1

Comment 82-2

Fifteen years ago my family and I joined others in successfully calling for the planning commission and BOS to oppose Cemex's application to mine Jesse Morrow Mountain. Let's see Fresno County do the right thing again. Vote NO on the Cemex application.

Comment 82-3

Ken Hudson
Yokuts Valley, CA 93657
kenhudson2@gmail.com

From:	Brenda Markham
To:	Randall , David A.
Subject:	Fwd: "CEMEX Rockfield Quarry Modification Project EIR"
Date:	Thursday, February 6, 2025 4:40:45 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

---------- Forwarded message ---------
From: **Brenda Markham** <markhambrenda2@gmail.com>
Date: Wed, Feb 5, 2025 at 1:54 PM
Subject: "CEMEX Rockfield Quarry Modification Project EIR"
To: <Mtunga@fresnocountyca.gov>
Cc: Brenda Markham <markhambrenda2@gmail.com>

To whom it may concern:
With regard to DEIR-
Another major impact that CEMEX would have on the environment is noise. According to section 4.13-6 ,the negative effects of noise on humans can result in auditory and non auditory effects. These effects could lead to temporary or permanent hearing loss -not to mention behavioral and physiological effects.
Truck pass-by noise standard is 80 (dBA) [See page 770-771;4.13-25&26]. This level far exceeds the General Plan acceptable limits of 60 (dBA). see table 4.13-6.
This impact alone is detrimental to the health and well being of the surrounding communities. How do you plan to compensate for people with medical complications caused by high levels of noise?
Brenda Markham
markhambrenda2@gmail.com

Comment 83-1

From:	Brenda Markham
To:	Randall , David A.
Subject:	Fwd: "CEMEX Rockfield Quarry Modification Project EIR"
Date:	Thursday, February 6, 2025 4:41:08 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

---------- Forwarded message ---------
From: **Brenda Markham** <markhambrenda2@gmail.com>
Date: Sun, Feb 2, 2025 at 5:10 PM
Subject: "CEMEX Rockfield Quarry Modification Project EIR"
To: <Mtunga@fresnocountyca.gov>
Cc: Brenda Markham <markhambrenda2@gmail.com>

To whom it may concern:
Regarding the DEIR-
There are several environmental impacts listed, but one of my main concerns is Air Quality. I see on item 4.3-10 that "long term exposure to diesel exhaust particles poses the highest cancer risk of any toxic contaminant evaluated by OEHHA. The ARB has estimated that about 70% of the cancer risk that the average Californian faces from breathing toxic air contaminants stems from diesel exhaust particles".

Comment 84-1

This alone is detrimental to communities in the surrounding area. How do you intend to mitigate this?
thank you for your attention to this matter

Brenda Markham
markhambrenda2@gmail.com

From:	Brenda Markham
To:	Randall , David A.
Subject:	Fwd: "CEMEX Rockfield Quarry Modification Project EIR"
Date:	Thursday, February 6, 2025 4:41:58 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

---------- Forwarded message ---------
From: **Brenda Markham** <markhambrenda2@gmail.com>
Date: Wed, Feb 5, 2025 at 1:07 PM
Subject: "CEMEX Rockfield Quarry Modification Project EIR"
To: <Mtunga@fresnocountyca.gov>
Cc: Brenda Markham <markhambrenda2@gmail.com>

To whom it may concern:
Regarding the DEIR:
A concern I have is the environmental impact on wildlife. I don't see any mention of how wildlife is affected while there's blasting going on.This would be different from the surface mining that's been going on.

Comment 85-1

Brenda Markham
markhambrenda2@gmail.com

From:	Cheyenne J.
To:	Randall , David A.
Subject:	LEAVE FRESNO ALONE
Date:	Friday, February 7, 2025 9:08:19 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 86-1

Do you care about the impact this will have on our city, our water, our river, our park our habitat and our peace of mind? Nope because all you care about is $$$$ signs!

We & I who are natives to Fresno VOTE NO on this plan & project!

The San Joaquin River is important and precious and needs to be LEFT ALONE!

~Live Vertically~
Cheyenne Jenvey

From:	nsthompson@aol.com
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR 7763
Date:	Friday, February 7, 2025 10:20:20 AM
Attachments:	image.png

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Comment 87-1

Flood hazards are discussed in Section 4.10.1.5 starting on Page 4.10-15 of the Executive Summary and further described in an analysis found in Appendix G-1.

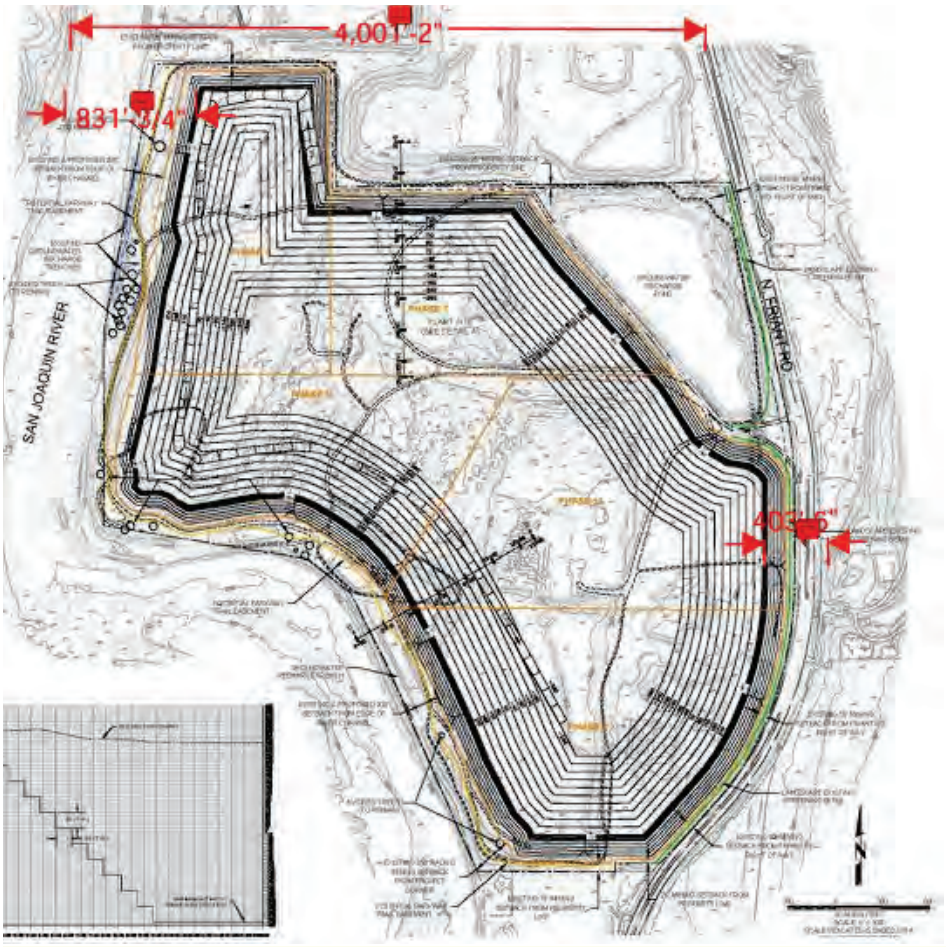
The flood hazard analysis is limited to the FEMA 100-year floodway and floodplain and states the "the floodplain does not encroach into the Quarry Site" as shown on Figure 4.10-1.

The continued development of the berm between the river channel and the Quarry Site will constrain the river and will create a choke point especially at the north end of the Quarry Site where the easterly bank of the river is more vertical. According to the 100-Year Hydraulic Results found in the Hydraulic Analysis in Appendix G-1, the flood water surface elevation between Stations 20 and 21averages out to 313.27 feet. Without a constraining bank between Stations 20 and 21on the east side of the river additional water flow will likely push to the east across the north side of the Quarry Site.

Comment 87-2

The Executive Summary includes the following caveat: *The Bureau of Reclamation owns and manages the dam, and, during unforeseen events, may be required to release water into the San Joaquin River at rates that could exceed the river channel capacity (Fresno County 2018a)*.

The establishment of an earthen berm around the Quarry Site that is higher (approximately 30 feet) than any land between the natural banks of the historic San Joaquin River will be an obstruction to unforeseen water flows in the historic channel. In fact, the creation of the Quarry Site berms will effectively obstruct about 70 percent of the historic channel width at the north end of the Quarry. This could have a devastating upstream impact as floodwaters are impeded by the Quarry Site berm.



The Fresno County General Plan HS-C.4 states: *The County shall require . . . developments within areas subject to 110- and 200- year frequency flood are designed and constructed in a manner that will not cause floodwaters to be diverted onto adjacent property or increase flood hazards to property located elsewhere."*

Comment 87-3

The Fresno County General Plan HS-C.12 states in part: *The County shall encourage the performance of appropriate investigations to determine the 200-year water surface elevations for the San Joaquin River . . . "*

Because the construction of the Quarry Site berm is intended to and will be required to remain FOREVER, it is unreasonable to assume that the analysis can be limited to the 100-year horizon. It should be a FOREVER horizon as the berm will have to withstand all conceivable and inconceivable events that it will face FOREVER.

More analysis is required to determine future impacts to this site and surrounding impacted areas due to flood hazards.

Thank you for your consideration.

Neil Thompson
514 E. Cole Ave.
Fresno, CA 93720
nsthompson@aol.com
(559) 977-3339

From:	Laurie Tidyman-Jones
To:	Randall , David A.
Cc:	District 2
Subject:	CEMEX blasting
Date:	Friday, February 7, 2025 1:24:29 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hello, I'm a resident of the City of Fresno, Fresno County and live near Woodward Park.I have lived in Fresno for over 50 years. I am writing to register my opposition to the continued dredging of the San Joaquin River and the proposal to blast the river basin.

Comment 88-1

The river bottom, air, water, and noise pollution is unacceptable,as well is the destruction of one of Fresno's greatest assets for beauty and wildlife, the San Joaquin river area. The continuance of CEMEX without an EIR since 2014 has seriously compromised the river basin and its aesthetic. We can't just be about making money we need a vision and a plan for a Fresno to be proud of, not embarrassed by. When Mr. Bredefeld (now County Supervisor representing me) his website bragged about Woodward Park and the beauty thereof. I am assuming he wants that to continue? It will be interesting to see.

Comment(s) 88-2, 88-3

Please stop this acceleration and reconsider the continued presence of CEMEX in the river bottom.

Comment 88-4

Sincerely,

Laurie Tidyman-Jones
423 E. Muncie AVenue
Fresno, CA 93720
559-281-3588

From: Pat Cassen
To: Randall , David A.
Subject: Proposed CEMEX Rockfield expansion
Date: Saturday, February 8, 2025 2:25:44 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall
Senior Planner, Fresno County Department of Public Works and Planning
2220 Tulare Street
Fresno, CA 93721 Feb. 8, 2025

Dear Mr. Randall:

I write in opposition to expansion of the CEMEX Rockfield Project. Comment 89-1

The Central Valley, with its chronic air pollution problems, is not the appropriate place for a major blasting operation. Pollution exposure associated with particulate dust is a well-documented health issue; it causes respiratory inflammation and degraded lung function, which aggravate respiratory diseases such as asthma. The CEMEX operation cannot avoid the production of unsafe quantities of dust. Comment 89-2

The EIR notes (4.3 60) that "…the proposed project could potentially generate emissions that exceed the annual PM10, and the daily screening level for CO, PM10, and PM2.5. Therefore the proposed project could potentially result in a cumulatively considerable net increase of these criteria pollutants."

This conclusion requires mitigation measures, so a 'Fugitive Dust Control Plan' is projected to render the pollutant levels "less than significant". Comment 89-3

Three points regarding this mitigation plan should be noted:

1. The mitigation plan is projected to reduce daily emissions of PM2.5 a mere 1.5% (.015) below threshold, and similarly marginal amounts for other pollutants. This is reminiscent of CEMEX's mitigation projections for the rejected Jesse Morrow proposal, for which mitigations were calculated to nudge the pollutants to barely below threshold for significance.

2. Dust mitigation essentially requires the application of copious amounts of water. It is up to the County to monitor the effectiveness of the plan. The record shows that CEMEX cannot be relied upon to faithfully employ the mitigation plan. CEMEX has been cited for multiple air pollution violations (e.g., in Victorville, CA, Fairborn, OH and, more recently, Boulder, CO.) Although each violation required CEMEX to pay a few millions of dollars in fines, such penalties are apparently readily accommodated by this multi-billion dollar corporation. Comment 89-4

3. Blasting produces a major fraction of particulate pollution (presumably included in the projections for Aggregate Plant in Tables 4.3 15-17). But standard containment procedures for fugitive dust from roads and machinery operation are not effective for blast produced dust, so it is not obvious what measures are envisioned for this aspect of mitigation. As far as we can Comment 89-5

tell, the EIR does not address this factor.

Comment 89-5 Cont.

I urge the County to reject the application for the expansion of the CEMEX Rockfield Project.

Comment 89-6

Yours truly,
--
Patrick Cassen
patcassen@gmail.com

46999 Dunlap Rd
Miramonte, CA 93641

559 336 9886

From:	Bonnie and Tom
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR
Date:	Monday, February 10, 2025 6:41:09 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

February 10, 2025

To: David Randall, Senior Planner

Fresno Co. Public Works & Planning Dept.

The San Joaquin River is a treasured resource. The CEMEX Rockfield expansion will change that. It will extend the contract to 100 years, and blast a 600 foot deep pit so they can continue mining. The area is popular for recreation, such as hiking, biking, fishing, and swimming. The city of Fresno does not have enough parks, so many people use this river area to recreate. Air pollution from rock dust and vehicles, water and aquifer pollution from blasting, sound from blasting, and road damage from trucks will all contribute, making this an undesirable project. Will the pit be filled in? Some say, “No one now alive will be here to see it”.

Comment 90-1

Comment(s) 90-2, 90-3

The Dragonfly Golf Course, Copper RiverCountry Club and San Joaquin River Conservancy and Trust are all close by and offer recreational activities. We must stop this greedy international company with a poor environmental and labor reputation from continuing to pollute our county.

Comment(s) 90-4, 90-5

Thank you for your time

Bonnie Douglas

1427 N. Poplar Av.

FresnoCA 93728

From:	Marianne Kast
To:	Randall , David A.
Subject:	CEMEX Rockfield Expansion, Environmental Impact Report No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667
Date:	Monday, February 10, 2025 10:52:47 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I am concerned with several aspects of this project. Primarily however, it seems that since 90% or more of both the quarry and plant sites are environmentally disturbed due to longtime mining operations, the County of Fresno, by issuing this DEIR, is declaring the sites unworthy of reclamation for the next 100 years. Comment 91-1

The sites are eyesores on the San Joaquin River in Fresno county, where over the past 40 years, citizens, governmental agencies, and elected officials have worked tirelessly to restore and protect this natural resource. According to the San Joaquin River Conservancy Act (1992): Comment 91-2

"…the San Joaquin River, its broad corridors, and its prominent bluffs constitute a unique and important environmental, cultural, scientific, agricultural, educational, recreational, scenic, flood water conveyance, and wildlife resource that should be preserved for the enjoyment of, and appreciation by, present and future generations."

Now, visitors have finally gained more and easier access to the river (Ball Ranch, Sumner Peck, River Center), yet this proposal condemns the river to 100 more years of unsightly destruction. Comment 91-3

Marianne Kast
5510 N. Fruit Ave. #109
Fresno, CA 93711
(559)270-7937

From:	Bayard Taylor
To:	Randall , David A.
Subject:	Objections to the CEMEX Rockfield 100-year permit
Date:	Monday, February 10, 2025 4:48:38 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

February 10th, 2025

To:
Mr. David Randall, Senior Planner
Fresno County Division of Public Works and Planning
<drandall@fresnocountyca.gov>

Re:
The draft of the Rockfield Quarry Modification Project Environmental Impact Report No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667

Dear Mr. Randall,

We are *deeply concerned* about CEMEX's application for a permit to expand operations at the Rockfield Quarry and extend their permit for those operations for 100 years. Comment 92-1

The timeframe
100 years is a long, long time. It's four or five generations. It's far longer than most people live. Comment 92-2

It would be short-sighted and foolhardy to approve a project of this magnitude without full transparency and thorough review. Comment 92-3

Lack of transparency
Our objection is not just the length of time this EIR proposes. We are also *deeply concerned* with the manner in which this project is being proposed. It feels like a back-door, smoke-filled room, sweetheart deal that will enrich a very few and damage the many.

Typical mining practices
The consistent pattern of mining companies is to *privatize profits* and to *socialize risks.* In other words, they Comment 92-4

- plan on lack of transparency by railroading at high speed the decision-making process -- consisting of [1] thousands of pages of highly technical words and of [2] very tight deadlines to blunt potential questions, comments and opposition from the public.

- obtain excessively long permits for operations which are not in the best interest of the surrounding community.
- extract as much wealth as possible from the site while at the same time degrading and despoiling the natural landscape where the mining operations occur.
- funnel the exorbitant profits to their own corporate owners and executives, leaving little or no benefit to the community from which they are extracting wealth.
- delay or refuse to restore and reclaim the land that has been degraded and despoiled by their operations.
- declare bankruptcy so they don't have to pay for cleaning up and restoring the mining site, burdening the local taxpayers and the state with the clean-up costs to restore the land (restoration which almost never happens).

Comment 92-4 Cont.

Our demands
Specific to *this* CEMEX project, we are demanding that you and the Fresno County Supervisors:

Comment 92-5

- REFUSE to grant a 100-year permit to the expansion and extension of the CEMEX Rockfield Aggregate mining site. A 100-year permit is patently absurd. That's saddling four to five future generations with a huge problem caused by greedy corporations, short-sighted planners, and/or politicians who are foolish or in the pocket of the mining companies. A ten-or-twenty year permit, with requirements for extending another ten years at a time, would be more reasonable.
- Before even considering approval of the permit, REQUIRE the mining company (CEMEX) to commit a large deposit of money to a clean-up fund before the project starts. Also, you need to REQUIRE the mining company (CEMEX) to commit to contributing money on a monthly or quarterly basis to provide for clean-up of its own mess or to cover for lawsuits against the company for harms or violations of the law. To wait until all the environmental and health damages have already happened is patently absurd. CEMEX needs to build up a clean-up "superfund" account, managed by fiduciary professionals (an account which is impervious to being raided by politicians) if they want to do business in Fresno County.

Comment 92-6

- Before the project is even provisionally considered, INSIST that the project NOT ruin or drain our already-depleted groundwater aquifers. "Water is life," as the Indigenous People say. We are totally dependent on water for living and for the main business of the Central Valley -- farming. But California's Central Valley aquifers are extremely stressed and are extremely vulnerable given climate change/global warming. Furthermore, our Central Valley aquifers are extremely shallow (in some cases only about 100 feet deep) -- and CEMEX is proposing an open-pit mine 600 feet deep, the "height" of a 43 story building! That's 500 feet deeper than the aquifers here! A 600-foot open pit mine has the potential to drain all the groundwater in the vicinity. To give a foreign company a 100-year permit to foul or drain our groundwater supplies is folly of the first order.

Comment 92-7

Comment 92-8

Other extremely important factors not mentioned in this short letter must be considered. CEMEX should not be allowed to ram through the project approval process without adequate public transparency. We cannot allow them to destroy forever our groundwater supply, the San Joaquin watershed, and the natural beauty of this place.

Comment 92-9

Sincerely,
Bayard Taylor and June Taylor
35891 Hopewell Road, Yokuts Valley, CA 93675

February 10, 2025

David Randall
Senior Planner
Fresno County Department of Public Works and Planning
2220 Tulare Street
Fresno, CA 93721

Dear Mr. Randall:

I am writing to you to oppose the expansion and extension of the CEMEX Rockfield Project as it is specified in the published EIR. Comment 93-1

The production of unsafe levels of dust is unavoidable with such a project and even the EIR's meager mitigation efforts involve huge amounts of our area's precious water resources. This project threatens the respiratory health our residents, who already suffer from our poor air quality. It threatens our access to adequate potable water and chemically-acceptable crop-irrigating water supplies in an area extending out an unknown distance from the project site and into a reputed "breadbasket".

Further, the above does not even consider CEMEX's poor record in making good on promised mitigation efforts in the first place (e.g. Boulder, Colorado's "fugitive" dust storms: https://coloradosun.com/2024/10/22/cemex-lyons-boulder-county-permit-revocation/). Comment 93-2

CEMEX also has a poor record in making good on reclamation promises, right here in California (e.g., the un-reclaimed Davenport plant on the coast) and world-wide. And who of us will even be around at the 100 year(!) end of the Friant operation to hold them accountable? If approved the timeframe of the project should be drastically cut to the order of 10 , not 100, Comment 93-3

years and should provide some means to guarantee that there will be sufficient CEMEX funds for reclamation.

Comment 93-3 Cont.

I am also concerned about the significant costs of the project to our tax payers. For examples:
** road repairs and new traffic controlling infrastructure will be necessary, and it does not appear that CEMEX will deal with these costs.
**monitoring the air and water quality will surely involve significant financial costs and hassles! (necessary increased staff, possible need for new monitoring sites , litigations, etc)

Comment 93-4

Finally, there should be serious consideration of the project's threat to the well-being of local wildlife and the peace and beauty of the region that lies at the heart of entries to 3 National Parks, a National Monument and the magnificent wilderness areas in the adjacent Sierras. These are invaluable assets that should not be lost, degraded or diminished!

Comment 93-5

Thank you for your consideration of my concerns,
Dotty Woolum

Dorothy S. Woolum
46999 Dunlap Rd
Miramonte, Ca. 93641
559-336-9886

From:	Mtunga, Tawanda
To:	Randall , David A.
Subject:	FW: DEIR PUBLIC COMMENT
Date:	Thursday, February 13, 2025 8:06:31 AM
Attachments:	image001.png

Please review and add to the DEIR comments for CEMEX. I already acknowledged receipt of the email to the individual that sent it.

Tawanda Mtunga | **Principal Planner**
Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4022 Direct: (559) 600-4256 Cell Phone: (559) 826-9265
Your input matters! Customer Service Survey

From: Hey its Nay <quintananaomi@gmail.com>
Sent: Wednesday, February 12, 2025 10:15 PM
To: Mtunga, Tawanda <tmtunga@fresnocountyca.gov>
Subject: DEIR PUBLIC COMMENT

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

To whom it may concern,

My name is Naomi Quintana, and I writing this comment as a concerned community member and environmental advocate to strongly oppose the CEMEX Rockfield Expansion along the San Joaquin River. This project poses serious and irreversible harm to our local environment, wildlife, and public resources.The San Joaquin River is home to a fragile riparian ecosystem that supports a wide variety of wildlife. The proposed expansion threatens several special-status species, including the burrowing owl, western pond turtle, western spadefoot toad, and numerous nesting birds. Habitat destruction from blasting and excavation will disrupt these species, some of which are already facing population decline. This expansion would further fragment an already vulnerable ecosystem, reducing biodiversity and weakening the resilience of our natural environment.Additionally, the project's excavation plans would create unstable slopes, increasing the risk of erosion and landslides. The long-term environmental consequences of soil destabilization cannot be ignored, especially in an area where the integrity of our land is crucial for both ecological and human health. Disturbing the geological structure of this region could lead to unforeseen hazards that we, as a community, will ultimately bear the burden of this change. Beyond the environmental consequences, this project would have lasting negative effects on the local landscape, traffic, and public infrastructure. The excavation would degrade the scenic vista of the San Joaquin River, a cherished natural landmark. It would also cause traffic congestion at key intersections, with no clear funding plan to mitigate these delays. These impacts diminish the quality of life for residents and visitors alike, with no guaranteed solutions to address them. This project is not a necessity, it is an irreversible gamble with our environment and community resources. I urge decision-

Comment 94-1

Comment 94-2

Comment 94-3

Comment 94-4
94-5

makers to prioritize the long-term health of our region over short-term industrial gains. Please reject the CEMEX Rockfield Expansion and protect the San Joaquin River for future generations.

Thank you.

Comment 94-5 Cont.

From:	STEVEN NEGIN
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR
Date:	Thursday, February 13, 2025 10:50:26 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 95-1

Thank you for allowing me to comment on the proposal for the CEMEX Rockfield Quarry Modification Project.
After reading the latest proposal, I have questions about the need to modify the current allowance and the need to extend it so far into the future.
As I'm sure you are aware, CEMEX is a multinational building materials company held in Mexico. It holds it's business in 50 counties. It was ranked in 2020 as the 5th largest cement company in the world.
That being said, it has options. It has other holdings in the US which produces 30% of its total operations.
As my father was involved in the concrete business, I am aware of the need for these products. I am also aware the need may increase as we work to decrease the use of wood products due to the climate changes especially in California. But that does not mean that we should anticipate the future. Are we trading the impact on wood products for the impact on the local waterways?

Comment 95-2

Why is there a need to dig dipper at the current location with the increased risk to the environment as well as the neighbors - both human and animals? This is so close to a protected area that nothing justifies to the need to extend the current timeline for 70 years!

Comment 95-3

What is the need to expand the current agreement at this time? We can do it as we come to the end of the current agreement. What is the need for a 70 year extension?

Comment 95-4

I encourage you to allow them to continue their current project without any extension. Allow the current changes in the environment and the current political changes happening now to stabilize before stepping forward.
Once an agreement is accepted, it is difficult to walk back. Do not put yourself into a contract that does NOT need to be made. Granted, it is doubtful that many of us will be alive in 70 years, but this would be something that future generations will have to deal with. Isn't that justification enough to not approve this proposal?
Thank you.

Sallie Negin
559 432-5091
6057 N Sixth
Fresno, CA 93710

From:	Mtunga, Tawanda
To:	Randall , David A.
Subject:	FW: DIER PUBLIC COMMENT
Date:	Friday, February 14, 2025 7:45:57 AM
Attachments:	image001.png

Tawanda Mtunga | **Principal Planner**
Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4022 Direct: (559) 600-4256 Cell Phone: (559) 826-9265
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From: Sweet Pea <spea4304@gmail.com>
Sent: Thursday, February 13, 2025 7:30 PM
To: Mtunga, Tawanda <tmtunga@fresnocountyca.gov>
Subject: DIER PUBLIC COMMENT

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good evening,

I am a concerned citizen of the Fresno County who has recently discovered that CEMEX plans on creating a whole about two football feilds deep in the San Joaquin River. Comment 96-1

This concerns me as the blast will disturb local wild life, such as cranes, field mice, and fish, in their natural habitat. I recently volunteered with River Park Way Trust (@riverparkwaytrust on IG) to plant native trees and shrubbery along the San Joaquin River and would hate to see our good intentions be blasted away by CEMEX. Comment 96-2

Please consider the wildlife, the nature, and the people before you continue with something like this. I ask that you do more environmental research, as well as more public votes and hearings before the plan takes place. Comment 96-3

Thank you,
a concerned citizen

From:	Brenda Markham
To:	Randall , David A.; Brenda Markham
Subject:	"CEMEX Rockfield Quarry Modification Project EIR"
Date:	Friday, February 14, 2025 10:28:59 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

To whom it may concern

With regard to aesthetic impact as a result of blasting and deep mining I see that section 4.2.4 identifies the Plant site and Quarry site as "Vacant or Disturbed Land" and as such would not have any impact and no mitigation required.

Comment 97-1

How can this be? Destruction of further mining will only destroy the land; especially by blasting a 600' pit by the San Joaquin River. I think this is a poor excuse to avoid making any kind of statement saying that there's nothing to address with regard to aesthetics!

The same reasoning goes with 4.2.3- just because there's no conflict with zoning for forest land,timberland, or timberland production doesn't mean there's not going to be destruction to the surrounding area. Of course there's going to be visual impairment of the land!!

Explain how you are going to mitigate the destruction you will generate over the next 100 years.

Brenda Markham

From:	george sward
To:	Randall , David A.
Subject:	CEMEX Quarry Project EIR
Date:	Friday, February 14, 2025 5:27:28 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr Randall,

Comment 98-1

I am writing to express serious concerns about the impact of the proposed CEMEX quarry expansion. I urge your office to recommend not approving the project due to the significant impacts noted in your letter and others in the draft EIR [of >1000 pages!].

As a long time resident of Fresno County I have already seen the impacts of urban sprawl into eastern Fresno County. As a hiker and birder I see the effects on the river of the current operations [noise, altered habitats, heavy traffic and damages to Friant Rd]. My husband, George Sward, regularly kayaks on the SJ River and sees more directly the impacts of past and current gravel mining on the river. The impacts of a 100 year project that digs down potentially 600 ft into the riverbed are mind boggling! The planned "mitigations" for such a lengthy project cast reasonable doubt on how well and whether they will actually take place! And in the meantime, people, other animals and the physical environment are impacted for many, many decades!

I am not an engineer nor do I have the expertise to analyze such a lengthy report. But I can see what has already taken place and what continues to take place. The proposed project is too big, too damaging and too lengthy to assure true mitigation and accountability. I urge your office to state this in your report.

Thank you for your efforts,

Linda [and George] Sward, Kingsburg, CA 93631

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This email has been checked for viruses by Avast antivirus software.
https://urldefense.com/v3/__http://www.avast.com__;!!HRg2s0N7wg4sn4Q!tF6EE5_eCwQHmLREut1MdTt3K1kQEvCgyrvNcLDTTTrnYa8g-MpypkIKeGXON1azezROt9AjIg7opEfMvKU8hlUP$

From:	Chris Howes
To:	Randall , David A.
Cc:	district1@maderacounty.com
Subject:	Cemex Expansion
Date:	Saturday, February 15, 2025 9:03:30 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall:

As a concerned citizen and resident of this area I must protest the expansion of the Cemex Rockfield quarry. Converting this facility to and explosive methodology will do far more harm to the people, landscape and environment that adding 55 jobs will bring benefit. My entire career was spent leading clim operations for State Farm Insurance all over the United States and, in my professional opinion, the increased risk of blasting in the area may not be tolerated by many homeowners' carriers. Yes, of course I read the mitigation plan on the DEIR but that only addresses explosions/pyrotechnics on their site. Granted, at first blush 350 acres of rock does not seem to be much of a wildfire risk, but when someone ignites an illegal bottle rocket it's usually not the igniter's house that burns; it's someone adjacent to their property! We also need to consider the explosive vendor will be transporting their hazardous materials through Fresno County, all the way increasing the risk of an accident and subsequent wildfire.

Comment 99-1

Comment 99-2

With the Pallisades Fire fresh in everyone's memory this is not the time (and probably never will be) to add to the public danger in the highly sensitive geographical area.. One las thing to consider; having lived all over the country Fresno does not exactly have a stellar image, but it's improving. Do we really want to be known for the second deepest rock mine in California?

Comment 99-3

Thank you,

Chris Howes
41189 Pomegranate Court
Madera, CA 93636
559-706-1999

From:	Matthew Ethen
To:	Randall , David A.
Subject:	Opposition to Cemex expansion
Date:	Sunday, February 16, 2025 9:29:44 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Since moving to Fresno in 1989 from water-feature abundant Minnesota, I have been dismayed by the neglect of the San Joaquin River. I am a River Parkway member and hope that the Friant to 99 uninterrupted ribbon can...someday...become a reality.

Comment 100-1

Expanding the Cemex operation would disastrously limit this possibility and become another example of "Why can't Fresno have nice things?" Playing devil's advocate for the project, can we identify how many "additional jobs" and/or net positive economic impact we could expect? The potential for the San Joaquin River to become an attraction and "something nice...." for Fresno area citizens and visitors seems -- as ever -- untapped.

Please forward this to our Fresno County Supervisors.

From:	Lee Liddle
To:	Randall , David A.
Cc:	Lee Liddle
Subject:	NO ON CEMEX
Date:	Sunday, February 16, 2025 11:30:41 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. David Randall

I strongly oppose any and all proposals to blast and excavate on or near the San Joaquin River. This land has been abused long enough. Cemex should pay all costs to restore and improve the property they have damaged.

Comment 101-1

Sincerely,

Lee D. Liddle
Fresno, CA 93720

From: Brian Paulsen
To: Randall , David A.
Subject: Cemex Plans
Date: Sunday, February 16, 2025 9:03:48 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I want to voice my opposition to Cemex plans to expand by blasiing. The operation is already an eyesore and an obstacle to the San Joaquin River Parkway completion. The river is one of the remaining scenic and recreational sites left in Fresno County. I don't want it further abused.

Comment 102-1

From:	Cathleen Perez
To:	Randall , David A.
Subject:	CEMEX Proposal
Date:	Sunday, February 16, 2025 9:58:55 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am a resident of Fresno and would like to share my thoughts on the CEMEX blast mine proposal that will be voted on soon.

Comment 103-1

I am absolutely against this proposal for the following reasons:

1. The health of the San Joaquin River is at stake - the environmental impact will be devastating to humans, wildlife, and nature - Why is this company allowed to encroach on a wildlife preserve?

2. CEMEX states there is nothing they can do about the increased traffic impact in the intersections of Friant/Willow and Willow/Copper. These areas have a very large amount of traffic incidents currently and will just increase safety issues if CEMEX is allowed to begin their blast mine proposal.

Comment 103-2

I urge you to NOT allow this proposal to move forward.

Thank you,
Cathleen Perez

From:	Stephanie Salazar
To:	Randall , David A.
Subject:	Cemex Rockfield Expansion
Date:	Sunday, February 16, 2025 9:04:09 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good morning Mr. Randall,

I'm sure if this message will reach you in regards the public comments against the Cemex Rockfield Expansion proposal. But I just heard of this project this morning. Comment 104-1

As a former Fresno County Employee, and current Madera County Resident who lives within a 5 mile radius of this mining operation, I am strongly opposed to the expansion project and the method of rock quarrying.

My husband and I hike and ride our bikes to the San Joaquin River from the Tesoro Viejo community regularly. From the hills that overlook the River, you can see, hear, and smell the quarry…at its current state of operations.

With their proposed changes, I fear that the operations would have a significant negative effect on the noise pollution experienced by humans and wildlife in the area. Comment 104-2

This location is one of the closest places that one can visit for peace and serenity that doesn't require a major trip out of town. Comment 104-3

Needless to mention the destruction of the beautiful natural habitats that surround the river and the plant would have other negative effects. I would highly suspect, that if this quarry were a completely new plant, and not a 100 year old grandfathered operation, that the issue for permit would be denied.

Please take my concern to heart. I do not want this expansion project in my backyard. It's not good for the inhabitants in the area who live and breathe here.

Thank you kindly,

Stephanie Salazar

From:	Zach Baroni
To:	Randall , David A.
Subject:	Public Comment: Cemex Rockfield Quarry - EIR 7763
Date:	Monday, February 17, 2025 3:07:32 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

To whom it may concern,

Comment 105-1

I am providing a public comment regarding EIR 7763. I would like to express my opposition to the proposed Rockfield Quarry modification project. This project will degrade the environment and the water quality for me, a resident who lives near the proposed project and uses water that flows near the site for drinking. The San Joaquin River is a natural resource that I use for recreation and for water access, since my drinking water comes from wells filled by the San Joaquin. The proposal of a 600-foot deep pit near the San Joaquin threatens environmental damage and degradation of water quality. The CEMEX, the industrial company, has been cited numerous times for environmental infractions, and I cannot trust that they will not continue to break environmental law and threaten the safety of my drinking water.

Comment 105-2

Comment 105-3

Furthermore, this project threatens the environment for several animal species, including the Western pond turtle and burrowing owl, both vulnerable species whose native environment will be disrupted. Considering that the aggregate reserves we have are more than sufficient, it seems that this mining project does not have a legitimate purpose. We have enough aggregate reserves; there is no reason to threaten the water and the environment near the San Joaquin river, particularly to a company that repeatedly breaks environmental regulations, and uses its massive profit margin to merely pay fines rather than ceasing from breaking law.

Comment 105-4

Comment 105-5

Therefore, I reiterate my demand that this project be rejected outright. I'm sorry that people spent so much time and money studying a project which obviously should never have been considered, but that's not my fault. Protect citizens and protect the environment we depend on, especially for our water.

Thank you

Zachary Baroni

7455 N. Farris Ave

Fresno, CA, 93711

From: Mtunga, Tawanda
To: Randall , David A.
Subject: FW: CEMEX Rockfield Quarry Modification Project EIR
Date: Tuesday, February 18, 2025 8:36:13 AM
Attachments: image001.png

The individual below has questions included in their comments.

Tawanda Mtunga | **Principal Planner**
Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4022 Direct: (559) 600-4256 Cell Phone: (559) 826-9265
Your input matters! Customer Service Survey

From: Johnathan Benson <johnathanbenson7@gmail.com>
Sent: Monday, February 17, 2025 4:44 PM
To: Mtunga, Tawanda <tmtunga@fresnocountyca.gov>
Subject: CEMEX Rockfield Quarry Modification Project EIR

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK
Report Suspicious

Hello,

My name is Johnathan Benson, I am a science teacher and nature enthusiast in this community. I am deeply concerned about many of the impacts that this proposed mining expansion would have on our local communities, both human and ecological. Below, I have outlined some of my concerns and questions about this proposed expansion that I would like to see addressed. Comment 106-1

1. Does this open-pit mine have to be built in this, notably sensitive, location? Is there a particular reason that the underlying bedrock is different from that from other areas more far-removed from the river? Is the water from the river essential for the operation of the aggregate processing? My question is essentially, does this have to happen here? Or could it happen in a drier place less prone to the myriad problems (stream dewatering, groundwater contamination, noise pollution effects on riparian life, etc.) that are specific to this location? If it is a question of marginally increased cost, then I oppose it, but if there is some reason it has to be in this location then I would be less concerned. I have not seen a thorough rationale for why this mine has to exist here, other than the fact that it already does.
2. I enjoy swimming and paddling on the San Joaquin River, I enjoy biking alongside the San Joaquin River, and I enjoy the natural beauty of the areas surrounding the San Joaquin River. All of these benefits, available to the community at large, would be reduced by the expansion of this mining operation. A big part of the natural beauty for me is the biodiversity present in the area. I am certain that I will see less wildlife in the area as it is

Comment 106-2

disturbed significantly by more intensive mining. Rather than recharacterizing the often blighted San Joaquin River into a cultural attraction, this project would further diminish the ecological diversity of this area for a century to come. I understand that there are mitigation strategies in place for the protection of particular species, but how can you account for the opportunity cost of decreased future value of a cultural attraction. Fresno is undoubtedly growing, and will continue to do so. Has the loss of tourism potential due to impacts to the scenic vista been included in the cost benefit analysis for this project? I would like to see thorough estimation of the social and economic benefits of re-wilding the impacted areas of the riparian zone as compared to the benefits provided by the mine expansion.

Comment 106-2 Cont.

3. The consistent noise of bedrock blasting would be detrimental to my enjoyment of recreational activities near the river, particularly in the, recently reopened, Ball Ranch area. I have seen many other individuals and families enjoying a day of quiet recreation near the river, this would be negatively impacted by the constant noise of mining, processing, and additional truck traffic. Is there a set of numbers provided that would give the volume (in decibels) of allowed noise at different locations from the mining operation?

Comment 106-3

4. One of the major drivers of health issues in the Central Valley is poor air quality. This would be worsened by the expansion of mining operations in this area. The release of silicate dust is a guarantee while blasting granite and that dust would add to the already large volume of dust in the air from agricultural activities in the area. This is especially concerning with several schools within a few miles of the site. Additionally, suburban expansion continues to encroach in this area which will mean even greater human exposure as this mine operates for the next 100 years. I would like to see estimates of the added human health risk of dust exposure from mining operations over the next century, especially as connected to projected developments in the area.

Comment 106-4

Thank you for your time and consideration. I hope that you will be organizing additional public comment opportunities, especially in-person, so that county leadership can see how seriously their constituents take this issue.

Comment 106-5

From:	Francesca Cannizzo
To:	Randall , David A.
Subject:	CEMEX ROCKFIELD QUARRY - “EIR 7763”
Date:	Monday, February 17, 2025 8:51:16 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hello,

I am providing a public commenting regarding EIR 7763. I am an ecologist and previously an environmental planner. I am in shock that county officials would claim this EIR is sufficient for publishing. How could the people involved with writing this EIR claim they have any concept of impacts 100 years out? To adequately evaluate impacts on environmental resources for 100 years that would take much more extensive research than proposed in this EIR. Environmental modeling is a standard that could be used to determine impacts to air quality, biological resources, and hydrology. Those models should be employed prior to the quarry inflicting damage that cannot be reversed, not punt this effort down the road when it's too late. Also, the models should be conducted using standards agreed upon by the scientific community, not governed by the company that benefits from the results being in their favor. As a citizen of Fresno, I have concerns of why one of the areas with the worst air quality in the county is supporting projects to further degrade our air quality.

Comment 107-1

Comment 107-2

Additionally, the burrowing owl has been listed as a candidate species under the California Endangered Species Act and that is not reflected in this EIR.

Comment 107-3

The mitigation measures listed for spadefoot toad and western pond turtle I believe are not adequate to make the impact less than significant. There is EXTENSIVE research showing that pond turtles and their nests are extremely hard to detect. To actually protect the turtles, surveys should be done months in advance to place transmitters on turtles to see where they are operating around the quarry. How can this EIR claim they are not having an impact when they are not taking the necessary steps to detect such a cryptic species. And then continue to see if they come back to the work site. The way the mitigation measure (4.4-1b) is written it leaves open ended on how to prevent relocated animals from reentering the work area. As someone who has personally relocated many animals, and from learning about people doing this work such as efforts in Yosemite National Park to relocated turtles, they will come back to where they were captured.

Comment 107-4

I plan to attend any future meetings regarding this EIR to help make sure county officials don't brush off these comments by writing a few sentences saying "we disagree". The public expects to see how the county is actually addressing our concerns.

Comment 107-5

From,

Francesca Cannizzo
1948 North Arthur Avenue,
Fresno, CA 93705

From: Soph Fro
To: Randall , David A.
Subject: CEMEX Blast Mine
Date: Monday, February 17, 2025 9:58:57 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am a resident of Fresno County and am deeply concerned about the proposed blast mine near the San Joaquin River. This is an incredibly important landmark and ecological site. There is already more than enough aggregate to be obtained through permitted sites to meet Fresno's (and Madera's) expected needs for the next 50 years. I cannot understand why CEMEX, a company with a spotty history and more than 3 environmental violations per year for the last 20 years to the tune of $43 million in fines, should be allowed anywhere near a river as important to our city. It is neither needed nor wanted.

Comment(s)
108-1
108-2

I have seen the damage done by mining companies firsthand from my time growing up in Alaska. Fresno is already affected by urban sprawl and a lack of green spaces. It does not need a giant open pit near one of our most important land marks and important waterways. Please do everything in your power to prevent this plan from happening.

Comment
108-3

Thank you for your time,
Sophia Froelich

From: mikeander28224@gmail.com
To: Randall , David A.
Subject: Comes rock pit proposal
Date: Monday, February 17, 2025 1:16:16 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Sent from my iPhone

Good morning: I don't believe the idea of allowing an enormous pit next to the San Joaquin river is in the best interest of our community. The San Joaquin river is an unbelievably resource that, so far, has not been fully taken advantage of. The long term efforts to build improved public access to this resource are indeed VERY slow but happening nonetheless. The excavation of a huge pit next to the river would not only be a tremendous eyesore but a serious potential hazard as well. The potential for communication between the river and a rock pit is a real threat. The banks of rocks pits are notorious for cave-ins! The river is a rare and unbelievable opportunity for public use that could last for generations to come. It would be VERY poor planning to place our river at risk for something that,is not only unnecessary, but a bad environmental idea to begin with. Please don't allow this proposal to continue.

Comment 109-1

Comment(s) 109-2 109-3 109-4

Comment 109-5

From: dduckworth@desac.com
To: Randall , David A.
Subject: Proposed Cemex Gravel Project - No!
Date: Tuesday, February 18, 2025 11:38:19 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 110-1

I can’t imagine a County or City accepting a proposal as stated.
With water, air quality and environmental concerns the project would create.
We have enough air pollution and river problem's without adding an addition burden to the City/ County.
Please do not allow the project.
Donna Duckworth

From: Jim Durando
To: Randall , David A.
Subject: CEMEX EIR
Date: Tuesday, February 18, 2025 10:56:55 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr Randall on the EIR,

Comment 111-1

1) Cemex states that they will not mitigate the traffic congestion

That is ludicrous, This very wealthy company needs to mitigate the traffic congestion on Willow to Friant Road.

There is precedent in this county for this requirement. Table Mountain helped finance turning Friant Road into a four lane highway. Vulcan at the Austin quarry on road 145 and 41 has been required to make modifications on Road 145. They are required to finance Highway 41 to a four lane road when the county is ready to begin construction.

Comment 111-2

1) At the Friant Willow junction there should be two left lanes made for turning onto Willow from Friant. The trucks should only be allowed to use one lane.
2) A requirement that the entire Willow Road between Friant and Copper be expanded to 4 lanes.
3) A requirement that the north direction on Willow be expanded to two lanes from International to Copper.

Comment 111-3

4) There is a concern with increased heavy truck traffic effecting the traffic safety near the schools on International and Willow.

Comment 111-4

If Cemex cannot afford this they have no business mining on the river. What happens if there is a catastrophe at the mining site? Will they say we don't have money to repair?

2) Impact on water tables for domestic residential wells.

Comment 111-5

The possibility of dropping water tables on the extensive dig is a huge concern for residents.

1) Cemex should install at every residential well a constant water level monitor. This should be monitored monthly by an independent contractor paid for by Cemex.
2) Cemex must provide a bond to protect every residence of this community. If the wells fail or have greatly reduced water production and the homes are no longer realistically habitable, protection for the homeowners must be in place before operations begin. Cemex must be liable and purchase the properties at high market value. There must be a penalty in place to be paid to the resident to cover costs of moving through no fault of their own.

Diane & Jim Durando

Cemex Rockfield DEIR Concerns

David Randall County of Fresno

1-The Friant and Willow and Willow and Copper intersections are referenced as sections of road that will be used by the trucks in the project. These intersections will not effectively handle the traffic loads that the Cemex project will create. Modifications should be made to create safe intersections and road improvements as needed before the project can start.

Comment 112-1

2-Why is Willow south of Copper not included in the study area intersections while the Friant Road study area intersections go to the south of Teague. Willow south of Copper is a busy road with a high school, middle school, elementary school and junior college along that stretch of road. Trucks from Cemex use that road currently and increased traffic will lead to more wear and tear on that road surface, increases air quality degradation and a more crowded road. It seems like including those intersections along Willow to Teague would have been an option.

Comment 112-2

3-Mitigation for Traffic signals at Friant and willow needs to be completed before the traffic increases.

Comment 112-3

4-Pavement modifications between North Fork Road at Friant Road and Copper River Drive needs to be completed due to the increased wear that the project truck traffic will generate.

Comment 112-4

5-Willow avenue north of Copper has only one northbound lane with a tall cement curb. With no shoulder any stopped vehicle will block that road. There is no shoulder to move onto.

Comment 112-5

6-With the lack of adequate road surface, controlled intersections, and lane widening as needed the area leading to and away from both the plant and quarry seem inadequate to provide the safety and reduced greenhouse gas emissions that should be part of this project. Saying that it will be "fixed" when financially possible is not a solution. Saying that the impact is unavoidable is not the answer. Eliminate the impact first.

Comment 112-6

7-prehistoric bowl mortar (P-10-007115) Where is the prehistoric bowl and mortar (P-10-007115) that was found in the quarry site? Was it returned to a local tribe? Have any tribal archeologists been notified of that find?

Comment 112-7

8-As required by the current CUPs, there are appropriate traffic warning signs at access roads for both the Plant Site and Quarry Site. Existing company identification signs are located at the entrance roads to both the Plant Site and the Quarry Site in accordance with county signage regulations. There are no signs present at the quarry site at all. Who monitors/enforces the conditions of the CUPs?

Comment 112-8

9-Perceptible levels of ground vibration and air overpressure at some locations close to the quarry will be present. Is there a map showing where this impact will occur? I would like some specifics as to amount or vibration and how much air overpressure. Have actual tests for these explosions been done in situ? Are these computer models that they are basing this on?

Comment 112-9

10-Their mitigation states that structures and wells will be monitored. That is very vague. What will they be monitoring? How will they monitor the structures and wells? What type of equipment will be used to do the monitoring? There needs to be specific guidelines as to what will be looked at and how changes will be addressed. It should be a non-cemex entity doing this independent work.

Comment 112-10

11-Anywhere in the DEIR that it says that monitoring will be the mitigation needs to be reevaluated and done with specificity. Monitoring is too vague a term and means nothing. A monitoring plan with guidelines, methods, procedures, equipment and actions based on the data is needed. Just using the term monitoring as a type of mitigation is lazy and inadequate.

Comment 112-11

12-Has a blasting quarry operating on a mined-out gravel pit like this been done in California? It seems like a similar quarry would have many answers to the questions arising?

Comment 112-12

13-In the ground water and surface contamination from blasting there are a few major components missing that need to be considered. What are the explosives that are being used? What are the sizes of the various charges they are using? What are the chemical components that the blasting produces? What are the chemical compounds that will contaminate the surface and ground water? None of this is mentioned in the report. Has any blasting been done on the quarry site to determine ground vibration levels and the distance they are travelling from the point of ignition?

Comment 112-13

14-Who will monitor the ground water and surface water contamination? How will domestic wells and other ground water resources in the area be protected?

Comment 112-14

15-The impact blasting will have on salmonids is mentioned in regards to the reintroduced salmon in the San Joaquin River. Why is an old Alaska Department of Fish and Game study used? The substrate at the study site cannot be like what is at the quarry site. The river in Alaska is most like not that similar to the San Joaquin River in substrate, volume and flow. Has any actual testing with blasting been done for this DEIR in this area on the river?

Comment 112-15

16-Signage at the entrance of the quarry is nonexistent currently. There are no signs indicating an entrance to the quarry site from north or south. No signs showing trucks entering the road or quarry. The current CUP is not enforced.

Comment 112-16

17-All domestic wells in the area should be tested to provide a baseline for water quality and well production. Testing should be done quarterly during the life of the mining operation to monitor the impact on water quality and production.

Comment 112-17

18-Ambient noise should not increase. Increased truck noise, explosions and eventually plant operations will all increase noise in the area. Operating hours are not reasonable in an area surrounded by existing homes that have been present for over 40 years. Operating 16 hours a day in a suburban residential area should not be allowed.

Comment 112-18

19-Air quality will be impacted by:

Comment 112-19

Increased truck/tractor activity/dust PM10 PM2.5

Blasting PM10 PM2.5

Batch plant PM 2.5

Rock crushing /Dust PM 10 PM 2.5

Air quality will suffer with increase mining activity and trucking and equipment use in the quarry producing more greenhouse gas emissions.

Diesel exhaust is a major source of PM 2.5 a known health hazzard

Comment 112-20

20-Ambient Air Quality is monitored by the Air District. The closest station with data being used to monitor pollutants is the project site, Clovis-Villa station (Air Quality Station ID 06-019-5001. This station is located approximately 9 miles south of the project sites and measures a variety of air quality parameters. Looking at the PM 10 and PM 2.5 components the data in Table 4.3-2 Ambient Air Quality in the Project Area shows that the PM 10 values exceed state standards in the years 2013-2017. The PM 2.5 values exceed federal standards for the same years 2013-2017. There are two weaknesses to this information. The Clovis-Villa station is designed to monitor at a neighborhood scale covering an area of 0.5km to 4.0 km the station is about 9 miles away. It is confusing to have two different measuring systems used in an explanation so to convert to US standard measure for length the area covered by the monitoring station would be about 500 yards to 2.4 miles from the station. How does this measure anything from the Plant or Quarry site that is about 9 miles away? Why wasn't the air monitored at the sites of the projects. Some of the data was collected more than 10 years ago. There must be more recent data available. This information does not seem to provide an accurate value for PM10 or PM2.5 for the sites.

21-How can the Air Quality Control District monitor the sites for this DEIR without any monitoring equipment on the sites? There is no mention of monitoring or any data from monitoring other than the Clovis-Villa station and the Fresno Garland site.

Comment 112-21

22-4.3 Air Quality

Goal OS-G To improve air quality and minimize the adverse effects of air pollution in Fresno County.

Comment 112-22

Policy OS-G.11 The County shall continue, through its land use planning processes, to avoid inappropriate location of residential uses and sensitive receptors in relation to uses that include, but are not limited to, industrial and manufacturing uses and any other uses which have the potential for creating a hazardous or nuisance effect.

In this case the county has allowed residential development by the quarry site. The CUPs for the site expired and now the county wants to create an industrial site in the midst of a suburban residential area. This is in opposition to the Goal OS-G for Air Quality.

23-4.4 Biological Resources

Comment 112-23

Fish-Only Gambusia and Micropterus were observed during habitat assessment. Why didn't they seine the pond to survey what is in the water? The assessment done was a visual observation of the surface of the pond.

Amphibians-western toad and spadefoot toads exist on the adjacent properties to the north and south. Without a thorough survey they would not be found.

Comment 112-24

Reptiles- pond turtles are in the ponds on adjacent properties and travel great distances overland. They should be present in the quarry site ponds. Western fence lizards are very abundant in the area and would be found in the quarry site as well

Comment 112-25

Avian-Tricolored black birds nested in the ponds by the thousands until a few years ago when the tules disappeared. Bald and Golden eagles do still use the area but are seasonal. Observing them would

Comment 112-26

involve looking at the right time of the year. Ospreys are using the pond to forage all year long. White Pelicans are visitors to the quarry ponds throughout the year as well. The survey ignores more than 5 species of ducks that use the pond as well as no mention of Canada geese.

Comment 112-26 Cont.

Mammals-Mountain Lions have been in the area for years. They use the area of the quarry, the riparian habitat along the river corridor and all of the habitats in the area. They were not sighted in the habitat assessment as it was performed. Trail cameras which are easily available and inexpensive would have been a good tool for the assessment to have incorporated instead of "observed" or not .

Comment 112-27

From:	George Hewett
To:	Randall , David A.
Subject:	Cemex Rockfield Expansion
Date:	Tuesday, February 18, 2025 5:07:49 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 113-1

Tuesday morning greetings, with a quick message to say I'm greatly concerned about any project that utilizes explosives/blasting methods, especially underground and especially in close proximity to a damsite. I'm no geological engineer, if such is the correct term, but just the same I have to wonder if there isn't a potentially "safer," for lack of a better term, method if such a project really needs to be completed at all. Sounds "suspiciously" as though it's yet another case of big business coming in and creating a big disruption of the "ecology," again, for lack of a better term, with the thoughts of big profits being the driving force.

Thank you --
George

From:	Debi Schmidt
To:	Randall , David A.
Subject:	Cemex blast mine proposal
Date:	Tuesday, February 18, 2025 2:32:44 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. Randall,

We live not too far from the Cemex blast proposal area. We are AGAINST it. Especially since it's not a necessary item that needs to be "mined" at this time, there is no shortage or huge demand that is not being satisfied. We do not want the noise or the disruption to the environment, plants, animals, people etc.

Comment 114-1

Comment 114-2

Thank you

Debi Jonigian-Schmidt

--

William L Schmidt ATTORNEY at LAW, P.C. Debi Jonigian-Schmidt | William L. Schmidt, Attorney at Law, P.C. | mail to P.O. Box 25001, Fresno, CA 93729 | Office:+1.559.261.2222 | Fax: +1.559.436.8163 | Email: djschmidt13@gmail.com

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From:	Kathryn Elliott
To:	Randall , David A.
Subject:	CEMEX"s Blast Mine Proposal
Date:	Wednesday, February 19, 2025 8:01:21 PM

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Report Suspicious

Comment(s)
115-1
115-2
115-3

I think this proposal is a terrible idea. Heavy loads of mined rock on Friant Road will tear the road up and we taxpayers will be asked to pay for its repair. New housing in the area will suffer air polluted with rock dust and the road is already burdened with with too much traffic. I hope you will see that CEMEX's plan is turned down.

Kathryn Elliott
Sanger

From: Ann Heiniger
To: Randall , David A.
Subject: CEMEX Blast Mine Proposal
Date: Wednesday, February 19, 2025 9:23:39 AM

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Report Suspicious

Dear Mr. Randall, February 19, 2025

I am writing to object to CEMEXs blast mine proposal. The current permit should not be extended or modified for the following reasons: Comment 116-1

Fresno / Madera counties do not need the aggregate. Our regional demand of 305 million tons for the next 50 years will be met by the 556 million tons of reserves already permitted at on the Kings River and at Austin Quarry.

CEMEX has been fined more than $43 million for 81 environmental violation since 2000. The draft EIR does not require them to have a reserve to pay for future damage, such as a breach between the mine and the river. No amount of money could compensate for the potential environmental damage! Comment 116-2

CEMEX has no plans to rectify the unavoidable impact to traffic on Friant. Comment 116-3

The visual blight on the landscape has encroached on an adjacent state ecological preserve. Comment 116-4

The constant dynamiting is not compatible with fish and wildlife or humans living near the site! Comment 116-5

Please do not extend the current permit and reject the proposal to modify it! Comment 116-6

Sincerely,

Ann Heiniger

Selma, CA

Comment
117-1

Absolutely NO on CEMEX!

Jonathan Gomez

Eric Nabbarette

Julian Isaiah Leas

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

February 25, 2025

Ms. Judy Leas
6648 E. Kings Canyon Rd.
Fresno CA 93727

Comment letter on CEMEX Rockfield Quarry EIR 7763

Ms. Leas

We received your enclosed 2nd letter on February 19, 2025, regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From:	Jenine Cortopassi
To:	Randall , David A.
Subject:	Cemex Rockfield Expansion
Date:	Thursday, February 20, 2025 11:52:59 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I, along with many neighbors living at Copper River Ranch, are quite concerned about the possible Cemex Rockfield expansion.
Between traffic congestion along Friant Road, safety concerns, noise pollution, extreme wear on the roadway AND environmental concerns I am writing to have you consider alternate plans for Cemex.

Comment 118-1

PLEASE, PLEASE, PLEASE take this request seriously!!!

Concerned longtime resident of Fresno County,

Jenine Cortopassi

George Folsom
1595 W Ellery Way
Fresno California 93711
February 16, 2025

David Randall, Senior Planner
Fresno County Public Works, and Planning Department
Development Services and Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

Subject: Opposition to Proposed Modification of CEMEX Rockfield Quarry (EIR No. 7763 and CUP Nos. 3666 and 3667)

Dear Planning Commissioners

I am writing to express my strong opposition to the proposed modification of the existing CEMEX Rockfield Quarry, including Environmental Impact Report (EIR) No. 7763 and Conditional Use Permit (CUP) Application Nos. 3666 and 3667. Comment 119-1

First and foremost, the expansion would exacerbate air quality issues, particularly dust and particulate matter, which pose serious respiratory risks to nearby residents. Increased mining operations will generate higher levels of fine dust particles, which have been linked to asthma, lung disease, and other health problems, especially for vulnerable populations such as children and the elderly.

Additionally, the modification poses a substantial threat to local water resources. The expansion could lead to groundwater depletion, contamination from mining runoff, and long-term effects on nearby ecosystems. Given the ongoing concerns about water scarcity and conservation efforts in our region, approving this modification would be irresponsible and harmful to the local environment. Comment 119-2

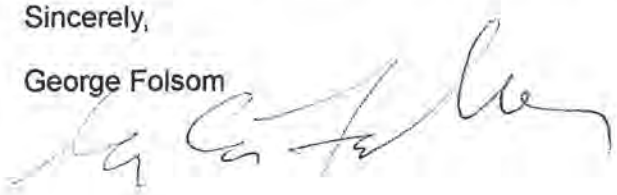
Traffic and noise pollution are also critical concerns. Increased quarry activity will result in more heavy truck traffic, further straining local infrastructure, increasing wear and tear on roads, and elevating the risk of accidents. Comment 119-3 Furthermore, prolonged exposure to blasting and excavation noise will significantly diminish the quality of life for residents in surrounding areas. Comment 119-4

Beyond these immediate impacts, approving this modification sets a dangerous precedent for future industrial expansion at the expense of our environment and community. We must prioritize sustainable development that aligns with long-term public health and ecological conservation goals rather than allowing corporations to expand operations without fully addressing these adverse impacts. Comment 119-5

For these reasons, I urge the Planning Commission to reject the proposed modification of the CEMEX Rockfield Quarry and uphold the best interests of the community and environment. Thank you for your time and consideration.

Sincerely,

George Folsom



County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

February 21, 2025

George Folsom
1595 W Ellery
Fresno CA 93711

Comment letter on CEMEX Rockfield Quarry EIR 7763

Mr. Folsom,

We received your enclosed letter on February 20, 2025, regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From:	Debra Keldrauk
To:	Randall , David A.
Subject:	CEMEX
Date:	Thursday, February 20, 2025 9:06:44 AM

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Report Suspicious

Mr. Randall,

It has come to my attention that CMEX has applied for a permit to convert to a blast mine. This is such a terrible idea for the Fresno/Friant area. With homeowners insurance in California already at a super premium and many consumers in CA being denied, this would only add to the problem. CEMEX is already a problem working as a mechanized mine, in my opinion. I know countless citizens who have had rocks pop up on that road between Fresno and Friant, cracking windshields and creating yet another insurance issue: the high cost of auto insurance. Face it: everything in California is horribly expensive. We need a break. If CEMEX wants to blast they need to find another site in another city, they have been here since the 1920's I say enoug already. Please do not consider approving this new permit to blast.

Comment 120-1

Comment 120-2

Comment 120-3

Sincerely,

Debra Keldrauk
7830 N Woodrow Ave.
Fresno, CA 93720

From:	Brenda Markham
To:	Randall , David A.
Cc:	Brenda Markham
Subject:	CEMEX ROCKFIELD QUARRY MODIFICATON PROJECT EIR
Date:	Thursday, February 20, 2025 4:15:59 PM

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Comment 121-1

With regards to the potential impact of water quality (section 2.5.6).
If the wall of earth separating the river and the open pit collapses, the impact of the water quality would be devastating. CEMEX claims they would "monitor" this; there has been no money set aside to mitigate this).
This is totally unacceptable.

Brenda Markham

From:	Brenda Markham
To:	Randall , David A.
Cc:	Brenda Markham
Subject:	CEMEX ROCKFIELD QUARRY MODIFICATON PROJECT EIR
Date:	Thursday, February 20, 2025 4:20:46 PM

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Report Suspicious

According to CEMEX, There are two unavoidable impacts: Comment 122-1
1)The pit itself (which in and of itself is destructive and not aesthetic at all!)
2) Traffic delays (due to increase in truck trips) both at Friant and Willow and Willow and Copper. Comment 122-2
CEMEX apparently is not rectifying these impacts, namely because they don't have the funds!
Again, totally unacceptable
Brenda Markham

From:	Local Waterkeeper
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR
Date:	Thursday, February 20, 2025 9:46:25 PM
Attachments:	CEMEX Quarry Expansion - Public Comment Letter - LWK.pdf

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good evening David,

I'm sending you my response to the CEMEX project's draft EIR.

Thank you,

LWK

To: David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

DRandall@FresnoCountyCA.gov

RE: Cemex Rockfield Quarry Modification Project EIR

I would like to bring my concerns to the County of Fresno regarding the CEMEX Rockfield Quarry project. My concerns center around the following analyses:

1. Hydrology and Water Quality
2. Biological Resources
3. Land Use and Planning

Hydrology and Water Quality

Comment 123-1

The Draft EIR did not adequately analyze the Project's impact to the beneficial uses and water quality of the San Joaquin River. Specifically, I am concerned that the River Supply Channel's impact was not analyzed in this draft EIR. Excluding an analysis of River Supply Channel makes the draft EIR inadequate. I request that the Lead Agency conduct further analysis.

The River Supply Channel connects the Plant Site to the San Joaquin River (SJR) in two ways. According to the draft EIR, this Plant Site receives water from the San Joaquin River via a supply channel (see DEIR, Section 4.10.1.4 Current Operational Water Uses and Supplies - Plant Site Water Use and Supplies). However, this direct connection does not flow *from* the Plant Site, but rather *towards* the Plant Site. It can be presumed that the channel is sloped towards the Plant Site, though this is not explicitly stated. The second connection is the confluence/intersection of the supply channel and Little Dry Creek (about 0.3 miles west of the Plant site), where flows in Little Dry Creek (LDC) may transport water from the river supply channel to the SJR. The fact that Little Dry Creek intersects with the Supply Channel is not mentioned in the draft EIR at all. This confluence/intersection may not be a concern if the water quality of the River Supply Channel (RSC) is within acceptable levels, and if the Plant Site's discharges to the RSCl meet the requirements of the Industrial General Permit and any requirements from the California Department of Fish and Wildlife. Unfortunately, the Draft EIR and its appendices do not discuss the water quality of the River Supply Channel.

The River Supply Channel may be a pollutant source that regularly contributes to the degradation of the San Joaquin River regardless of season, but the draft EIR does not discuss this or analyze this potential impact. Taking a look at available aerial imagery shows that the RSC's pond is often discolored (see Exhibit 1). According to these aerials, the discoloration extends 0.20 miles upstream, where the confluence of LDC and the RSC is located. Both

Comment 123-1 Cont.

images in Exhibit 1 show the discolored water commingling with LDC flows, and the image taken on June 23, 2023 shows LDC flowing through a discolored section, over a weir, and out towards the SJR. It could be argued that the weir prevents overflows for a certain rain event or flow rate, or that Best Management Practices are in place to prevent contaminants from entering the supply channel. However, the EIR does not even mention the potential for commingling at this location– let alone the impacts this commingling may have on the San Joaquin River.

There are multiple sources of flows in Little Dry Creek that may cause an overtop of the weir near the Plant Site. These sources include: (a) flows from Big Dry Creek Reservoir, (b) flows from the Clovis Recycled Water Plant, (c) potential flows from Millerton New Town, and (d) rain events (see Exhibit 2). This list may not include all sources, but this list does show that flows may occur in all seasons and are not storm dependent. For example, flows from the Clovis Recycled Water Plant may occur throughout the year, and flows from the Big Dry Creek Reservoir may occur whenever the Fresno Metropolitan Flood Control District must dewater the reservoir. The exhibit I have included shows flows occurring during the Winter *and* during the Summer, where the Summer flows are visibly overtopping the weir. Furthermore, it is likely that storm-related flows overtop the weir regularly, but aerials can't capture those events because of cloud cover during storm events. However, the Lead Agency may inspect the weir during storm events to confirm how frequent overtopping happens.

This may be a pre-existing issue as the Site's Industrial Stormwater Pollution Prevention Plan (SWPPP) does not include this commingling point as part of its Project Area. I don't know the reasoning behind not including this in the Plant Site's SWPPP. If there was no risk for contaminated flows to the SJR, then I would agree that it wouldn't be necessary to include the confluence of LDC and the RSC. But, I have explained possible sources and shown photo evidence of commingling of discolored water with Little Dry Creek's flows where the commingled flows enter the San Joaquin River. It is a safe presumption that discoloration may indicate contamination/pollution. The SJR is unambiguously a Waters of the U.S., and the home of state and federally protected species.

I recommend that impacts 4.10-1 and 4.10-17 should be re-analyzed taking the River Supply Channel into consideration. Impact 4.10-1 analyzes whether the Project would violate surface water quality standards or Waste Discharge Requirements or otherwise substantially degrade surface water quality at the Plant Site or Quarry Site during Mining and Reclamation. My discussion shows that this impact was not adequately analyzed because the draft EIR excluded mention or discussion of the River Supply Channel's potential impact on the surface water quality of the San Joaquin River; which aerial photography shows there is a risk of this occuring. Impact 4.10-17 analyzes whether the Project would result in a release of pollutants in Flood Hazard, Tsunami, or Seiche. As mentioned previously, Little Dry Creek commingles with the supply channel and may regularly overtop its weir and carry any contaminants to the San Joaquin River. It can be presumed that a flood event would scale up this commingling, and the draft EIR inadequately discusses the risk of floods in regards to these commingling events.

An analysis of the supply channel's water quality and of the frequency of commingling events is

necessary because this information is unknown. I am basing my critique of this project's EIR based on aerials showing discolored water in the supply channel. Aside from this discoloration, I personally do not have knowledge of the channel's water quality. However, I request that the applicant or Responsible Agency re-analyze the aforementioned impacts considering the information provided.

Biological Resources

Comment 123-2

I will quickly mention that any potential water quality impacts may affect biological resources near the Project. I recommend that the following impacts are re-analyzed considering the newly identified confluence between the RSC and LDC:

a. Impact 4.4-2 - Adverse effect, directly or indirectly, on special status species in riparian habitat surrounding the plant Site during mining operations
    i. The Project may affect special status species in SJR by affecting Little Dry Creek's water quality. Little Dry Creek is an immediate tributary to the San Joaquin River, and the potential pollutant source, the Plant Site, is less than a mile from the San Joaquin River.
b. Impact 4.4-4 - Substantial adverse effect on any riparian habitat or other sensitive natural community
    i. See reasoning for Impact 4.4-2
c. Impact 4.4-5 - Impact on protected wetlands or water of the state.
    i. See reasoning for Impact 4.4-2
d. Impact 4.4-6 - Interfere with migratory fish
    i. See reasoning for Impact 4.4.-2. The following migratory species may be affected:
        1. Chinook Salmon
        2. Steelhead
        3. Pacific Lamprey

Land Use and Planning

Comment 123-3

Finally, I'd like to raise my concern that the draft EIR did not explicitly determine the Project's impact on the San Joaquin River Parkway Master Plan. This issue may be an oversight as the Parkway Master Plan was discussed in Section 4.11 - Land Use and Planning (see Page 4.11-44 regarding SJR Parkway Master Plan Goal, and see Page 4.11-47 regarding the SJR Parkway Policy). However, during the analysis of Impact 4.11-2, the SJR Parkway Master Plan was left out. As in, the draft EIR stated that the Project would have a less than significant impact on the Fresno County General Plan, the Madera County General Plan, the Fresno County Zoning Ordinance, and the Fresno County Surface Mining and Reclamation Ordinance. The draft EIR did not state what impact the Project would have on the San Joaquin River Parkway Master Plan. This concern could be easily addressed by having a discussion of the impacts to the SJRP Master Plan in the Final EIR.

My recommendation is that the Final EIR should explicitly determine the Project's impact on the San Joaquin River Parkway Master Plan, where the applicant and the Responsible Agency should discuss this issue with the San Joaquin River Conservancy and the San Joaquin River Parkway and Conservation Trust. Additionally, as a local resident, I encourage the Lead Agency to mediate a deal where the SJR Conservancy may provide public access along the San Joaquin River adjacent to the Plant Site and the Quarry Site in the near future (<5 years). A river-long trail could be world-class, and a valuable resource to Central Valley residents. It seems that it could be possible to connect the Pacific Crest Trail to the City of Fresno via a SJR-long trail.

Comment 123-3 Cont.

Comment 123-4

Comment 123-5

Listed Questions and/or Recommended Further Analysis and Discussion:

This section clearly lists the questions I would like answered, and the recommendations I made in my comment letter.

1. Recommendation: Clarify whether the River Supply Channel flows towards the Plant Site or towards the San Joaquin River?
2. Recommendation: Mention that Little Dry Creek intersects with the River Supply Channel.
3. Recommendation: Analyze the following:
    a. The flow rate/rain event in LDC's watershed required to overtop the aforementioned weir.
    b. An analysis of sources of flows within Little Dry Creek.
    c. Water quality analysis of Little Dry Creek upstream and downstream of the confluence point.
    d. Water quality analysis of the River Supply Channel.
4. Recommendation: Re-analyze the following impacts:
    a. Impact 4.10-1: Violate Surface Water Quality Standards or Waste Discharge…
        i. May potentially impact beneficial uses: SPWN, COLD, MIGR
    b. Impact 4.10-17: Release of Pollutants in Flood Hazard, Tsunami, or Seiche
        i. Pollutants may be carried to the San Joaquin River.
5. Recommendation: Require that the Site's Industrial SWPPP is updated to include this commingling point and to include sampling at this location. Additionally, BMPs should be implemented at this location. The RWQCB may have additional requirements.
6. Recommendation: Consult with the following agencies regarding potential contamination from the river supply channel:
    a. California Department of Fish and Wildlife (copied)
    b. Central Valley Regional Water Quality Control Board (Fresno office, copied)
7. Re-analyze the following impacts:
    a. Impact 4.4-2
    b. Impact 4.4-4
    c. Impact 4.4-5
    d. Impact 4.4-6

Comment 123-6

8. Recommendation: Explicitly state the Project's impact to the San Joaquin River Parkway

Comment 123-7

Comment
123-7 Cont.

Master Plan while analyzing Impact 4.11-2.

Thank you for your time and for accepting my comments to improve this Project's EIR.

-LWK

Copies Sent To:

Regional Water Resource Control Board
Army Corps of Engineers
California Department of Fish and Wildlife
San Joaquin River Conservancy
San Joaquin River Parkway Conservancy and Trust
Center for Biological Diversity

See following pages for attachments.

Exhibit 1 - Supply Channel and LDC Commingling Locations

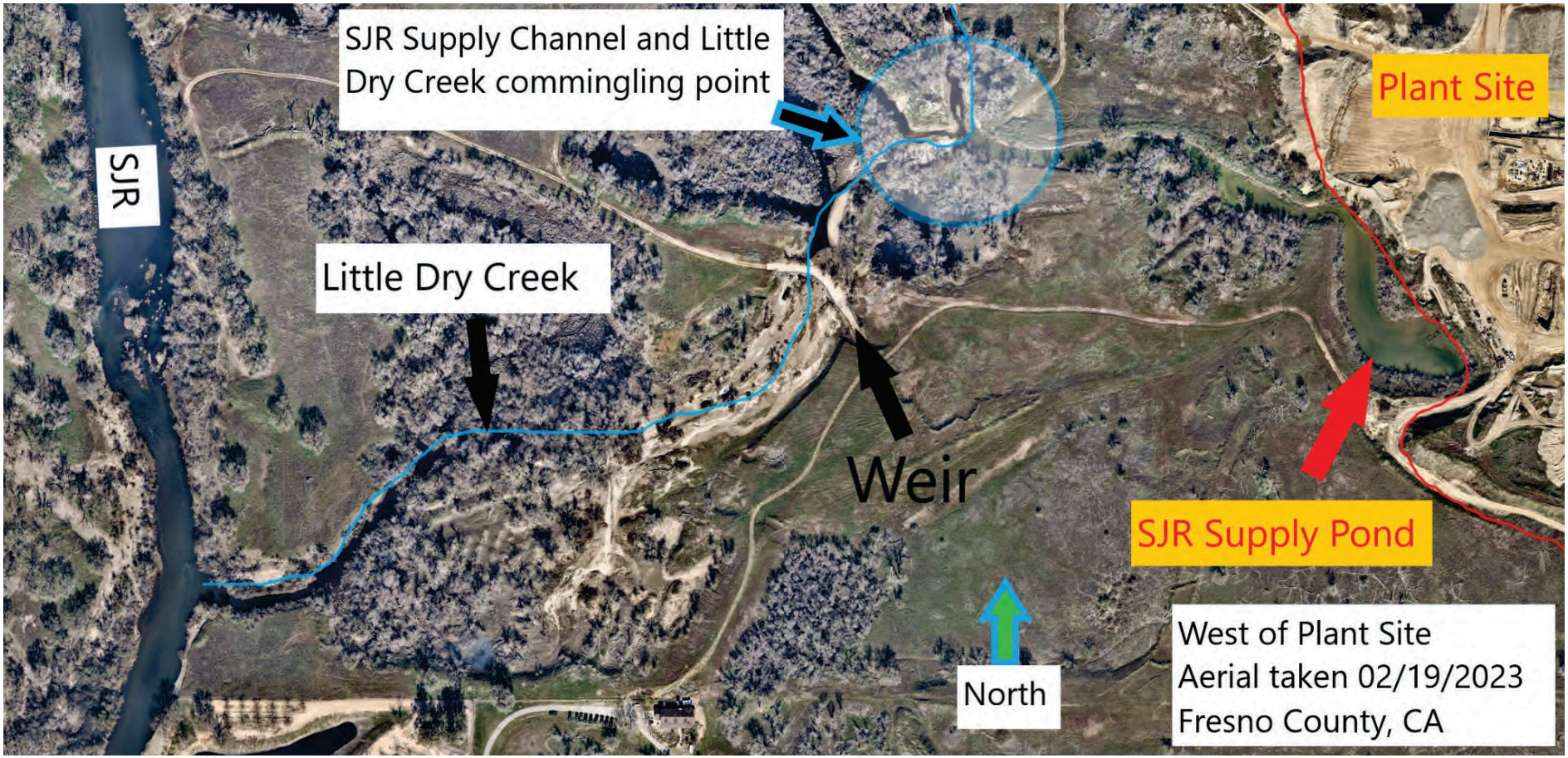


Exhibit 1 - Supply Channel and LDC Commingling Locations

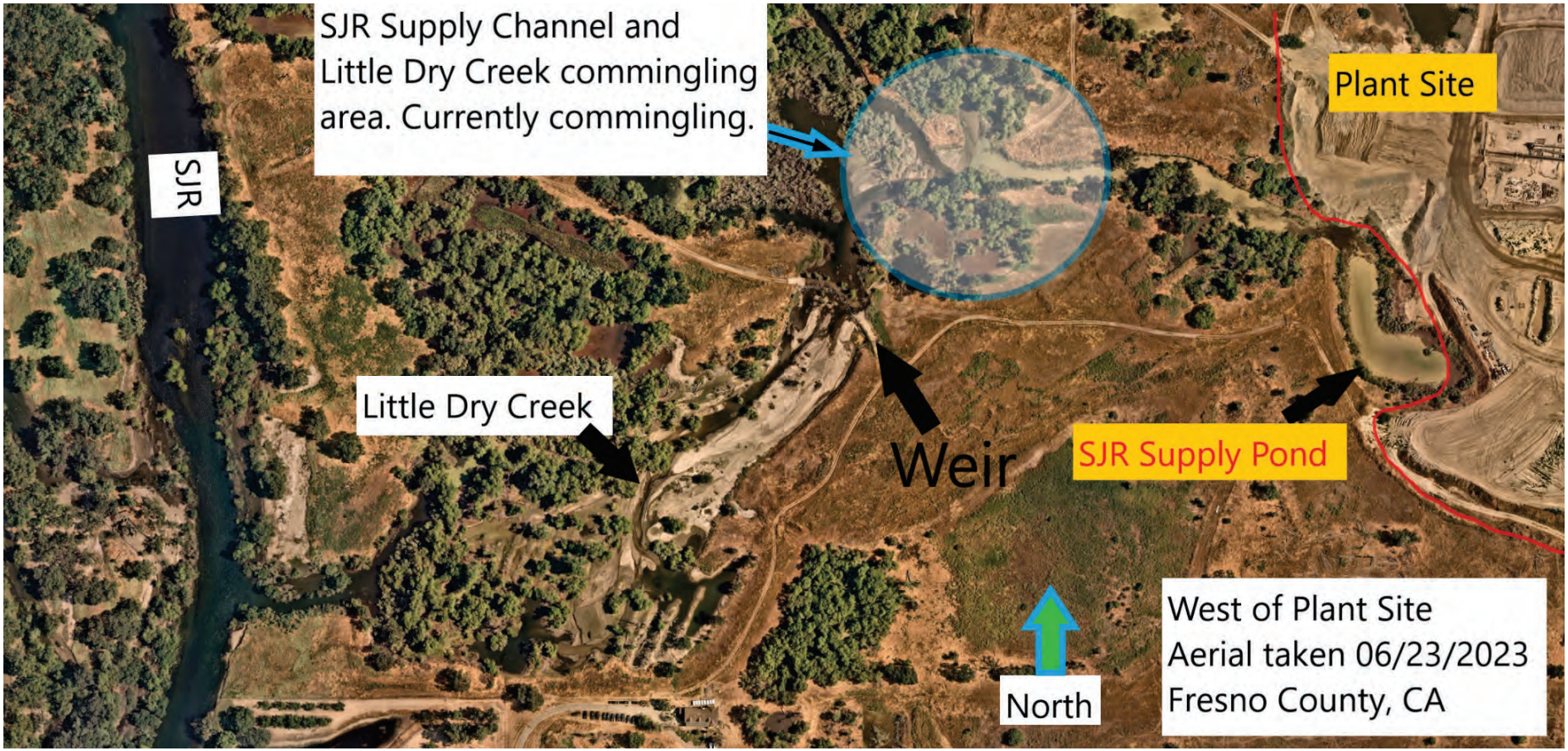
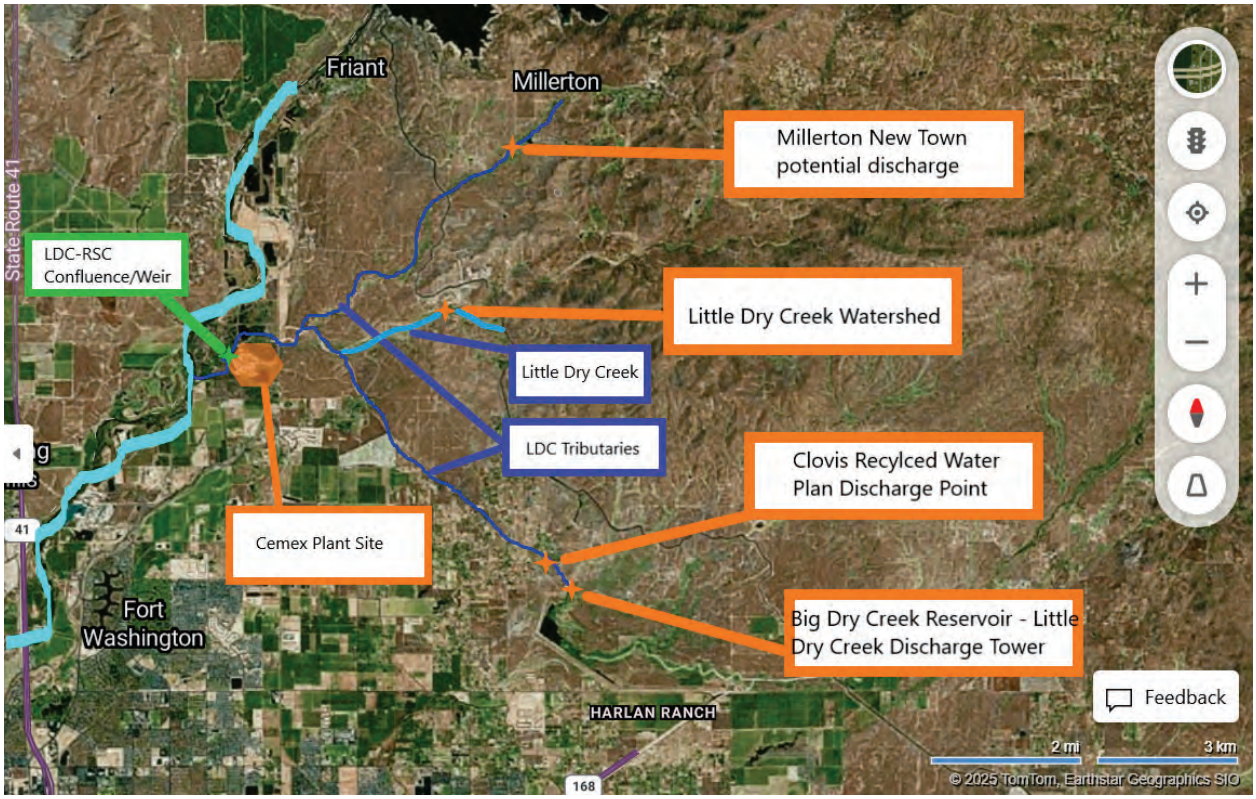


Exhibit 2 - LDC Watershed Sources



From: Tom Bozzo
To: Randall , David A.
Subject: CEMEX DEIR
Date: Friday, February 21, 2025 1:18:15 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. Randall:

I have been a resident of Fresno since 1985, and live near Woodward Park. I am retired and walk along the San Joaquin River bluff and trails almost daily.
As an outdoor enthusiast, River access and restoration have been issues that I am sincerely interested in.

Comment 124-1

As such, I have completed a partial review of the Benchmark DEIR conducted relative to the CEMEX request to extend their CUP and dramatically alter the size and scale of their operations. I am deeply concerned that the scope of their request will have irreparable impacts on the well-being of the residents and wildlife in the region.

While the content of the Benchmark document may check the boxes required under CEQA, in my opinion there are numerous shortcomings in their review, and many liberties taken in their assumptions as to what impacts might be significant, and whether they might be mitigated.

With such a massive document, and short timeline for public review and comment, I've noted some concerns in several key areas, with questions below. They are not listed in any order of concern or importance. And there are other substantial issues that should be of concern, such as water, air quality, traffic, noise and more.

I've also done some comparisons with the existing Vulcan operations, as I'm certain that much of the general public is unaware of how the river bottom mining operations are being conducted. It would be unfortunate to have someone dismiss the importance of the CEMEX decision by simply thinking that Vulcan is already operating under similar constraints with their CUP.

Comment 124-2

CEMEX DEIR Review

Project need

Comment 124-3

<!--[if !supportLists]--> - <!--[endif]-->Recites need for 6 MT of aggregate for future growth.

<!--[if !supportLists]--> - <!--[endif]-->What is the regional supply of aggregate materials?

<!--[if !supportLists]--> - <!--[endif]-->Who can meet the area demand with available resources?

Comment 124-3 Cont.

<!--[if !supportLists]--> - <!--[endif]-->What other sites in the area might be able to supply future demand?

<!--[if !supportLists]--> - <!--[endif]-->What percentage of local supply is provided by CEMEX?

<!--[if !supportLists]--> - <!--[endif]-->Does CEMEX export local materials out of the area?

<!--[if !supportLists]--> - <!--[endif]-->Are the employees at CEMEX able to continue at other locations? Other employers?

<!--[if !supportLists]--> - <!--[endif]-->Would the CEMEX plant expansion have an adverse effect on other local companies?

Community / Corporate cooperation

Comment 124-4

<!--[if !supportLists]--> - <!--[endif]-->CEMEX is currently encroaching on an existing Environmental Reserve, outside of their permit.

Comment 124-5

<!--[if !supportLists]--> - <!--[endif]-->Since 2000, CEMEX has been cited 667 times and fined $52.4 million for Environmental, safety & employment related offenses.

<!--[if !supportLists]--> - <!--[endif]-->Compared to Vulcan, cited 148 times and fined $4.8 million in the same categories listed above.

<!--[if !supportLists]--> - <!--[endif]-->CEMEX quarry site is 3 miles north of the San Joaquin River and the City of Fresno. But less than that if a direct line is extended to the north Fresno communities of Copper River.

<!--[if !supportLists]--> - <!--[endif]-->Vulcan Austin quarry site is 10 miles from the River and City of Fresno, and further than that to Madera.

<!--[if !supportLists]--> - <!--[endif]-->Vulcan mining operations at the Friant site have terminated and restoration is underway.

<!--[if !supportLists]--> - <!--[endif]-->What assurance do we have that CEMEX, a foreign corporation will have the resources and commitment to meet proposed restoration efforts at the end of the project?

Geology / Hydrology / Biology

Comment 124-6

<!--[if !supportLists]--> - <!--[endif]-->Limited scope on the stability of the mining wall.

<!--[if !supportLists]--> - <!--[endif]-->Limited discussion on the potential issues of disturbing the underlying soil / rock stability with blasting and digging. Comment 124-6 Cont.

<!--[if !supportLists]--> - <!--[endif]-->Limited discussion on the impact of operations on existing groundwater levels and domestic wells. Comment 124-7

<!--[if !supportLists]--> - <!--[endif]-->Restoration of the Chinook Salmon on the SJR. Would blasting and/or mining have any adverse effect on aquatic life? Anyone who has been around a fish aquarium knows what happens when you tap on the glass. I can't imagine how fish in the river would react to blasting sound and vibration. Comment 124-8

<!--[if !supportLists]--> - <!--[endif]-->Index recites old studies completed in Alaska that are unlike the River. What impact would blast pressure and vibration waves have at this specific site? Comment 124-9

<!--[if !supportLists]--> - <!--[endif]-->Has CDFW and the USFW reviewed the proposal and shared their concerns? Comment 124-10

The size and scale of the DEIR is daunting, to say the least. And the issues required to be addressed under CEQA are well outside the areas of expertise of the general public. I'm hopeful that the Planning Department and Board of Supervisors will be able to cast serious doubt on whether this project is in the best interests of the local community. Comment 124-11

Thanks for your time and consideration.

Tom Bozzo

559.289.9023

From:	Ron Martin
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR - Deny the permit application for a century of CEMEX gravel mining on the San Joaquin River.
Date:	Friday, February 21, 2025 7:20:42 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

The EIR that the CEMEC Corporation submitted in pursuit of a permit for a century of gravel mining a few feet from from the San Joaquin River shows that their plan is a threat to our planet as it is asking for permitting for use of fossil-fueled trucks.

Comment 125-1

Table 4.8-5 of the EIR, Applicability of Scoping Plan Climate Change Policies and Measures, refers to an executive order concerning heavy-duty trucks requiring that such trucks meet the Mobile Source Strategy for Cleaner Technology and Fuels. There are detailed requirements and timelines for classes of vehicles.

Comment 125-2

The CEMEX EIR simply states that none of this applies to them since their trucks are not heavy-duty trucks but heavy-heavy duty trucks.

A continuing CEMEX gravel operation would continue to be a cause of the release of green-house gasses that are warming our planet. And we don't want that.

We should plan for more responsible industry, without exceptions, for the sake of earth's habitability for grandchildren. Rather, as CEMEX's permit to mine gravel runs out, let them wind down their San Joaquin River operation, move elsewhere if they choose, and free the mining area to become part of the River Parkway and Conservation Trust.

Comment 125-3

Ronald J. Martin, Ph.D.

(559) 222-5524 - landline; (559) 390-1338 - mobile

From: jessica ollson
To: Randall , David A.
Subject: Cemex Rockfield Expansion
Date: Friday, February 21, 2025 12:07:58 PM

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Report Suspicious

Comment 126-1

I am a resident near clovis North and would be impacted by the proposed Cemex Rockfield Expansion. I am against this expansion due to increased noise, pollution and traffic congestion. What can I do to show my opposition?

Julie Olsen

February 21, 2025

Gerald D. Vinnard
2612 W. Sierra Ave.
Fresno, CA 93711

David Randall
2220 Tulare St., Sixth Floor
Fresno, CA 93711

Re: Cemex Rockfield Quarry Modification Project Comment

Dear Sir:

I write to submit comments on the Environmental Impact Report ("EIR:) for the Cemex proposal to mine gravel to a depth of 600 feet in the area between Friant Road and the San Joaquin River, and southeast of Lost Lake Park. Comment 127-1

For many years, residents of our community have looked forward to the development of a recreational trail running continuously from the town of Friant along the San Joaquin River to Highway 99. Any such trail running south from Lost Lake Park would have to be located between the proposed quarry site and the San Joaquin River.

The EIR states that the mining activities will include blasting within the site at any time from 6:00 am to 7:00 pm. Anyone using a recreational trail adjacent to the quarry site will be exposed to these very loud, startling, unpleasant and unpredictable noises. This could be particularly problematic for anyone riding horses on a nearby trail, as the sudden noise could cause a horse to become uncontrollable and possibly "throw" a rider. Noises such as this are unacceptable in a recreational area. Mitigation of this problem could include limitations on the times blasting is permitted.

As the EIR acknowledges, corridors for the movement of wildlife are important. The banks of the San Joaquin River provide one such corridor. As relevant, that "corridor" includes the area downstream from Lost Lake Park between the proposed quarry site and the River. The EIR specifies a 200 foot wide setback between the proposed quarry site and the River, which would be the only possible location for the extension of a wildlife corridor south from Lost Lake Park. This is also the only feasible location for the extension of the contemplated recreational trail. Comment 127-2

The EIR is vague as to exactly where the western edge of this 200 foot buffer will be located. Is the distance to be measured from the low or the high water shore of the River, of perhaps from an historic high water shore? If the low water shore is used, the trail could be flooded during periods of high water, rendering it unusable for either a wildlife corridor or a trail. Comment 127-3

The EIR states that after mining activities cease, the quarry area will be left with a 100 foot deep pond having a surface 500 feet below the surrounding area. The water in the pond will be stagnant, with no inflow or outflow. This presents a number of problems, some of which are as follows: Comment 127-4

- The pit will be an eyesore for users of the nearby recreational trail.
- The pit will be a safety hazard for wildlife and trail users.
- The pit will breed mosquitoes.
- The pit will produce unpleasant odors.
- Over time, trash and debris will accumulate in the pit, and will need to be removed.

February 21, 2025

Cemex should be required to dedicate an easement or grant for a trail on the proposed setback. Cemex should also be required to plant appropriate vegetation along the eastern side of the setback to screen trail users' views of the quarry. Other possible mitigation measures for these problems could include a cement lining and pump-driven circulation system for the water in the pond, a chain link fence surrounding the pond, and mosquito fish. If the quarry is permitted, Cemex should be required to provide appropriate financial assurances, such as a bond, for any mitigation measures that are required. Comment 127-5 Comment 127-6 Comment 127-7

Thank you for considering these comments.

Respectfully submitted,

Gerald D. Vinnard

Gerald D. Vinnard

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Gerald D. Vinnard
2612 W. Sierra Ave.
Fresno CA, 93711

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Mr. Vinnard

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From:	Beth A.
To:	Randall , David A.
Cc:	sweaver@riverparkway.org
Subject:	Public Comment on Draft Environmental Impact Report (EIR) for CEMEX Rockfield Modification Project
Date:	Saturday, February 22, 2025 7:55:53 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am writing to formally submit my comments regarding the Draft Environmental Impact Report (EIR) for the proposed CEMEX Rockfield Quarry Modification Project. My children have participated in the San Joaquin River Parkway and Conservation Trust's River Camp programs, as campers and counselors. I am deeply concerned about the potential environmental and public health impacts this project may have on the **2500 children** who participate in the camp programs along the San Joaquin River each summer. The camp locations along the river are one to five miles from the planned CEMEX plant and quarry sites.

Comment 128-1

The Draft EIR acknowledges significant environmental impacts; however, I believe the proposed **mitigation measures are insufficient to protect the children, staff and volunteers in the River Camp programs**. Below, I outline key areas of concern and offer recommendations for stronger, more effective mitigation strategies.

1. Water Quality and Safety Risks

The potential contamination of the San Joaquin River from mining operations poses a direct risk to children and adults who swim, canoe, and engage in other water-based activities. The Draft EIR states that blasting and excavation could introduce contaminants such as nitrates, heavy metals, and sediment into groundwater and surface water sources.

Comment 128-2

Recommended Mitigation Measures:

- Implement **independent, third-party water quality monitoring** with real-time data transparency, focusing on **nitrates, heavy metals, turbidity, and bacterial contaminants**.
- Require **double-lined retention ponds** with **leak detection systems** to prevent groundwater contamination.
- Mandate **advanced filtration systems** (e.g., activated carbon and biofiltration) to treat runoff before it reaches the San Joaquin River.
- Increase the **minimum buffer zone from 200 feet to at least 500 feet** to better prevent contamination risks to the river.
- Establish an **emergency response plan** for immediate action in the event of contamination.

2. Noise and Vibration from Blasting

Blasting operations could create loud noises and vibrations that may disturb campers, many of whom are young children. The Draft EIR does not provide strong enough measures to minimize this impact.

Comment 128-3

Recommended Mitigation Measures:

- Prohibit blasting during **peak camp hours (8:00 AM – 4:00 PM)** to avoid disturbing activities.

- Require the use of **blast mats** to absorb shockwaves and reduce noise levels.
- Install **real-time vibration monitoring** along the riverbank to assess the impact of seismic activity on nearby camp facilities.
- Establish a **notification system** so that River Camp staff receive advance warning before any blasting occurs.

3. Air Quality and Health Risks from Dust and Emissions

Comment 128-4

Mining activities will generate significant amounts of particulate matter (PM10, PM2.5) and diesel exhaust emissions, which could negatively impact children's respiratory health. The EIR's mitigation measures do not go far enough to ensure safe air quality.

Recommended Mitigation Measures:

- Require **continuous air quality monitoring** at River Camp locations with **publicly available real-time data**.
- Implement **enhanced dust suppression** techniques, including water misting and chemical stabilizers.
- Mandate the use of **low-emission or electric-powered vehicles and equipment** to reduce diesel exhaust exposure.
- Create **vegetative buffer zones** using trees and shrubs to filter air pollutants.

4. Ecological Damage to River Habitat and Wildlife

Comment 128-5

The San Joaquin River is a critical habitat for many species, and degradation due to mining could disrupt biodiversity, impacting the hands-on environmental education provided by River Camp.

Recommended Mitigation Measures:

- Require a **comprehensive habitat restoration plan** that prioritizes native species and long-term ecological recovery.
- Expand **riparian habitat conservation areas** beyond the proposed buffer zones.
- Conduct **independent biological assessments** before and during mining operations to assess impacts on local wildlife populations.

5. Increased Truck Traffic and Safety Risks

Comment 128-6

The projected increase in heavy truck traffic poses safety risks for families traveling to and from River Camp. The Draft EIR does not adequately address traffic mitigation near recreational areas.

Recommended Mitigation Measures:

- Implement **strict truck routing plans** that avoid high-use recreational areas during peak summer months.
- Require **additional pedestrian crossings and signage** near camp entrance points.
- Install **sound barriers along major truck routes** to minimize noise pollution affecting campers.

Conclusion

Comment 128-7

While the proposed mitigation measures in the Draft EIR acknowledge potential environmental impacts, they do not go far enough to **protect the health, safety, and experience of children at River Camp**. Without **stronger protections**, this project could significantly harm the San Joaquin River ecosystem and the quality of outdoor educational opportunities available to

future generations. **Fresno County must require CEMEX to 1.) adopt more robust mitigation strategies, and 2.) describe how they (CEMEX) will fund them before approving any mining expansion near this sensitive area.**

Comment 128-7 Cont.

I appreciate your consideration of these comments and respectfully request that they be addressed in the Final Environmental Impact Report.

Sincerely,

Beth Arrindell
4065 North Larkin Avenue
Fresno, CA 93727

From: Deanna Bailey
To: Randall , David A.
Subject: CEMEX Mine Blast Proposal
Date: Saturday, February 22, 2025 2:10:30 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. Randall,

I am writing to object to the CEMEX blast mine proposal. Comment 129-1

The current permit should not be extended or modified for the following reasons:

- Fresno and Madera counties do not need the aggregate. Our regional demand of 305 million tons for the next 50 years will be met by the 556 million tons of reserves already permitted at the Kings River and at Austin Quarry.

- CEMEX has been fined more than $43 million for 81 environmental violations since 2000. Comment 129-2

- The draft EIR does not require CEMEX to have a reserve to pay for future damage, such as a breach between the mine and the river. Comment 129-3

- No amount of money could compensate for the potential environmental damage.

- CEMEX has no plans to rectify the unavoidable impact to traffic on Friant Road. Comment 129-4

- The visual blight on the landscape has encroached on an adjacent state ecological preserve. Comment 129-5

- The constant dynamiting is not compatible with fish and wildlife or humans living near the site! Comment 129-6

Please do not extend the current permit and reject the proposal to modify the permit! Comment 129-7

Sincerely,

Deanna Bailey
Fresno, CA

From:	Local Waterkeeper
To:	Randall , David A.
Subject:	Re: CEMEX Rockfield Quarry Modification Project EIR
Date:	Saturday, February 22, 2025 7:20:29 PM
Attachments:	Addendum - CEMEX Quarry Expansion - Public Comment Letter - LWK.pdf

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hi David,

I wanted to send an addendum to my original letter. My concern is that the public isn't getting the full picture with this EIR and this addendum further shows the need to analyze the River Supply Channel's impact to the San Joaquin River. However, my original letter has some recommendations to improve the EIR's analyses.

Thank you,

LWK

On Fri, Feb 21, 2025 at 9:52 AM Randall , David A. <drandall@fresnocountyca.gov> wrote:

> Thank you for your participation in this important community process, your comments have been added to the project file and will be addressed in the Final EIR and provided to the Planning Commission prior to their consideration of the Application for the project.
>
> **David Randall | Senior Planner**
> **Department of Public Works and Planning |**
>
> **Development Services and Capital Projects Division**
> 2220 Tulare St. 6th Floor Fresno, CA 93721
> Main Office: (559) 600-4497 Direct: (559) 600-4052
>
> Your input matters! Customer Service Survey
>
> **From:** Local Waterkeeper <localwaterkeeper@gmail.com>
> **Sent:** Thursday, February 20, 2025 9:46 PM
> **To:** Randall , David A. <drandall@fresnocountyca.gov>
> **Subject:** CEMEX Rockfield Quarry Modification Project EIR
>
> Good evening David,

I'm sending you my response to the CEMEX project's draft EIR.

Thank you,

LWK

To: David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

DRandall@FresnoCountyCA.gov

RE: Cemex Rockfield Quarry Modification Project EIR - Addendum to Original Comment Letter

I'd like to add the included exhibit as part of my original comment. My concerns with the project's water quality impacts still stand. Specifically, that the draft EIR did not address the comingling of the River Supply Channel and Little Dry Creek. This was not discussed at all. The draft EIR is inadequate because it does not analyze the impact of the river supply channel to Little Dry Creek, a tributary to the San Joaquin River. Specifically, the Plant Site's supply pond appears discolored in multiple aerials, and full of sediment in the most recent aerial (see attached image). **The public cannot get a full picture of the CEMEX project's impacts to the environment without this analysis/discussion.** See my original letter for recommendations to improve the EIR's analysis.

Comment 130-1

Included is an aerial taken on February 9, 2025 showing the Plant Site, the River Supply Channel, and the San Joaquin River. This aerial matches the aerials included in my original comment letter (which will be included with this smaller letter). Note the heavy brown discoloration of the River Supply Channel (RSC) as it crosses Little Dry Creek (LDC). From what I gather from the EIR, the RSC flows towards the Plant Site, not towards the San Joaquin River (SJR). However, my original comment letter shows that the RSC's discoloration usually extends upstream, over LDC. The discoloration may not reach the SJR, but LDC may have flows that commingle with the RSC's discolored water, consequently allowing a mixture of RSC and LDC water to flow to the SJR, less than a mile away. The attached aerial shows brown discolored water suggesting heavy sedimentation in the water. The aerial was taken 3-4 days before a large storm that produced over an 1.0" of rain at the Fresno Airport rain gauge (see attached). It is safe to presume that the rain storm produced enough flows in LDC to carry polluted water from the RSC over the nearby weir to the SJR.

Comment 130-2

The EIR leaves questions unanswered (un-mentioned, to be frank) regarding the impact of this comingling to the SJR:

Comment 130-3

- What's the water quality of the RSC usually?
- What is the water quality of the RSC when it is discolored as shown in the aerials?
- How often does LDC commingle with RSC water?
- How often does LDC + RSC commingle water flow over the nearby weir (aerials show overflows during the summer)?
- What is the water quality impact to the SJR during the weir overflow?

- Why isn't the supply pond and channel included in the Project boundary in the EIR, or the Plant Site's SWPPP?
- Why doesn't CEMEX regularly sample the water quality in the River Supply Channel as part of their SWPPP requirements?
- What is the impact of this comingling to biological resources in the SJR?

Comment 130-3 Cont.

Please see my original comment letter for recommendations to improve the EIR's analyses and to provide the public with a full picture of the project's environmental impacts.

Comment 130-4

Thank you,

LWK

Copies Sent To:

Regional Water Resources Control Board
Army Corps of Engineers
California Department of Fish and Wildlife
San Joaquin River Conservancy
San Joaquin River Parkway Conservancy and Trust
Center for Biological Diversity

See following pages for attachments.

SJR Supply Channel and Little Dry Creek Comingling Point. No comingling, but aerial taken 3-4 days before large storm (>1.0" at Fresno Airport rain gauge).
Plant Site
SJR
Little Dry Creek
Weir
SJR Supply Pond
North
West of Plant Site
Aerial taken: 02/09/2025
Fresno County, CA

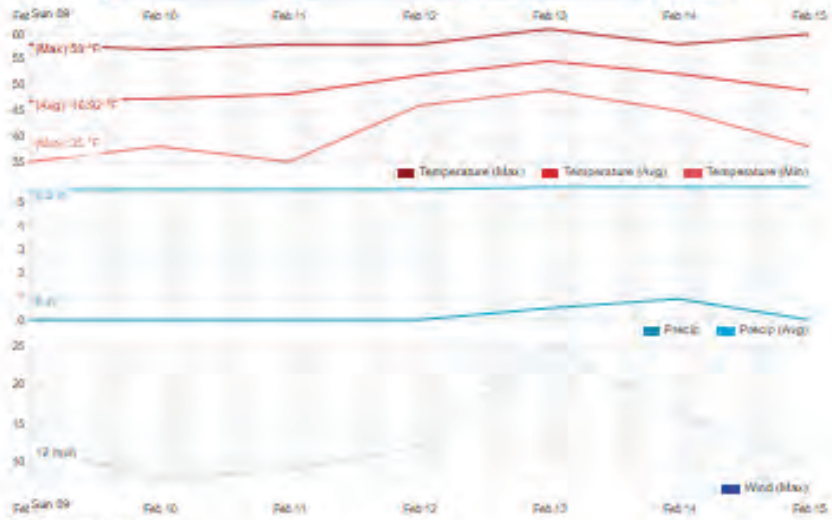
Fresno, CA Weather History

FRESNO YOSEMITE INTL AIRPORT STATION | CHANGE

TODAY HOURLY 10-DAY CALENDAR HISTORY WUNDERMAP

Daily Weekly Monthly

February 10 2025 View



Summary

Temperature (°F)	Max	Average	Min
Max Temperature	61	58.57	57
Avg Temperature	54.71	50.05	46.92
Min Temperature	49	40.86	35
Dew Point (°F)	**Max**	**Average**	**Min**
Dew Point	55	38.81	21
Precipitation (in)	**Max**	**Average**	**Min**	**Sum**
Precipitation	0.68	0.20	0.00	1.37
Snowdepth	0.00	0.00	0.00	0.00
Wind (mph)	**Max**	**Average**	**Min**
Wind	25	5.75	0
Gust Wind	30	0.9	0
Sea Level Pressure (in)	**Max**	**Average**	**Min**
Sea Level Pressure	30.03	29.69	29.34

Daily Observations

Time	Temperature (°F)			Dew Point (°F)			Humidity (%)			Wind Speed (mph)			Pressure (in)			Precipitation
Feb	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
9	58	46.8	35	39	35.2	33	88	65.4	46	12	2.9	0	29.9	29.8	29.7	0.00
10	57	47.4	36	37	34.6	32	79	62.6	42	6	3.3	0	29.8	29.7	29.7	0.00
11	58	48.3	38	37	31.3	24	83	55.6	27	9	5.3	0	29.7	29.6	29.6	0.00
12	58	51.9	46	47	37.8	31	89	59.9	44	12	4.9	0	29.6	29.5	29.5	0.00
13	61	54.7	49	55	51.3	47	96	88.7	76	25	13.5	3	29.5	29.1	28.7	0.49
14	58	52.3	45	50	45.1	38	97	77.7	49	16	7.5	0	29.9	29.8	29.5	0.88
15	60	49.8	38	43	40.6	36	93	74.5	51	10	2.9	0	30.0	29.9	29.8	0.00

From: T Cassidy
To: Randall , David A.
Subject: CEMEC Corporation submission re permit for gravel mining
Date: Sunday, February 23, 2025 10:22:21 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

The EIR that the CEMEC Corporation submitted in pursuit of a permit for a century of gravel mining a few feet from from the San Joaquin River shows that their plan is a threat to our planet as it is asking for permitting for use of fossil-fueled trucks. Comment 131-1

Table 4.8-5 of the EIR, Applicability of Scoping Plan Climate Change Policies and Measures, refers to an executive order concerning heavy-duty trucks requiring that such trucks meet the Mobile Source Strategy for Cleaner Technology and Fuels. There are detailed requirements and timelines for classes of vehicles. The CEMEX EIR simply states that none of this applies to them since their trucks are not heavy-duty trucks but heavy-heavy duty trucks. Continuing the CEMEX gravel operation would be a long-term source of release of green-house gasses that are warming our planet.

Additionally
4.3.1.2 Pollutants and Health Effects
4.3.1.3 Toxic Air Contaminants
Toxic air contaminants can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis or genetic damage; or short-term acute effects, such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches. For evaluation purposes, toxic air contaminants are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure. Non-carcinogenic substances differ in they are generally assumed to feature a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis. Acute and chronic exposure to non-carcinogens is expressed as a Hazard Index, which is the ratio of expected exposure levels to an acceptable reference exposure levels. Comment 131-2

We should plan for more responsible industry, for the sake of earth's habitability for future generations, without exceptions. Rather, as CEMEX's permit to mine gravel runs out, let them wind down their San Joaquin River operation, move elsewhere if they choose, and free the mining area to become part of the River Parkway and Conservation Trust. Comment 131-3

From: rcorto1@sbcglobal.net
To: Randall , David A.
Cc: rcorto1@sbcglobal.net
Subject: Cemex Roakfield Expansion
Date: Sunday, February 23, 2025 4:45:08 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I live at Copper River Ranch and am concerned about the extension and expansion of the Cemex operation along the San Joaquin River. Comment 132-1

My concerns are as follows:

a. The environmental impact on the ecosystem and biodiversity of the river bottom. I have had firsthand experience of surface mining and drilling in Rangley, Colorado. Its effects on deer migrations and diminished wildlife populations was significant. With the continued development of open space it is more important than ever that we preserve those ecosystems that provide habitat for wildlife and also recreational space for citizens to enjoy. The San Joaquin River is a precious resource that is unique and valuable. We have already managed to destroy the river's natural migrations of salmon and steel head, let us not further damage this precious place.

b. Other than to advance the business and profit incentives of rock removal from this area, there is no lack of available rock for construction and other commercial ventures. Therefore, I can see no justification for continuing to damage and desecrate this unique ecological place. Comment 132-2

c. The Central San Joaquin Valley already has some of the worst air quality in the United States. The incident of asthma, COPD and other respiratory disease plages our city and county. How can we continue to justify rock removal and the generation of air particulates when this is purely a business venture with no need for additional product (gravel, rock, etc). Comment 132-3

d. Noise pollution, traffic congestion and danger to cyclist who use Friant, Copper and Willow for recreation and/or travel to and from school or work. Comment 132-4

e. The impact of explosives being used at the excavation site and its close proximity to homes. Comment 132-5

f. The effects on our home values and quality of life with the environmental impact of this project (noise pollution, traffic congestion, dangers of rocks harming cars and people, and air pollution secondary to excavation and truck emissions. Comment 132-6

g. How can anyone forsee the environmental consequences of granting Cemex a 100 year extension on their operations. Especially with a project that does not serve the population at large. Comment 132-7

I hope you will give serious consideration to these issues those expressed by others and reject Cemex's proposal. Comment 132-8

Thank you,

Ron Cortopassi, Pharm.D.
1927 E. Clubhouse Dr.
Fresno, Ca. 93730
5592811177

From:	Amanda Joy
To:	Randall , David A.
Subject:	Cemex Expansion
Date:	Sunday, February 23, 2025 2:27:34 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 133-1

NO THANK YOU! Explosive mining near town, near waterways, near a dam, with our hot, dry summer heat and already high fire risk???!!! Are you kidding me?! Is our city's safety for sale? Please put people over profit.
AJ

From:	Georgia Murach
To:	Randall , David A.
Subject:	Concerns about Cemex"s plans
Date:	Sunday, February 23, 2025 11:34:56 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 134-1

I'm trying very hard to control my anger with the Board of Supervisors for even allowing this project to go forward!
What price can there be on our neglected San Joaquin River? This river should be a crowning jewel for a park system itself, instead it faces a 600 foot deep mining pit! Rockfield Quarry Modification, AKA Cemex, is the culprit.

Comment 134-2

For my part, I would like to know if the Cemex's 2024 EIR correlates the increases in ozone and fine particulates that impact human health. We often seem to have the worst air quality in the nation and this is a serious concern for me.

Georgia Murach
1374 W. Big Sandy Rd.
Fresno, CA

Please let me know that you have received my email.

From:	louise richardson
To:	Randall , David A.
Subject:	CEMEX
Date:	Sunday, February 23, 2025 9:27:00 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Sir,

Comment 135-1

Please deny CEMEX'S application to modify an existing use permit that allows hard-rock mining within the boundaries of the San Joaquin River Parkway.

Heavy trucking of megatons of aggregate will further ruin Friant Road and add countless traffic jams at the Friant Road and Audubon Drive intersection and at the Friant Road and Champlain intersection.

Please deny this application, also known as the Rockfield Quarry Modification Project.

Thank you for your time and consideration.

Louise Richardson
1674 W. Bullard Ave.
Fresno CA 93711

From: dr.waterhouse@wahfresno.com
To: Randall , David A.
Subject: CEMEX Rockfield Quarry Modification Project EIR
Date: Sunday, February 23, 2025 2:23:37 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 136-1

NO on the proposal to modify Cemex Permit

Please vote NO on this proposal to expand the Cemex operation. This corporation is located too close to a large populated area and would destroy important habitat.
Cheryl and Ralph Waterhouse

Sent from my iPhone

Feb. 24, 2025

David Randall, Senior Planner
2220 Tulare St., Sixth Floor
Fresno, CA 93721

Re: Please STOP CEMEX from imposing its negative impacts on our community!

Dear Mr. Randall:

Please use your decision-making power to STOP CEMEX's proposed blasting and drilling of a 600-foot-deep pit near the San Joaquin River to supply aggregate for future area construction. Comment 137-1

Please take note that:

- The pit would be a huge eyesore on this currently beautiful landscape.
- Trucks connected with the project would cause ongoing traffic delays at two nearby intersections. Comment 137-2
- Statistics noted in *The Fresno Bee* on Feb. 16, 2025 indicate that the need for this project is in serious question. CA state geologists have reported that other sources already can supply nearly double the area's projected demand for aggregate over the next 50 years. (See "Aggregate Sustainability in California," updated in 2018 by the California Geological Survey.) What's the reasoning here? Comment 137-3
- CEMEX has 81 separate environmental violations since 2000, according to the same issue of *The Fresno Bee*. With their record, is there reason to trust that CEMEX would observe environmental rules? Comment 137-4 Please note that the draft agreement doesn't require that CEMEX put money aside to pay for potential environmental damage by this project. Comment 137-5

In my view, all of this adds up to the need to STOP CEMEX. We do not need this project. Please do not allow CEMEX to impose its negative effects on our community! Comment 137-6

Sincerely,

Suzanne Abrams

Suzanne Abrams
5688 N. Sixth St.
Fresno, CA 93710
(559) 435-0612

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Suzanne Abrams
5688 N. Sixth St.
Fresno CA, 93710

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Suzanne Abrams

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From: Cathey Farinelli
To: Randall , David A.
Subject: Stop Cemex open pit mining expansion
Date: Monday, February 24, 2025 11:39:01 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 138-1

I am a resident of the Woodward Lake community.
I am opposed to the Cemex open pit mine expansion project.
We need to preserve the environment especially in these delicate times.
Not only would it harmful to the environment but would also cause unnecessary hardship to the surrounding communities which have expanded immensely in the last 2 decades.
I feel they should stop or take their business elsewhere.
Thank you
Catherine Farinelli

Sent from my T-Mobile 5G Device

Nancy Gilmore
7351 N Hayston Ave.
Fresno, CA 93720
2/24/25

David Randall, Senior Planner
Fresno County Public Works & Planning Department
Development Services & Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

Subject: Public Comment on the CEMEX Rockfield Quarry Draft Environmental Impact Report (SCH No. 2020060123)

Dear Mr. Randall,

I am submitting comments on the Draft Environmental Impact Report (EIR) for the CEMEX Rockfield Quarry Proposed Expansion. As a Fresno County resident for over 40 years, a Board Member of the Fresno Audubon Society, and someone with academic and professional expertise in Biology and Engineering holding a B.S. in Mechanical Engineering and undergraduate studies in Biology from Cal Poly, San Luis Obispo, I have serious concerns regarding the report's treatment of air quality and impacts on migratory and special-status birds. Additionally, as someone who suffers from asthma, I am particularly concerned about how this project will exacerbate air quality issues in an already compromised region.

Comment 139-1

Air Quality Impacts

Comment 139-2

While the EIR proposes mitigation measures such as a Fugitive Dust Control Plan (Mitigation Measure 4.3-2), **it does not sufficiently evaluate the long-term cumulative effects of continuous quarry operations**.

Health Risks: The San Joaquin Valley has high asthma rates, and fine particulate pollution worsens respiratory conditions. The EIR does not provide a clear plan for monitoring long-term air quality impacts.

Cumulative Emissions: The report does not adequately consider the combined effect of quarry emissions alongside other industrial and agricultural pollutants in the region.

Ongoing Operations: While construction-related emissions are discussed, the impact of continuous dust and emissions over a 100-year period remains largely unaddressed.

Impacts on Birds & Migration

Comment 139-3

The EIR focuses on nesting birds but **fails to account for migratory species and special-status birds, particularly the Tricolored Blackbird (Agelaius tricolor).**

Tricolored Blackbird Concerns: This species, listed as threatened under the California Endangered Species Act since 2019, has been well documented in Fresno County. Given its colonial nesting habits in agricultural and disturbed landscapes, the expansion could disrupt critical habitat.

Dust & Noise Impact: Airborne dust settling on foraging areas and increased noise from operations may affect feeding and breeding success.

Comment 139-4

Lack of Seasonal Study: The EIR does not sufficiently analyze how quarry activities could disrupt non-nesting birds during migration or other non-nesting periods.

Comment 139-5

This project has the potential for significant environmental and public health consequences. A much more thorough review is necessary to ensure that these impacts are fully understood and effectively mitigated.

Comment 139-6

Thank you for your time and consideration.

Sincerely,

Nancy Gilmore

Board Member, Fresno Audubon Society

B.S., Mechanical Engineering, Cal Poly State University

Undergraduate Studies in Biology, Cal Poly State University

Fresno County Resident (40+ years)

From:	Lynn Gorman
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project DEIR
Date:	Monday, February 24, 2025 11:35:54 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior Planner,
Fresno County Dept. of Public Works and Planning

Fresno County Planning Commission

Comment 140-1

Re: the CEMEX Rockfield Quarry Modification Project DEIR, I would like to convey my opposition to the project, as the location is wrong for a hard rock project. The San Joaquin River corridor below Friant Dam was designated as a Mineral Resource Zone because of its' alluvial aggregate, not hard rock, resources. Those aggregates are near exhaustion, as has been recognized and planned for decades. The Counties of Fresno and Madera, the City of Fresno, the State, and the community at large have all recognized this, and planning and community expectations have shifted from resource extraction to residential development and open space uses.

Comment 140-2

The San Joaquin River Parkway and Conservation Trust, a local organization with widespread support, is an outgrowth of this long-anticipated phasing out of sand and gravel extraction on the San Joaquin River and the urgent need for local parks. This local commitment was recognized and supported by the State when it formed the San Joaquin River Conservancy to insure acquisition of these lands for ultimate public access and open space use. The Central San Joaquin Valley has the distinction of having fewer State parks than any other region, and Fresno, the 5th largest city in the State, has some of the lowest amount of open space per capita. The San Joaquin River represents a unique opportunity to correct this deficiency with a continuous and uninterrupted Parkway, a goal that many, including myself, have been working toward for decades. This project is entirely inconsistent with that goal.

Comment 140-3

Naturally-occuring aggregates are limited to current and historic river channels, which is the only reason why the MRZ designation was made on the San Joaquin River, but the hard rock of the Sierra makes up virtually the entire eastern County and underlies much of the Valley. Countless other local locations could be considered with far fewer environmental risks and impacts. Given the amount of mining already authorized within the local production-consumption region, there is no real need for this expansion, but even if there were a shortage of locally-produced sand, gravel, and other rock materials, there is no reason for a hard rock project such as this to be located directly on the San Joaquin River, with its' unique environment, and within the footprint of the long-anticipated Parkway. This is the wrong location and should not be approved.

Thank you for your consideration,

Lynn Gorman

14593 Buggy Whip Lane
Prather, CA 93651

559.916.4937

February 15, 2025

David Randall, Senior Planner
Fresno County Public Works Department
Development Services and Capitol Projects Division
2220 Tulare Streer 6th Floor
Fresno, CA 93721

Dear Mr. Randall,

I am writing to express my extreme disagreement with the proposed modification to the existing CEMEX Rockfield Quarry (EIR N0.7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667)

Comment 141-1

One of the greatest attributes to balanced, healthy life in Fresno and surrounding areas is the access to nature and natural environments. Access to and protection of the San Joaquin River and the nature corridor along its banks is of primary importance . Blasting for deep pit mining of aggregate material will be detrimental to the birds and other wildlife to say nothing of people living in the area. Excessive noise pollution is a known health risk.

Comment 141-2

The addition of heavy truck traffic hauling aggregate will add to the air pollution and be a continual traffic hazard to an already dangerous stretch of highway.

Comment 141-3

In addition there is no documented need for the increased aggregate to be blasted from the proposed 600 foot deep pit. According to the Aggregate Sustainability in California report, the Fresno region already has 556 million tons of permitted aggregate reserves more than enough to meet future needs.

Comment 141-4

Unfortunately, according to Good Jobs First, a Washington, DC based non-profit that tracks corporate and governmental accountability in economic development, CEMEX's record for environmental violations is of huge concern. The proposed project for deep pit mining is ripe with the possibility of environmental damage. How can Fresno disregard its people, its natural environment, its wildlife to a project run by a corporation with so little concern for its negative impact particularly when the product in question is not needed for future use?

Comment 141-5

PLEASE do not allow the proposed modification to the existing CEMEX Rockfield Quarry.

Sincerely,
Ellen B Hemink
Lynn D. Hemink

Ellen and Lynn Hemink
1418 East Sweetbriar Drive
Fresno, CA 93720

Ellen and Lynn
Hemink
1418 East Sweetbriar Drive
Fresno, CA 93720

FRESNO CA 936
21 FEB 2025 PM 1 L

RECEIVED
FEB 24 2025
FRESNO COUNTY PW & PLANNING

DAVID RANDALL, SENIOR PLANNER
FRESNO CERCUILY PUBLIC WORKS & PLANNING DEPT.
DEVELOPMENT SERVICES & CAPITAL PROJECTS DIVISION
2220 TULARE STREET 6TH FLOOR
FRESNO, CA 93721

93721-212706

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Ellen and Lynn Hemink
1418 East Sweetbriar Drive
Fresno, CA 93720

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Ms. Ellen and Ms. Lynn

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From:	Barry Kriebel
To:	Randall , David A.
Cc:	Adriana Zapata
Subject:	Cemex Quarry Fresno County
Date:	Monday, February 24, 2025 6:54:10 PM
Attachments:	Upcoming CEMEX Strategy Meetings.pdf

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall,
I am making these comments in opposition to the Cemex application. I am a long term member of the Fresno Community and an original homeowner at Woodward Lake since 1987, a long time supporter of the San Joaquin Parkway, and supporter of the agricultural and recreational uses of the San Joaquin River .
It is very common for companies to remove valuable resources from our lands without creating adequate financial resources to remedy their path of destruction. Unless Cemex voluntarily establishes a fully funded safe and secure escrow which can be used by the County to restore the land and its environmental effects, their application should be denied.

Comment 142-1

Barry F. Kriebel
633 East Teal Circle
Fresno, CA 93730
Cell: 1-559-259-2970
Email: bfkriebel@gmail.com

On Feb 24, 2025, at 10:45 AM, Adriana Zapata <adriana@regencyfresno.com> wrote:

Upcoming CEMEX Strategy Meetings

(Please see the attached flier) The River Parkway Trust will be hosting the next two CEMEX strategy meetings on **Thursday, February 27th, and Friday, February 28th** at the River Center.

Please feel free to share these meetings with anyone in your network who can join.

You are welcome to attend either meeting but shouldn't feel like you need to attend both, as the topics discussed will be the same.

Space is limited, so please use the links below to register.

Click **HERE** for past meetings PowerPoint.

THRUSDAY, FEBRUARY 27 at 5:30pm

FRIDAY, FEBRUARY 28 at 3:30pm

San Joaquin River Parkway and Conservation Trust | 11605 Old Friant Road | Fresno, CA 93730

Message from Lakefront President Kenneth Gatewood:

Hello Woodward Lake Lakefront Neighbor:

The Cemex corporation has operated two gravel quarries on Friant Road, adjoining the San Joaquin river. These quarries were supposed to have been shut down around the 2008 time period. However, the company now has a proposal before Fresno County planners, to continue these open-pit mines for the next 100 years, ultimately reaching 600 feet deep into the ground.

Cemex has submitted an Environmental Impact Report (EIR) to the County, listing dozens of extreme impacts to surrounding communities and the natural environment. Cemex will be blasting with unspecified explosives, emitting dust into the air, consuming ground water, and there will be hundreds of additional gravel truck trips on Friant Rd. and other city streets, just to name a few of the known effects.

The San Joaquin River Conservancy Trust is leading the opposition to this project. Your Lakefront Board has considered the issue and also feels this project will be severely detrimental to our quality of life. To voice your concerns, you are

invited to attend either strategy meeting as listed on the announcement attached. The meetings are duplicates for people's different schedules, so you only need to attend the one that fits your availability.

The community comment period ends March 10. The goal is to ask questions and make comments by then. County planners and Cemex must reply to all communications received before that deadline. Even if you cannot attend a strategy meeting, residents can contact the Fresno County Senior Planner as listed below. Please get involved and express your views on this issue. Together, we can be successful in preserving the quality of life in our Woodward Lake community. Thank you.

Link to more information on this project:

Cemex Rockfield Expansion - County of Fresno

Contact Information

Current Planning and Environmental Analysis (559) 600-4497
David Randall Senior Planner drandall@fresnocountyca.gov
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Ken Gatewood

Board President

Woodward Lake Lakefront Owners Association

San Joaquin River Parkway and Conservation Trust, Inc.

Upcoming CEMEX Strategy Meetings

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Space is limited, so please use the links below to register.

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Friday, February 28 at 3:30 pm

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Cemex Rockfield Expansion - County of Fresno

Contact Information
Current Planning and Environmental Analysis (559) 600-4497
David Randall Senior Planner drandall@fresnocountyca.gov
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Ken Gatewood
Board President
Woodward Lake Lakefront Owners Association

From: Leo & Carol
To: Randall , David A.
Subject: More Cemex concerns
Date: Monday, February 24, 2025 5:47:39 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX Rockfield Quarry EIR 7763 Proposal and the Future of the San Joaquin River

Dear David Randall,

February 24, 2025

Comment 143-1

This memorandum documents additional concerns that I have regarding the CEMEX Rockfield EIR7763. For reference, my initial concerns were sent to you on February 2, 2025 via EMAIL.

After I submitted my initial comments stating my strong objection to this EIR, I kept on learning more while discussing this EIR with other concerned citizens and reading the 3000 plus page EIR document, reviewing its impact on the environment, the community for several generations the more I become adamant against the approval of this project.

Do we need more Aggregate?

In discussions I was recently advised that the existing mines in our area can produce 180% of the needed aggregate! So I ask, why do we need more capacity for what we have an ample supply?

Nobody wants WANT!

Comment 143-2

I've shared my concerns with many other perplexed Fresno County Citizens and concluded that the EIR contains no metrics for ongoing monitoring of environmental issues and overall performance of CEMEX. In fact the Fresno

County monitors daily Air quality and often bands home fireplace uses on bad Air quality days! Yet they might approve a foreign LLC to further degrade the Air quality.

Comment 143-2 Cont.

Most citizens are already concerned about Water, Air, Noise and Traffic levels (WANT) and are adamant that we don't WANT any more contaminants added to our already fragile environment!

Comment 143-3

In addition, the blasting will not only add unwanted noise, but it will cause vibrations that are not defined and their repeated occurrence would cause many unknown effects on humans, waterfowl, other native animal species, the fish population and specifically the reintroduction of the Salmon population in the San Joaquin River. The potential for Water and Air pollution will be compounded by the blasting with the possibility of disturbing heavy metals and other contaminants and releasing them to the Air and Water which could contaminate the nearby San Joaquin River or the water table that neighbors depend upon for their well Water!

Comment 143-4

Comment 143-5

Monitoring WANT

Comment 143-6

The EIR should list the current levels of each contaminate, as well as, the maximum acceptable level of the WANT issues.

I would suggest that a licensed Independent Environmental Firm provide the basic levels for a normal safe community and the threshold that would have a negative impact on all forms of health and life in the area.

These potential contamination parameters would require constant checking and appropriate actions if exceeded. CEMEX would be responsible for monitoring the levels with periodic reporting to the County on the exact levels and trends. The County would be allowed to verify readings with unannounced audit visits. All equipment used would be required to have routine validation and calibrations completed by an authorized firm. Additionally, sensors for Air and Noise pollution would sound alarms when exceeded and send an immediate alert to the Fresno County officials for appropriate action.

Any breach of water from the San Joaquin River would require immediate stoppage in mining activity with a repair plan requiring approval of Fresno County Offices and execution of the plan at the sole expense by CEMEX until the damage is completely mitigated.

Comment 143-7

Cost for highway upgrades

The increase in Traffic activity in the nearby area is already a major concern with broken windshields and loose aggregate falling from CEMEX trucks. The speed limit in that area is 65MPH which is the expected highway speed and the CEMEX truck require a long distance to safely merge in or exit with Traffic especially when commuter Traffic is at peak. In addition, the fully loaded trucks are difficult to stop; they are hard on the highways due to their excessive weight when loaded with product. It is strongly recommended that CEMEX finances entrance and exit lanes to their sites to safely allow their trucks to enter and exit. I would also recommend that a study be performed at the intersection of Willow and Friant Road. This is where southbound Traffic turns left onto Willow at high speeds against Traffic moving at 60MPH. A traffic light may be required and if so the cost should also be borne by CEMEX.

Comment 143-8

Comment 143-9

Comment 143-10

Termination

I suggest that the EIR contains a section for "Termination For Cause" if CEMEX ever exceeds the levels established by the Independent Environmental Firm for WANT issues or other performance failures that the county not only has the right, but the obligation to terminate the site activity!

Comment 143-11

In addition to the WANT metrics there should be other measures that are part of maintaining acceptable limits on any project of this magnitude. They should include others such as:

Not adhering to the agreed work schedule

Exceeding the number of daily truck loads

Blasting during silent periods

And many, many more…….

Having an agreement for 100 years with no performance clauses is totally absurd. I would ask that Fresno County issue a statement of compliance with the current agreement that exits with CEMEX LLC. Comments have been made by many that they continually violate standards and they keep on mining.

Comment 143-12

If there are no standards and metrics then there is no obligation to perform!

I look forward to your response and I urge the Fresno County Supervisors to

Comment 143-12 Cont.

decline this CEMEX 100 YEAR request to blast and mine 600 FEET within 200 FEET of the San Joaquin River. That is just insane!

Respectfully,

Leo Labbe

559 281-2713

From:	Bill Schmidt
To:	Randall , David A.
Subject:	Objection to CEMEX expansion
Date:	Monday, February 24, 2025 2:08:49 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall:

I am writing to express my opposition to the proposed CEMEX expansion of their facility off Friant Road. Comment 144-1

I am a resident of Fresno County and live very close to the CEMEX facility. From our home, about 1.5 miles away, we can hear the loud plant operations at all hours. Further, the traffic on Friant due to the trucks transporting materials causes traffic delays. More importantly is the damage the heavy trucks cause to the roads. Comment 144-2

CEMEX stating, they will not or cannot support road improvements for the expansion is disingenuous. Comment 144-3

I understand that the materials taken from the plant are necessary for construction, however I believe the area has 180% of the needed material for decades to come that is financially feasible to mine. Comment 144-4

Please record my opposition to the expansion and add my email to any list of citizens who are kept updated on the proposal.

Regards,
Bill Schmidt

Bill Schmidt | William L. Schmidt, Attorney at Law, P.C. | mail to P.O. Box 25001, Fresno, CA 93729 | Office:+1.559.261.2222 | Fax: +1.559.436.8163 | Email: legal.schmidt@gmail.com

-

"The very essence of civil liberty certainly consists in the right of every individual to claim protection of the laws whenever he receives an injury."

Marbury v. Madison (1803) (John Marshall)

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From:	Sue Vaughn
To:	Randall , David A.
Subject:	CEMEX PROPOSAL
Date:	Monday, February 24, 2025 11:10:03 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 145-1

I am writing to protest the expansion of mines to include blasting and a continuation of the business for 100 years as it was original supposed to terminate its operations since 2008. I live at Woodward Lake and enjoy our outdoor activities in the area. The increased pollution will be detrimental to our environment including damage to our river water ecosystem.

Thank you for considering the long range effects of this important decision to the inhabitants of all the residents located near the blast areas.

Susan Vaughn

To Whom It May Concern:

I am a lifelong resident of Fresno, and my family and I are frequent visitors to the San Joaquin River Parkway trails. Our young daughters adore their trips to the River House and Sumner Peck Ranch, so we are now greatly concerned with the proposed CEMEX Rockfield expansion.

Comment 146-1

Adding a 600 foot deep pit is something that should not just be approved overnight; further studies, particularly in regards to the environmental impact, need to occur. Our 4 year old loves trying to find animal tracks as we hike along the nearby trails – animals that may be chased out of their natural habitat with this project. Then, of course, there would be added particulates to the air, adding to our already heavily impacted poor air quality. Again, this is in an area where so many Central Valley residents seek to enjoy the outdoors – we run and bike through Woodward Park and its extended trails, pick blueberries and citrus at Sumner Peck Ranch, to name a few. We should be able to enjoy what precious levels of fresh air that we can – again, what would be the projected environmental impact here in this regard?

Comment 146-2

Comment 146-3

We would also be interested to see the impact that the CEMEX plant in general has on the nearby water supply/water table, something that heavily dissuaded us from looking at an otherwise delightful piece of property along Old Friant Road, and something that continues to dissuade us from ever refilling our water bottles while we're down at the River House.

Comment 146-4

Lastly, I'm sure others will raise concerns over the traffic impact along Friant Road as well, an already heavily traveled thoroughfare. The large trucks leaving CEMEX and headed for the 41 onramps have affected many a work-time commute. Yet, I feel this is just a small concern in comparison to the long-term ramifications and environmental impact that this rockfield expansion could cause. As our daughter said, "Please protect our beautiful river."

Comment 146-5

Sincerely,

Kaili Zink-Hernandez & family

Zink-Hernandez
1230 E Kelso Ave.
Fresno, CA 93720

FREEDOM

RW

RECEIVED
FEB 24 2025
FRESNO COUNTY PW & PLANNING

David Randall
2220 Tulare St.
Sixth Floor
Fresno, CA 93721

22 FEB 2025 PM 2 L
SACRAMENTO CA 957

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Kaili Zink-Hernandez & Family
1230 E Kelso Ave.
Fresno, CA 93720

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Ms. Kaili

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From:	CAROLE BRYSON
To:	Randall , David A.
Cc:	District 1
Subject:	Rockfield Quarry Modification Project
Date:	Tuesday, February 25, 2025 3:47:53 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Comment 147-1

I'm sending this email to let you know I am opposed to the Rockfield Quarry Modification Project. From what I've read about it, it benefits Cemex company, but there is no benefit at all to the residents of Fresno County.

We are in need of parks, playgrounds, and other quiet green spaces where we can relax and enjoy nature, wildlife, and just being out of doors. This project threatens that.

Comment 147-2

We (and the whole valley) need clean water. Water is precious here, and this project, so close to the river, would endanger our supply.

Comment 147-3

There will be traffic delays at the affected intersections, with no plans to remedy the delays. How does that make things better for taxpayers?

Comment 147-4

All of this, just to benefit Cemex. Fresno County doesn't even need the aggregate that will be mined; the County has enough aggregate for the next 50 years.

Comment 147-5

I've lived in this area for a long time, and so often I have seen taxpayers get stuck with paying for infrastructure, cleanup, etc. while developers and big companies profit from their projects.

Please don't allow this unnecessary and potentially harmful project to go forward.

Carole Bryson
4698 W. Hammond Ave.
Fresno, CA 93722

From: Mitchelldhall
To: Randall , David A.
Subject: In opposition to Cemex
Date: Tuesday, February 25, 2025 3:09:26 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX Rockfield Quarry EIR 7763 Proposal and the Future of the San Joaquin River

Dear David Randall,

As a member of Fresno Fly Fishers for Conservation and a concerned resident of Fresno County, I am writing to express my deep opposition to the CEMEX proposal that would extend commercial mining operations on the banks of the San Joaquin River for the next 100 years.

This area is one of the most spectacular parcels of land in the region, yet public access remains extremely limited. Instead of prioritizing conservation and community use, this agreement would extend private and commercial restrictions, preventing generations of Fresno County residents from enjoying this vital natural resource.

I am particularly concerned about the expedited approval process for this 100-year commitment. The brief public comment period, which ends on March 10th is far too little time for Fresno County residents to learn about the project's consequences. A project of this magnitude demands thorough consideration, not a rushed decision that will impact future generations.

The environmental consequences of this project cannot be ignored. The California Department of Fish and Wildlife (CDFW) has made significant strides in reintroducing salmon to the San Joaquin River, yet this mining operation could jeopardize these efforts. The increased truck traffic, potential river pollution, and habitat destruction would be devastating for local wildlife. Fracking and blasting a 600-foot mine so close to the river could lead to accidental discharges, seepage, and contamination of the surrounding water table endangering both aquatic ecosystems and local wells.

Beyond the environmental harm, this project poses economic concerns. CEMEX, a foreign-owned LLC, is granted limited liability by design, meaning if damages occur, there may be little accountability. Moreover, the current agreement lacks measurable performance oversight, and reports indicate repeated violations of work schedules and environmental standards. The increased truck traffic alone—up to 1,000 trucks per day will degrade our roads and impact local residents, with little assurance that CEMEX will be held responsible for the consequences.

Fresno County deserves better. Rather than approving a destructive mining operation, this land should be preserved and made accessible to the public. A park or conservation area would not only protect the environment but could also generate long-term revenue through recreation, tourism, and sustainable business opportunities. A private mine will only benefit a foreign corporation, while our community bears the long-term costs.

I urge you to reconsider this agreement and advocate for a better future for Fresno County. Our community has the right to more input and a greater say in how this land is used. Please extend the public comment period and conduct a thorough review of the environmental and economic impacts before making a decision that will affect our region for the next century.

Thank you for your time and consideration. I look forward to your response on this critical issue.

Sincerely,
Mitchell Hall

3293 Triangle Rd.,

Mariposa, CA 95338

Fresno Fly Fishers for Conservation

Comment 148-1

Comment(s) 148-2 148-3

148-4, 148-5, 148-6, 148-7 148-8, 148-9, 148-10, 148-11, 148-12

Comment(s) 148-13 148-14

Mitchell Hall

714 299-7633

Feb. 25, 2025

Dear Mr Randall,

Comment 149-1

As a concerned senior citizen who has witnessed the effects of exploitation of the earth's resources for monetary profit - I urge you to use wisdom and conscience to oppose the upcoming proposal that would allow the CEMEX corporation to further mine the Banks of the San Joaquin River.

We must start reversing the damage that we have been inflicting - as future generations will be the ones paying for our greed.

God has given us all we need in a remarkable ecosystem that is designed to sustain us all - if we would start protecting the environment as wise stewards.

Please do the right thing - for the sake of, and responsibility to the future inhabitants of our land.

Sincerely,
Linda Odell
(resident of Clovis)

From:	jactag@sbcglobal.net
To:	Randall , David A.
Subject:	Opposition to CEMEX Rockfield Expansion
Date:	Tuesday, February 25, 2025 4:26:27 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

As a resident of Fresno City, I wish to express my opposition and concern regarding the extension of the CEMEX Quarry along the San Joaquin River. I feel this is so very wrong on many levels. This would be a huge threat to our natural resource of the San Joaquin River. My main reasons for opposing this project are the environmental impact on the ecosystem and biodiversity of the area, increased air pollution, increased water usage, increased heavy truck usage of Friant Road, and the impact of explosives in a sensitive area.

Please do not let this company have the permits it seeks.

Comment 150-1

Comment(s) 150-2, 150-3 150-4, 150-5, 150-6 Comment 150-7

Respectfully,
Jackie Taggart
7055 N. Teilman Ave., #102
Fresno, CA 93711

Sent from my iPhone

From:	Julie Taylor
To:	Randall , David A.
Subject:	CEMEX
Date:	Tuesday, February 25, 2025 11:10:23 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am writing to express my deep concern over the proposal CEMEX is making. This will affect so much in that area. Comment 151-1

I'm sure you are aware that state geologists have written that 305 million tons of aggregate will be needed for the next 50 years worth of construction. We currently have 556 million tons of permitted aggregate reserves. Since these reserves mostly come from Minkler and Austin quarries, the only reason CEMEX wants this project on the San Joaquin river is to increase their profits. I imagine they will sell everything from the proposed plant to other locales.

Why does Fresno need this imposition of the increased noise (from blasting) and traffic, plus the possibility of shaft collapse (that BTW doesn't require CEMEX to put money in reserve to pay for potential damage)? Comment(s) 151-2, 151-3

It's possible that much lower on your list of things to consider are the potential effects on the environment- water quality, encroachment on a state ecological preserve, as well as on residents in surrounding communities. However, these ecological effects are often disregarded by those who only look at profit. Comment 151-4, 151-5 151-6

I am asking you to seriously consider not just profit but all the side effects that a project such as this will have on this community.

My vote is NO.

Sincerely,

Julie Taylor

Sent from my iPhone

From: Neil Thompson
To: Randall , David A.
Subject: CEMEX Rockfield Quarry Modification Project EIR 7763
Date: Tuesday, February 25, 2025 12:59:06 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Comment 152-1

As specified in Section 2.5.4 of the Executive Summary, the current count of 55 employees at the Plant Site process (and deliver as Ready-Mix drivers) the 1.4 MT annual production as allowed by the current CUPs. This equates to 25,455 tons per employee on an annual basis. According to Table Note b. of Table 4.17-1, the interplant haul is accomplished by six private party truckers who arrive and leave the site with their own trucks and are, therefore, not employees.

In Table 2-6 the employee count for Stage 1 (5 years) increases to 57 employees who will process (and deliver) 2.0 MTY, or 35,088 tons per employee annually. This amounts to a 38% increase in the production rate with two additional employees. What accounts for the significant production increase? Or will the employee count increase?

In Table 2-6 the employee count for Stage 1 (10-30 years) and Stage 2 (30-100 years) increases to 60 employees who will process (and deliver) 3.0 MTY, or 50,000 tons per employee annually. This amounts to a 42 % increase in the production rate with three additional employees. What accounts for the significant increase? At 50,000 tons per employee this is a 96% increase over the existing production rate. Will they really be able to double their efficiency? What happens if they do not significantly increase their efficiency? A ready-mix truck will only hold 9.5 cubic yards. The efficiency of those drivers can increase only if they drive substantially faster or drive a substantially shorter distance.

Table 4.17-1 Existing Annual Trip Generation at Plant and Quarry Sites provides conflicting employee data that does not correlate with Table 2-6. Table 4.17-1 shows annual Trips for employees at the Quarry Site (entering and exiting totaling 500 annual trips) and at the Plant Site (entering and exiting totaling 26,926 annual trips) for a total employee trip count of 27,426 annual trips. Dividing by 365 days per year results in an employee count of 75.14. This is significantly more than the 55 employees that are claimed in Table 2-6. Why is there a difference?

Likewise, in Table 4.17-2 Project Annual Trip Generation – Stage 1 (2.0 MT Per Year) provides conflicting employee data that does not correlate with Table 2-6. Table 4.17-2 shows annual Trips for employees at the Quarry

Site (entering and exiting totaling 6,000 annual trips) and at the Plant Site (entering and exiting totaling 22,602 annual trips) for a total employee trip count of 28,602 annual trips. Dividing by 365 days per year results in an employee count of 78.36. This is significantly more than the 57 employees that are claimed in Table 2-6. Why is there a difference?

Further, in Table 4.17-3 Project Annual Trip Generation – Stage 1 (3.0 MT Per Year) provides conflicting employee data that does not correlate with Table 2-6. Table 4.17-3 shows annual Trips for employees at the Quarry Site (entering and exiting totaling 6,000 annual trips) and at the Plant Site (entering and exiting totaling 24,252 annual trips) for a total employee trip count of 28,602 annual trips. Dividing by 365 days per year results in an employee count of 82.88. This is significantly more than the 60 employees that are claimed in Table 2-6. Why is there a difference?

Finally, in Table 4.17-4 Project Annual Trip Generation – Stage 2 (3.0 MT Per Year) provides conflicting employee data that does not correlate with Table 2-6. Table 4.17-4 shows annual Trips for employees at the Quarry Site (entering and exiting totaling 30,252 annual trips) for a total employee trip count of 28,602 annual trips. Dividing by 365 days per year results in an employee count of 82.88. This is significantly more than the 60 employees that are claimed in Table 2-6. Why is there a difference?

Table 4.17-1 Existing Annual Trip Generation at Plant and Quarry Sites shows 39,906 total annual trips for Ready-Mix concrete sales whereas Table 4.17-3 Project Annual Trip Generation – Stage 1 (3.0 MT Per Year) shows 63,158 total annual trips for Ready-Mix concrete sales – a 58% increase. However, the increase in total aggregate production from 1.4 MTY to 3.0 MTY is a 114% increase. Why is the increase in Ready-Mix production substantially less (50%) than the total aggregate production increase.

Substantial review and reconciliation of the actual and projected employee counts is warranted.

Thank you for your consideration.

Neil Thompson
514 E. Cole Ave.
Fresno, CA 93720
nsthompson@aol.com
(559) 977-3339

From:	District 2
To:	A Allaire; Randall , David A.; District 2
Subject:	RE: CEMEX applications 3666 and 3667
Date:	Wednesday, February 26, 2025 2:43:41 PM
Attachments:	image001.png

Hi Aida,

Thank you for reaching out to share your concerns regarding the CEMEX mining operation near the San Joaquin River. We understand and appreciate your passion for protecting our natural resources and maintaining the environmental integrity of our region.

Please know that we are carefully reviewing the matter, considering both environmental and community impacts. Public input is an essential part of this process, and your concerns will be taken into account as we evaluate the best course of action. I'll note your objections and share your sentiments with Supervisor Bredefeld.

Thank you again for reaching out, and please don't hesitate to contact our office if you have any further questions or concerns.

Best regards,

Jennifer Ortega
Community Relations & Digital Marketing Manager
Supervisor Garry Bredefeld, District 2
2281 Tulare St., Suite 304, Fresno, CA 93721
Office: (559) 600-2000 | Direct: (559) 600-2002
Email: jeortega@fresnocountyca.gov

With strong, proven leadership, we are committed to keeping the government accountable and working for the taxpayer.

From: A Allaire <asallaire@yahoo.com>
Sent: Tuesday, February 25, 2025 1:36 PM
To: Randall , David A. <drandall@fresnocountyca.gov>; District 2 <district2@fresnocountyca.gov>
Subject: CEMEX applications 3666 and 3667

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK Report Suspicious

Dear Mr. Randall and Mr. Bredefeld,

I strongly oppose allowing CEMEX to continue its mining operation close to the San Joaquin River. Please don't allow the drilling and blasting of a 600-foot deep pit so close to the river.

Comment 153-1

Thank you.

Aida Allaire
Fresno, CA

From:	Neil Thompson
To:	Randall , David A.
Cc:	San Joaquin River Parkway and Conservation Trust; Sarah Parkes
Subject:	CEMEX Rockfield Quarry Modification Project EIR 7763
Date:	Wednesday, February 26, 2025 4:39:36 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

According to Section 2.2.2 of the Executive Summary: "*Upon approval of the project, the combined annual sales of aggregate from both sites are estimated to increase from the 1.4 MT/year allowed under the current permits to 2.0 MT/year within approximately five years of project approval and up to 3.0 MT/year within approximately 10 years of project approval.*" Comment 154-1

According to this statement, impacts to Pavement Conditions would not be triggered until the project attained the 3.0 MT per year threshold, currently estimated to be 10 years after project approval.

- The 3.0 MT per year threshold is more than twice the current 1.4 MT permitted production rate.
- What happens if the project never produces 3.0 MT/year?
- What if the production rate is held slightly less than 3.0 MT/year but more than twice the current 1.4 MT/year allowable to avoid triggering the Pavement Condition Mitigation 4.17-1b?
- What recourse does the County have to obtain compensation for the deteriorating pavement conditions caused by significant overloading?

Table 4.17-10 indicates the Existing Traffic Index to be 9.5. Comment 154-2

What Traffic Index was utilized for the current pavement section design and existing construction? Was it less than the current traffic flow TI of 9.5?

Mitigation Measure 4.17-1b should be revised to include: The County should start collecting 1/20th of the project's share during the first year of the project and continue collecting every year for one hundred years. The equitable fair share contribution shall be recalculated every 20 years. Comment 154-3

- Because the design life of pavement is typically 20 years, the project should contribute its fair share over each of the five 20-year periods over the lifetime of the project.

Thank you for your consideration.

Neil Thompson
514 E. Cole Ave.
Fresno, CA 93720
nsthompson@aol.com
(559) 977-3339

From:	Vickie Klassen
To:	Randall , David A.
Subject:	CEMEX expansion
Date:	Thursday, February 27, 2025 8:10:20 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

To whom it may concern:

I'd like to voice my opposition to the permit for CEMEX to expand their operations. This would be a great dis-service to out environment and our community!
Please do NOT allow this to pass.

Comment 155-1

Thank you!
Sincerely,

Vickie Klassen
Fresno resident and nature enthusiast

March 3, 2025

David Randall, Fresno County Senior Planner
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Sir,

CEMEX, a multinational mining company wants to dynamite a 600 foot deep pit too close to the San Joaquin River. County planners spent 5 years preparing a 3,767 page draft EIR for the so-called **"Rockfield Quarry Modification Project".** Comment 156-1

For the Fresno area, the ***Aggregate Sustainability in California*** report (last updated by the **California Geological Survey** in 2018) states that 305 million tons of aggregate will be needed for the next 50 years. We already have **556** million tons of permitted aggregate reserves.

If the wall of earth separating the river and the open mine gave way, a **disaster** would result. Comment 156-2

For these and many other reasons please oppose the development of the **Rockfield Quarry Modification Project** Comment 156-3

Cheryl Milnac
3555 W. Bullard Ave.
#225
Fresno, CA 93711

Feb. 27, 2025

David Randall, Fresno County Senior Planner
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Sir,

CEMEX, a multinational mining company wants to dynamite a 600 foot deep pit too close to the San Joaquin River. County planners spent 5 years preparing a 3,767 page draft EIR for the so-called **"Rockfield Quarry Modification Project".**

For the Fresno area, the ***Aggregate Sustainability in California*** report (last updated by the **California Geological Survey** in 2018) states that 305 million tons of aggregate will be needed for the next 50 years. We already have **556** million tons of permitted aggregate reserves.

If the wall of earth separating the river and the open mine gave way, a **disaster** would result.

For these and many other reasons please oppose the development of the **Rockfield Quarry Modification Project**

JENNIFER WILLIAMSON
5515 N. FRESNO 93710
#117.

KAREN CHAMBERS
5515 N. FRESNO ST.
93710 #292

Marjorie D Sittner
5515 N. Fresno St. #127
93710

Ann Lusk
5676 N. Nantucket
93704

Joann L. Phillips
5545 N. Fresno St.
Fresno, CA 93710

Louise Richardson
1674 W Bullard
Fresno CA 93711

March 3, 2025

David Randall, Fresno County Senior Planner
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Sir,

CEMEX, a multinational mining company wants to dynamite a 600 foot deep pit too close to the San Joaquin River. County planners spent 5 years preparing a 3,767 page draft EIR for the so-called **"Rockfield Quarry Modification Project".**

For the Fresno area, the ***Aggregate Sustainability in California*** report (last updated by the **California Geological Survey** in 2018) states that 305 million tons of aggregate will be needed for the next 50 years. We already have **556** million tons of permitted aggregate reserves.

If the wall of earth separating the river and the open mine gave way, a **disaster** would result.

For these and many other reasons please oppose the development of the **Rockfield Quarry Modification Project**

Kenneth Richards
4622 N. Harrison
Fresno CA 93704

Jeri Stubblefield
16898 Road Runner Ln
Clovis CA 93619
jeristubblefield@gmail.com

Tim Kutzmark
2732 E. Darlington Ct
Fresno CA 93720

Jackie Newman
4733 W. Alluvial Ave
Fresno 93723

Judith Switzer
4743 N. Safford
Fresno, California 93704

Elizabeth Arenas #412
45323 Park Sierra
Coarsegold CA 93614

Laura Radinoff
4915 E. Sooner Dr.
Fresno, CA 93727

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Cheryl Milnac
3555 W. Bullard Ave. #225
Fresno, CA 93711

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Ms. Milnac

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

Feb. 27, 2025

David Randall, Fresno County Senior Planner
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Sir,

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For the Fresno area, the ***Aggregate Sustainability in California*** report (last updated by the **California Geological Survey** in 2018) states that 305 million tons of aggregate will be needed for the next 50 years. We already have **556** million tons of permitted aggregate reserves.

If the wall of earth separating the river and the open mine gave way, a **disaster** would result. Comment 157-2

For these and many other reasons please oppose the development of the **Rockfield Quarry Modification Project** Comment 157-3

JENNIFER WILLIAMSON
5515 N. FRESNO 93710
#117.

KAREN CHAMBERS
5515 N. FRESNO ST.
93710 #292

Marjorie D Sitner
5515 N. Fresno St. #127
93710

Ann Lusk
5676 N. Abby Ct
93704

Joann L. Phillips
5545 N. Fresno St.
Fresno, CA 93710

Louise Richardson
1674 W Bullard
Fresno CA 93711

From:	Laura Rosenberger Haider
To:	Randall , David A.; d.randall@fresnocounty.ca.gov
Subject:	Comments on CEMEX Draft EIR
Date:	Thursday, February 27, 2025 4:58:00 AM

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Report Suspicious

Comment 158-1

Section 4.10-43 -Hydrology shows that in one well, gross alpha radiation activity was over the water quality standard. The NRC stated that no level of radiation exposure is safe. A USGS study by Dr. Peter McMahon (around 2019) led him to claim that manganese pulls radium out of sediment. Table 4.10-6 shows that at the Rockfield Quarry site, manganese was not within water quality standards in 3 wells.

CEMEX

David Randall, Fresno County Senior Planner
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

February 27, 2025

Dear Sir,

As a long time resident in Fresno, I am asking you to oppose the Rockfield Quarry Modification Project. My concerns are long range considerations, something that must be considered when making decisions that impact the entire San Joaquin Valley.

Environmentally, the project will increase an already serious air quality problem in the San Joaquin Valley. Comment 159-1

CEMEX had already agreed to wind down their activity. State geologists have stated there is no need for more aggregate as the reserve supply is greater than the need for the next fifty years. Comment 159-2

The rapidly growing metropolitan area around Fresno is growing so fast that traffic congestion is now a problem without having to also deal with trucks hauling rock. Comment 159-3

It will also endanger one of the best treasures in the valley, what is left of the San Joaquin River. Currently, water quality is good and recreational use becoming one of the best hidden adventures in Fresno! The dust and possible breaching of overflow from the excavation would cause permanent harm to not only the river but also the ribbon of trees and wild life along the river. Comment 159-4 Comment 159-5

Please vote NO.

Julia Smith

Julia Smith
5545 N. Fresno Street, Apt. 307
Fresno, CA 93710

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 10, 2025

Ms. Julia Smith
5545 N. Fresno Street, Apt. 307
Fresno, CA 93710

Comment letter on CEMEX Rockfield Quarry EIR 7763

Ms. Smith

We received your letter dated February 27, 2025, regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

March 3, 2025

David Randall, Fresno County Senior Planner
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Sir,

CEMEX, a multinational mining company wants to dynamite a 600 foot deep pit too close to the San Joaquin River. County planners spent 5 years preparing a 3,767 page draft EIR for the so-called **"Rockfield Quarry Modification Project".**

Comment 160-1

For the Fresno area, the ***Aggregate Sustainability in California*** report (last updated by the **California Geological Survey** in 2018) states that 305 million tons of aggregate will be needed for the next 50 years. We already have **556** million tons of permitted aggregate reserves.

If the wall of earth separating the river and the open mine gave way, a **disaster** would result.

Comment 160-2

For these and many other reasons please oppose the development of the **Rockfield Quarry Modification Project**

Comment 160-3

Kemant Rukhu
4622 N. Harrison
Fresno CA 93704

Jeri Stubblefield
16898 Road Runner Ln
Clovis CA 93619
jeristubblefield@gmail.com

TIM KUTZMARK
2732 E. Darlington Ct
Fresno CA 93720

Jackie Newman
4733 W. Alluvial Ave
Fresno 93723

JUDITH SWICK
4743 N. Safford
Fresno, California 93704

Elizabeth Prenge #412
45323 Park Sierra
Coarsegold CA 93614

Laura Radinoff
4915 E. Sooner Dr.
Fresno, CA 93727

Feb. 27, 2025

David Randall, Fresno County Senior Planner
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Sir,

CEMEX, a multinational mining company wants to dynamite a 600 foot deep pit too close to the San Joaquin River. County planners spent 5 years preparing a 3,767 page draft EIR for the so-called **"Rockfield Quarry Modification Project".**

For the Fresno area, the ***Aggregate Sustainability in California*** report (last updated by the **California Geological Survey** in 2018) states that 305 million tons of aggregate will be needed for the next 50 years. We already have **556** million tons of permitted aggregate reserves.

If the wall of earth separating the river and the open mine gave way, a **disaster** would result.

For these and many other reasons please oppose the development of the **Rockfield Quarry Modification Project**

JENNIFER WILLIAMSON
5515 N. FRESNO 93710
#117.

KAREN CHAMBERS
5515 N. FRESNO ST.
93710 #292

Marjorie D Sittner
5515 N. Fresno St. #127
93710

Ann Lusk
5676 N. Nantucket
93704

Joann L. Phillips
5545 N. Fresno St.
Fresno, CA 93710

Louise Richardson
1674 W Bullard
Fresno CA 93711

David Randall, Fresno County Senior Planner
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

March 3, 2025

Dear Sir,

CEMEX, a multinational mining company wants to dynamite a 600 foot deep pit too close to the San Joaquin River. County planners spent 5 years preparing a 3,767 page draft EIR for the so-called **"Rockfield Quarry Modification Project".**

For the Fresno area, the ***Aggregate Sustainability in California*** report (last updated by the **California Geological Survey** in 2018) states that 305 million tons of aggregate will be needed for the next 50 years. We already have **556** million tons of permitted aggregate reserves.

If the wall of earth separating the river and the open mine gave way, a **disaster** would result.

For these and many other reasons please oppose the development of the **Rockfield Quarry Modification Project**

Cheryl Mienac
3555 W. Bullard Ave.
#225
Fresno, CA 93711

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Jeri Stubblefield
16898 Road Runner Ln.
Clovis, CA 93619

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Ms. Stubblefield

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From:	Cindy Volpa
To:	Randall , David A.
Subject:	Cemex Proposal
Date:	Thursday, February 27, 2025 8:46:54 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall—

I just became aware of the proposal being submitted to the County by the Cemex corporation. I live in close proximity to the quarries and also spend a great deal of time enjoying the river nearby. I am so distressed by the proposal and can't believe it's even being considered.

Comment 161-1

I'm aware that Cemex has had to submit an environmental impact report. The results should speak to the issues of proximity to the San Joaquin River, the depletion of ground water, and of course the threats to the nearby wildlife. I'm planning to attend the meeting on February 28th.

Comment(s) 161-2 161-3

Please pass my letter along to the committee considering this horrifying proposal.

Thank you!

Cindy Volpa

From: Joe Volpa
To: Randall , David A.
Subject: Cemex Proposal
Date: Thursday, February 27, 2025 8:50:26 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall—

I just became aware of the proposal being submitted to the County by the Cemex corporation. I live in close proximity to the quarries and also spend a great deal of time enjoying the river nearby. I am so distressed by the proposal and can't believe it's even being considered.

Comment 162-1

I'm aware that Cemex has had to submit an environmental impact report. The results should speak to the issues of proximity to the San Joaquin River, the depletion of ground water, and of course the threats to the nearby wildlife. I'm planning to attend the meeting on February 28th.

Comment(s) 162-2 162-3

Please pass my letter along to the committee considering this horrifying proposal.

Thank you!

Joe Volpa

Sarah Allison
528 N Rio Vista Ave
Sanger, CA 93657
allisonsarah85@gmail.com
559.231.6079
2/28/25

David Randall, Senior Planner

Fresno County Public Works and Planning Department

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Subject: STRONG OPPOSITION to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report

Dear Mr. Randall,

I am writing to formally express my strong opposition to the proposed 100-year permit for the CEMEX mining operation and to challenge the adequacy of the Draft Environmental Impact Report (EIR) prepared for this project. The EIR, as currently drafted, does not sufficiently or accurately assess the environmental, ecological, and community impacts that this long-term operation will have on the San Joaquin River and surrounding areas. This 100-year permit is a threat to the beauty of Fresno County.

Comment 163-1

As someone who has worked in an industrial setting for over 18 years, I appreciate clean air, open spaces, and pristine pockets of green space and wildlife in and around the San Joaquin River. Many people do! It is a respite from the hustle and bustle of the cities and towns in Fresno County. I find that the EIR fails to adequately address the following concerns:

1. Impacts on wildlife habitat
2. Water quality
3. Air pollution-from the production facility and from trucks going in and out.
4. Noise pollution

Comment(s) 163-2 163-3 163-4 163-5

5. Groundwater depletion---the citizens and farmers of Fresno County cannot spare one drop of fresh water for a project like this.
6. Industrial blight. ---don't ruin the beauty of the San Joaquin River with something like this.

Comment(s) 163-6 163-7

A project of this scale and duration requires a far more comprehensive environmental review that includes thorough scientific analysis, long-term cumulative impact assessments, and meaningful mitigation strategies. The EIR, as it stands, does not meet these standards, and I urge Fresno County to require revisions that fully account for the long-term consequences of extending CEMEX's mining operations.

Comment 163-8

I request that the Planning Department reconsider this permit considering the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.

Thank you for your time and consideration.

Sincerely,

Sarah Allison
Lifelong Fresno County Resident

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Sarah Allison
528 N. Rio Vista Ave.
Sanger CA, 93657

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Ms. Allison

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From:	Stephanie
To:	Randall , David A.
Subject:	Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report
Date:	Friday, February 28, 2025 2:13:21 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am writing to formally express my opposition to the proposed 100-year permit for the CEMEX mining operation and to challenge the adequacy of the Draft Environmental Impact Report (EIR) prepared for this project. The EIR, as currently drafted, does not sufficiently or accurately assess the environmental, ecological, and community impacts that this long-term operation will have on the San Joaquin River and surrounding areas.

Comment 164-1

As someone with experience in outdoor recreation, I find that the EIR fails to adequately address the following concerns:

Comment 164-2

1. Impacts on wildlife habitat and water quality
2. Air pollution and noise pollution
3. Groundwater depletion and cumulative environmental impacts

Comment(s) 164-3 164-4, 164-5

A project of this scale and duration requires a far more comprehensive environmental review that includes thorough scientific analysis, long-term cumulative impact assessments, and meaningful mitigation strategies. The EIR, as it stands, does not meet these standards, and I urge Fresno County to require revisions that fully account for the long-term consequences of extending CEMEX's mining operations.

Comment 164-6

I request that the Planning Department reconsider this permit in light of the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.

Thank you for your time and consideration.

Sincerely,
Stephanie Castillo

From:	Diana Durham
To:	Randall , David A.
Subject:	Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report
Date:	Friday, February 28, 2025 12:48:50 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am writing to formally express my opposition to the proposed 100-year permit for the CEMEX mining operation and to challenge the adequacy of the Draft Environmental Impact Report (EIR) prepared for this project. The EIR, as currently drafted, does not sufficiently or accurately assess the environmental, ecological, and community impacts that this long-term operation will have on the San Joaquin River and surrounding areas.

Comment 165-1

As someone with familiarity with the location I find that the EIR fails to adequately address the following concerns:

Comment 165-2

1. Impacts on wildlife habitat, water quality, air pollution, noise pollution, groundwater depletion, cumulative environmental impacts, and community health.
2. Safety concerns for recreational cyclists on Friant Road.
3. Beauty of the San Joaquin River.

Comment(s) 165-3 165-4

A project of this scale and duration requires a far more comprehensive environmental review that includes thorough scientific analysis, long-term cumulative impact assessments, and meaningful mitigation strategies. The EIR, as it stands, does not meet these standards, and I urge Fresno County to require revisions that fully account for the long-term consequences of extending CEMEX's mining operations.

Comment 165-5

I request that the Planning Department reconsider this permit in light of the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.

Thank you for your time and consideration.

Sincerely,

Diana Durham
1336 E. Quincy Ave
Fresno, CA. 93720
Diana.durham1336@gmail.com
559-301-4021

From: cham895@aol.com
To: Randall , David A.
Subject: Fw: Cemex Rockfield Expansion
Date: Friday, February 28, 2025 12:51:22 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hi David!
I've been reading the EIR for the Cemex Rockfield Expansion. It is clearly written and very helpful in understanding the effects of the project might have. Comment 166-1

I have some questions I was hoping your staff can answer.

1. I have heard that there have been tainted wells of nearby landowners as a result of the current operations. If so, what was done by Cemex and the county to remedy the problem.

2. There appears to be a risk, of an excavation pit wall which borders the river, of potentially collapsing. The report states that the company will monitor regularly to prevent. Is there a required scheduled for that monitoring? If there is a collapse and any toxic waste is washed into the river... who pays for the clean up? Comment 166-2

3. A 600 foot deep mining operation that lasts 100 years is a project that is so vast in scope and repercussions that it is difficult to truly monitor and hold people accountable. What prevents an international business, like CEMEX, from walking away from a toxic, deep pit and leaving the locals to pay for the clean up. The proposed bond is unlikely to be large enough to cover any major damage. Comment 166-3 Comment 166-4

4. If Mexico doesn't allow this type of mining, why are we approving it?

Thank you for your hard work. Government employees are so under threat and under appreciated these days. I just want you to know I am thankful for people like you who are helping to create beautiful communities for all the citizenry. Comment 166-5

Sincerely,

Chris Hamilton

559-301-4421

From: cham895@aol.com
To: Randall , David A.
Subject: Fw: Cemex Expansion Project along Friant Road
Date: Friday, February 28, 2025 12:53:20 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hi David!

Re: Cemex Expansion on Friant Road

I have some additional concerns regarding this project that I don't see covered by the DEIR. I'm looking forward to hearing your findings. Comment 167-1

1. **Increased particulate matter from diesel trucks resulting in increase health risks not addressed.**
The projected average number of daily truck trips for this project is between 650 to over 900 daily truck trips based on the charts in the study. The particulate emissions from the diesel trucks is much higher and more toxic than auto emissions especially with more EV and hybrid vehicles on the road . Higher particulate matter results in greater risks of developing cancer and asthma. There has to be an increase in health risks, such as cancer and asthma, for people along the trucks' routes but the DEIR doesn't address that. Proximity makes a difference.

2. **Incorrect baseline for statistics** Comment 167-2
In the study, Cemex has a baseline for air pollution and wear and tear on the roadways that is calculated incorrectly. It calculates effects based on what CEMEX operations are already creating rather than starting at **zero** which would reflect if the business was not operating so no damage was done to the air or the roadways. If the company completed mining the surface level deposits as first approved, they would have completed it within the 100 year time frame. Then, the baselines would reflect "no damage"- "0" to use as the basis for the deciding whether to allow expansion and blasting.

3. **Incorrect calcuations of Cemex operation damage to roadway and mitigations insufficient** Comment 167-3
According to government statistics, large semi trucks create 15 times the wear and tear on a roadway compared to a passenger vehicle. In the DEIR, Cemex calculates their share of the responsibility by number of vehicles in each category (auto vs Cemex trucks) during the day not by proportional damage. It also states that there are no funds to mitigate needed roadway improvements. Wouldn't that be another reason to not have this project. If a multibillion dollar company, doesn't value its impact on the surrounding community enough to prevent decline of safety and quality of life for residents of Fresno County, then their requests should be denied.

4. **Safety- No stats re: damage to people and vehicles due to truck spills**
I drive my car and ride my bicycle with friends on Friant road several days a week. There is no question that having trucks filled with rock and gravel pose a danger to both car and bike traffic. There is always gravel in the bike lane and often 6 inch boulders that have been dropped off passing trucks. A nearby resident was driving his car and hit a 6" boulder with their car and sustained considerable damage. The community is trying to promote bicycling for health and recreation but it doesn't take much in the roadway to have a life changing accident. Fresno has experienced tremendous growth in the last 100 years when a simple conditional use permit was given. The huge developments that are being built have changed the use of Friant Road from a rural 2 lane road to a 4 lane residential commute route. The benefits of expanding the project do not compensate for the negative impacts it causes.

Comment 167-4

5. **Fresno Already Has Sufficient Sand & Gravel Resources - Additional Mining Not Needed**
The DEIR does not acknowledge that the California State Department of Mines and Geology has found that Fresno has 180% of the sand and gravel it needs for the next 30 years. Why create a 400-600 foot deep crater in the earth that threatens the health of the San Joaquin river and its wildlife if we don't even know what our needs will be 30 years from now.

Comment 167-5

6. **How many loads (% of business) are delivered outside the Fresno Area**
Fresno has 180% of the supplies it needs for the next 30 years. The DEIR does not provide information regarding how many loads and percentage of their business is trucked out of Fresno County. Longer deliveries create greater air pollution for the valley. If the supplies aren't needed locally and are being shipped to other places, the people of Fresno are bearing the environment burden for international corporate profits. The expansion should thus be denied.

Comment 167-6

Thank you for all your hard work. I appreciate your dedication to create a healthy, happy and successful community through wise planning and development.

Chris Hamilton
559-301-4421

Judith Looby
34650 Douglas Ranger Station Rd
North Fork, CA 93643
February 28, 2025

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report

Dear Mr. Randall,

I am writing to formally express my opposition to the proposed 100-year permit for the CEMEX mining operation and to challenge the adequacy of the Draft Environmental Impact Report (EIR) prepared for this project. The EIR, as currently drafted, does not sufficiently or accurately assess the environmental, ecological, and community impacts that this long-term operation will have on the San Joaquin River and surrounding areas.

Comment 168-1

As someone with experience in outdoor recreation and knowledge of this area, I find that the EIR fails to adequately address the following concerns:

Comment 168-2

1. Impacts on wildlife habitat, water quality, air pollution, noise pollution, groundwater depletion, cumulative environmental impacts, or community health.

A project of this scale and duration requires a far more comprehensive environmental review that includes thorough scientific analysis, long-term cumulative impact assessments, and meaningful mitigation strategies. The EIR, as it stands, does not meet these standards, and I urge Fresno County to require revisions that fully account for the long-term consequences of extending CEMEX's mining operations.

Comment 168-3

I request that the Planning Department reconsider this permit in light of the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.

Thank you for your time and consideration.

Sincerely,

Judith Looby
judylooby@gmail.com

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Judith Looby
34650 Douglas Ranger Station Rd.
North Fork, CA 93643

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Ms. Looby

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From:	Ron Martin
To:	Randall , David A.
Subject:	Noxious gasses set for inadequate remediation close to the San Joaquin River—to be verified by Imperial County inspectors
Date:	Friday, February 28, 2025 11:02:40 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

There is a problem with the DEIR for the CEMEX rockfield expansion permit. Section Impact 4.3-4, Asphalt Plant Emission Controls, is identified as a Possibly Significant problem. The mitigation measure proposed is to heat largely the types of asphaltic concrete that release the least noxious organic compounds. Also when more volatile organic (VOCs) are heated, the VOCs are to be piped back to the burner in the plant, and before the plant is operational, Imperial County building inspectors would be brought in to verify the piping. Comment 169-1

Why would inspectors be brought from four hundred miles away to inspect a plant in Fresno County? Are Imperial County Inspectors inspectors more competent for some reason than our Fresno County inspectors? This is not explained. Transporting and housing these distant inspectors, from Imperial County, will incur extra travel and lodging expenses, which should be borne by CEMEX.

Another possibility is that this DEIR is not designed for the San Joaquin River, but is a recycled report for a project near the Mexican border. Perhaps this report is not fully an examination of Fresno County's northern border's environment.

Seeking to usually make lower-VOC asphaltic concrete is only a partial mitigation. Piping of noxious gasses cannot be expected to seal perfectly. If we consider the nearby housing developments, with more to be built in the future, the gasses will degrade more health of Fresno County residents than ever. Comment 169-2

Even if this DEIR is applied to our county, with its weak mitigation measures, it is best that this river gravel and asphalt operation be wound down now. If the corporation chooses, it would be best to set up their operations far from the river. Comment 169-3

Ron Martin
(559) 222-5524 - landline; (559) 390-1338 - mobile

From: Neil Thompson
To: Randall , David A.
Subject: CEMEX Rockfield Quarry Modification Project EIR 7763
Date: Friday, February 28, 2025 11:18:00 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

The traffic Mitigation Measures that pertain to signalization and/or intersection improvements are very broad and lack specificity as to who, what, when and how the implementation of the Mitigation Measure will be monitored. This information is important because many of these mitigating improvements may not be triggered until sometime in the distant future well after the current cast of characters have moved on.

Comment 170-1

Some of the questions that need to be addressed are:

Comment 170-2

Mitigation measure 4.17-1a: Equitable Share Contribution – Friant Road and Willow Avenue Traffic Signal.

This Mitigation is not expected to be warranted until the project is producing 3.0 MT/year – projected to be 10 years from approval or possibly far beyond.

<!--[if !supportLists]-->o <!--[endif]-->The project should contribute its fair share over the 10 years preceding the signalization.

<!--[if !supportLists]-->▪ <!--[endif]-->What is the calculation?

<!--[if !supportLists]-->▪ <!--[endif]-->Who runs the calculation?

<!--[if !supportLists]-->▪ <!--[endif]-->When is the calculation run?

<!--[if !supportLists]-->▪ <!--[endif]-->What percentage share does the project carry?

<!--[if !supportLists]-->▪ <!--[endif]-->Who determines what is an equitable share. How is it spread?

<!--[if !supportLists]-->▪ <!--[endif]-->When are the contributions made? When do they start?

<!--[if !supportLists]-->▪ <!--[endif]-->Are the contributions in advance? In arrears?

<!--[if !supportLists]-->▪ <!--[endif]-->Are they made annually? Monthly?

<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these calculations are run?

<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these contributions are made?

<!--[if !supportLists]-->▪ <!--[endif]-->What transparency is there on this process until the signalization is complete?

Mitigation Measure 4.17-1c Friant Road and Willow Avenue signalization

Comment 170-3

<!--[if !supportLists]-->υ <!--[endif]-->The project should contribute its fair share over the 5 years preceding the signal installation.
<!--[if !supportLists]-->▪ <!--[endif]-->What is the calculation formula to establish required contributions?
<!--[if !supportLists]-->▪ <!--[endif]-->Who runs the calculation?
<!--[if !supportLists]-->▪ <!--[endif]-->When is the calculation run?
<!--[if !supportLists]-->▪ <!--[endif]-->What percentage share does the project carry?
<!--[if !supportLists]-->▪ <!--[endif]-->Who determines what is an equitable share. How is it spread?
<!--[if !supportLists]-->▪ <!--[endif]-->When are the contributions made? When do they start?
<!--[if !supportLists]-->▪ <!--[endif]-->Are the contributions in advance? In arrears?
<!--[if !supportLists]-->▪ <!--[endif]-->Are they made annually? Monthly?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these calculations are run?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these contributions are made?
<!--[if !supportLists]-->▪ <!--[endif]-->What transparency is there on this process until the signalization is complete?

Comment 170-3 Cont.

Mitigation Measure 4.17-1d Copper Avenue and Willow Avenue signalization

Comment 170-4

<!--[if !supportLists]-->• <!--[endif]-->The signal has been installed and is operational.
<!--[if !supportLists]-->• <!--[endif]-->Will this project be required to reimburse other developments for its equitable share of the signalization?

Mitigation Measure 4.17-1e Widening of SR 41 and Road 145 Intersection.

Comment 170-5

<!--[if !supportLists]-->υ <!--[endif]-->The project should contribute its fair share over the 15 years preceding the road widening.
<!--[if !supportLists]-->▪ <!--[endif]-->What is the calculation formula to establish required contributions?
<!--[if !supportLists]-->▪ <!--[endif]-->Who runs the calculation?
<!--[if !supportLists]-->▪ <!--[endif]-->When is the calculation run?
<!--[if !supportLists]-->▪ <!--[endif]-->What percentage share does the project carry?
<!--[if !supportLists]-->▪ <!--[endif]-->Who determines what is an equitable share. How is it spread?
<!--[if !supportLists]-->▪ <!--[endif]-->When are the contributions made? When do they start?
<!--[if !supportLists]-->▪ <!--[endif]-->Are the contributions in advance? In arrears?
<!--[if !supportLists]-->▪ <!--[endif]-->Are they made annually? Monthly?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these calculations are run?

<!--[if !supportLists]-->υ <!--[endif]-->Who monitors when each of these contributions are made?
<!--[if !supportLists]-->▪ <!--[endif]-->What transparency is there on this process until the intersection widening is complete?

Comment 170-5 Cont.

Mitigation Measure 4.17-1f Road 206 and Road 145 Intersection Improvements

Comment 170-6

<!--[if !supportLists]-->o <!--[endif]-->The project should contribute its fair share over the 15 years preceding the intersection improvements.
<!--[if !supportLists]-->▪ <!--[endif]-->What is the calculation formula to establish required contributions?
<!--[if !supportLists]-->▪ <!--[endif]-->Who runs the calculation?
<!--[if !supportLists]-->▪ <!--[endif]-->When is the calculation run?
<!--[if !supportLists]-->▪ <!--[endif]-->What percentage share does the project carry?
<!--[if !supportLists]-->▪ <!--[endif]-->Who determines what is an equitable share. How is it spread?
<!--[if !supportLists]-->▪ <!--[endif]-->When are the contributions made? When do they start?
<!--[if !supportLists]-->▪ <!--[endif]-->Are the contributions in advance? In arrears?
<!--[if !supportLists]-->▪ <!--[endif]-->Are they made annually? Monthly?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these calculations are run?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these contributions are made?
<!--[if !supportLists]-->▪ <!--[endif]-->What transparency is there on this process until the intersection improvements are complete?

Mitigation Measure 4.17-1g Friant Road and North Fork Road Intersection Improvements

Comment 170-7

<!--[if !supportLists]-->υ <!--[endif]-->The project should contribute its fair share over the 15 years preceding the intersection improvements.
<!--[if !supportLists]-->▪ <!--[endif]-->What is the calculation formula to establish required contributions?
<!--[if !supportLists]-->▪ <!--[endif]-->Who runs the calculation?
<!--[if !supportLists]-->▪ <!--[endif]-->When is the calculation run?
<!--[if !supportLists]-->▪ <!--[endif]-->What percentage share does the project carry?
<!--[if !supportLists]-->▪ <!--[endif]-->Who determines what is an equitable share. How is it spread?
<!--[if !supportLists]-->▪ <!--[endif]-->When are the contributions made? When do they start?
<!--[if !supportLists]-->▪ <!--[endif]-->Are the contributions in advance? In arrears?
<!--[if !supportLists]-->▪ <!--[endif]-->Are they made annually? Monthly?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these

calculations are run?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these contributions are made?
▪ <!--[endif]-->What transparency is there on this process until the intersection improvements are complete?

Comment 170-7 Cont.

Mitigation Measure 4.17-1h Friant Road and Quarry Site Access Intersection Improvements

Comment 170-8

<!--[if !supportLists]-->o <!--[endif]-->The project should contribute its 100% share over the 15 years preceding the intersection improvements.
<!--[if !supportLists]-->o <!--[endif]-->Why is this an Equitable Share Improvement? Without the Quarry operation there would not be a requirement for intersection improvements. The project should pay 100% of the required improvement and signalization costs.

<!--[if !supportLists]-->o <!--[endif]-->Who will perform the annual traffic warrant analyses? Who will review and verify the results of the analyses? Who will monitor the County Annual Mine Inspections for annual production?
<!--[if !supportLists]-->▪ <!--[endif]-->When is the contribution to be made? When do they start?
<!--[if !supportLists]-->▪ <!--[endif]-->Are the contributions in advance? In arrears?
<!--[if !supportLists]-->▪ <!--[endif]-->Are they made annually? Monthly?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these warrant calculations are run?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these contributions are made?
<!--[if !supportLists]-->▪ <!--[endif]-->What transparency is there on this process until the intersection improvements are complete?

Mitigation Measure 4.17-1i Friant Road and Plant Site Access Intersection Improvements

Comment 170-9

<!--[if !supportLists]-->υ <!--[endif]-->The project should contribute its 100% share over the 15 years preceding the intersection improvements.
<!--[if !supportLists]-->υ <!--[endif]-->Why is this an Equitable Share Improvement? Without the Plant Site operation there would not be a requirement for intersection improvements. The project should pay for 100% of the required improvements and signalization.

<!--[if !supportLists]-->υ <!--[endif]-->Who will perform the annual traffic warrant analyses? Who will review and verify the results of the analyses? Who will monitor the County Annual Mine Inspections for annual production?
<!--[if !supportLists]-->▪ <!--[endif]-->When is the contribution to be made? When do they start?

<!--[if !supportLists]-->▪ <!--[endif]-->Are the contributions in advance? In arrears?
<!--[if !supportLists]-->▪ <!--[endif]-->Are they made annually? Monthly?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these warrant calculations are run?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these contributions are made?
<!--[if !supportLists]-->▪ <!--[endif]-->What transparency is there on this process until the intersection improvements are complete?

Comment 170-9 Cont.

Mitigation Measure 4.17-1j Friant Road and Willow Avenue Intersection Improvements

Comment 170-10

<!--[if !supportLists]-->o <!--[endif]-->The project should contribute its fair share over the 15 years preceding the signal installation.
<!--[if !supportLists]-->▪ <!--[endif]-->What is the calculation formula to establish required contributions?
<!--[if !supportLists]-->▪ <!--[endif]-->Who runs the calculation?
<!--[if !supportLists]-->▪ <!--[endif]-->When is the calculation run?
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<!--[if !supportLists]-->▪ <!--[endif]-->What transparency is there on this process until the signalization is complete?

Mitigation Measure 4.17-1k Copper Avenue and Willow Avenue signalization

Comment 170-11

<!--[if !supportLists]-->• <!--[endif]-->The signal and road widening has been installed and is operational. Will this project be required to reimburse other developments for its equitable share of the signalization?

Mitigation Measure 4.17-1l Widening of SR 41 and Road 145 Intersection.

Comment 170-12

(This mitigation measure is essentially identical to MM 4.17-1e, as the year 2040 may occur before 15 years have passed since project approval.)

<!--[if !supportLists]-->• <!--[endif]-->The project should contribute its fair share over the 15 years preceding the road widening.
<!--[if !supportLists]-->• <!--[endif]-->What is the calculation formula to

establish required contributions?

Comment 170-12 Cont.

<!--[if !supportLists]-->• <!--[endif]-->Who runs the calculation?
<!--[if !supportLists]-->• <!--[endif]-->When is the calculation run?
<!--[if !supportLists]-->• <!--[endif]-->What percentage share does the project carry?
<!--[if !supportLists]-->• <!--[endif]-->Who determines what is an equitable share. How is it spread?
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<!--[if !supportLists]-->• <!--[endif]-->Who monitors when each of these calculations are run?
<!--[if !supportLists]-->• <!--[endif]-->Who monitors when each of these contributions are made?
<!--[if !supportLists]-->• <!--[endif]-->What transparency is there on this process until the intersection widening is complete?

Mitigation Measure 4.17-1m Road 206 and Road 145 Intersection Improvements

Comment 170-13

(This mitigation measure is essentially identical to MM 4.17-1f, as the year 2040 may occur before 15 years have passed since project approval.)

<!--[if !supportLists]-->υ <!--[endif]-->The project should contribute its fair share over the 15 years preceding the intersection improvements.
<!--[if !supportLists]-->▪ <!--[endif]-->What is the calculation formula to establish required contributions?
<!--[if !supportLists]-->▪ <!--[endif]-->Who runs the calculation?
<!--[if !supportLists]-->▪ <!--[endif]-->When is the calculation run?
<!--[if !supportLists]-->▪ <!--[endif]-->What percentage share does the project carry?
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<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these contributions are made?
<!--[if !supportLists]-->▪ <!--[endif]-->What transparency is there on this process until the intersection improvements are complete?

Mitigation Measure 4.17-1n Friant Road and North Fork Road Intersection Improvements

Comment 170-14

(This mitigation measure is essentially identical to MM 4.17-1g, as the year 2040 may occur before 15 years have passed since project approval.)

Comment 170-14 Cont.

<!--[if !supportLists]-->o <!--[endif]-->The project should contribute its fair share over the 15 years preceding the intersection improvements.
<!--[if !supportLists]-->▪ <!--[endif]-->What is the calculation formula to establish required contributions?
<!--[if !supportLists]-->▪ <!--[endif]-->Who runs the calculation?
<!--[if !supportLists]-->▪ <!--[endif]-->When is the calculation run?
<!--[if !supportLists]-->▪ <!--[endif]-->What percentage share does the project carry?
<!--[if !supportLists]-->▪ <!--[endif]-->Who determines what is an equitable share. How is it spread?
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<!--[if !supportLists]-->▪ <!--[endif]-->Are the contributions in advance? In arrears?
<!--[if !supportLists]-->▪ <!--[endif]-->Are they made annually? Monthly?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these calculations are run?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these contributions are made?
<!--[if !supportLists]-->▪ <!--[endif]-->What transparency is there on this process until the intersection improvements are complete?

Mitigation Measure 4.17-1o Friant Road and Quarry Site Access Intersection Improvements

Comment 170-15

(This mitigation measure is essentially identical to MM 4.17-1h, as the year 2040 may occur before 15 years have passed since project approval.)

<!--[if !supportLists]-->υ <!--[endif]-->The project should contribute its 100% share over the 15 years preceding the intersection improvements.
<!--[if !supportLists]-->υ <!--[endif]-->Why is this an Equitable Share Improvement? Without the Quarry operation there would not be a requirement for intersection improvements. The project should pay for 100% of the required improvement and signalization.

<!--[if !supportLists]-->υ <!--[endif]-->Who will perform the annual traffic warrant analyses? Who will review and verify the results of the analyses? Who will monitor the County Annual Mine Inspections for annual production?
<!--[if !supportLists]-->▪ <!--[endif]-->When is the contribution to be made? When do they start?
<!--[if !supportLists]-->▪ <!--[endif]-->Are the contributions in advance? In arrears?
<!--[if !supportLists]-->▪ <!--[endif]-->Are they made annually? Monthly?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these warrant calculations are run?

<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these contributions are made?
<!--[if !supportLists]-->▪ <!--[endif]-->What transparency is there on this process until the intersection improvements are complete?

Comment 170-15 Cont.

Mitigation Measure 4.17-1p Friant Road and Plant Site Access Intersection Improvements

Comment 170-16

(This mitigation measure is essentially identical to MM 4.17-1i, as the year 2040 may occur before 15 years have passed since project approval.)

<!--[if !supportLists]-->o <!--[endif]-->The project should contribute its 100% share over the 15 years preceding the intersection improvements.
<!--[if !supportLists]-->o <!--[endif]-->Why is this an Equitable Share Improvement? Without the Plant Site operation there would not be a requirement for intersection improvements. The project should pay for 100% of the required improvements and signalization.
<!--[if !supportLists]-->o <!--[endif]-->Who will perform the annual traffic warrant analyses? Who will review and verify the results of the analyses? Who will monitor the County Annual Mine Inspections for annual production?
<!--[if !supportLists]-->▪ <!--[endif]-->When is the contribution to be made? When do they start?
<!--[if !supportLists]-->▪ <!--[endif]-->Are the contributions in advance? In arrears?
<!--[if !supportLists]-->▪ <!--[endif]-->Are they made annually? Monthly?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these warrant calculations are run?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these contributions are made?
▪ <!--[endif]-->What transparency is there on this process until the intersection improvements are complete?

Mitigation Measure 4.17-1q Friant Road and Willow Avenue Intersection Improvements

Comment 170-17

(This mitigation measure is essentially identical to MM 4.17-1j, as the year 2040 may occur before 15 years have passed since project approval.)

<!--[if !supportLists]-->υ <!--[endif]-->The project should contribute its 100% share over the 15 years preceding the intersection improvements.
<!--[if !supportLists]-->υ <!--[endif]-->The project should contribute its fair share over the 15 years preceding the signal installation.
<!--[if !supportLists]-->▪ <!--[endif]-->What is the calculation formula to establish required contributions?
<!--[if !supportLists]-->▪ <!--[endif]-->Who runs the calculation?
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<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these calculations are run?
<!--[if !supportLists]-->▪ <!--[endif]-->Who monitors when each of these contributions are made?
<!--[if !supportLists]-->▪ <!--[endif]-->What transparency is there on this process until the signalization is complete?

Comment 170-17 Cont.

Mitigation Measure 4.17-1r Copper Avenue and Willow Avenue signalization

Comment 170-18

(This mitigation measure is essentially identical to MM 4.17-1k, as the year 2040 may occur before 15 years have passed since project approval.)

<!--[if !supportLists]-->• <!--[endif]-->The signal and intersection widening has been installed and is operational. Will this project be required to reimburse other developments for its equitable share of the signalization?

Please rewrite these Mitigation Measures with sufficient detail such that each of the parties (Applicant, County, Public, etc.) will know who is responsible for what at least 15 or more years from Approval.

Comment 170-19

Thank you for your consideration.

Neil Thompson
514 E. Cole Ave.
Fresno, CA 93720
nsthompson@aol.com
(559) 977-3339

From:	Neil Thompson
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR 7763
Date:	Friday, February 28, 2025 12:03:53 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Mitigation Measure 4.7-6 Regarding Plant Site Slope monitoring includes at least two open ended questions: Comment 171-1

- The measure calls for a periodic inspection to be performed. The inspection and reporting program to be established by a County-approved engineering geologist or geotechnical engineer should specify a maximum period of time between inspections.
- It should be clear that the Operator shall pay for all inspections including County review costs. Comment 171-2
- The "if feasible " caveat regarding recommended implementations should be defined. Who will determine if it is feasible? The Operator? The Engineer? The County? Can safety be disregarded? Comment 171-3

Thank you for your consideration.

Neil Thompson
514 E. Cole Ave.
Fresno, CA 93720
nsthompson@aol.com
(559) 977-3339

From:	Neil Thompson
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR 7763
Date:	Friday, February 28, 2025 12:48:08 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Mitigation Measure 4.7-7a Regarding Quarry Site Slope monitoring includes at least two open ended questions: Comment 172-1

- The measure calls for a periodic inspection to be performed. The inspection and reporting program to be established by a County-approved engineering geologist or geotechnical engineer should specify a maximum period of time between inspections.
- It should be clear that the Operator shall pay for all inspections including County review costs. Comment 172-2
- The "if feasible " caveat regarding recommended implementations should be defined. Who will determine if it is feasible? The Operator? The Engineer? The County? Can safety be disregarded? Comment 172-3

Mitigation Measure 4.7-7b Regarding Quarry Site Kinematic Analyses has at least one open ended questions Comment 172-4

- The "if feasible " caveat regarding recommended implementations should be defined. Who will determine if it is feasible? The Operator? The Engineer? The County? Can safety be disregarded?
- It should be clear that the Operator shall pay for all inspections including County review costs. Comment 172-5

Thank you for your consideration.

Neil Thompson
514 E. Cole Ave.
Fresno, CA 93720
nsthompson@aol.com
(559) 977-3339

From:	Neil Thompson
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR 7763
Date:	Friday, February 28, 2025 1:40:17 PM

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Report Suspicious

Dear Mr. Randall,

Comment 173-1

Mitigation Measure 4.10-5a Plant Site Pond Adaptive Management Program anticipates that, at the completion of the mining and reclamation work, testing will be required for at least 5 years and that remediation work may be required to obtain required water quality standards.

Mitigation Measure 4.10-5b requires that a funding mechanism be established to provide funds to pay for the work required in MM 4.10-5a although no specifics are given regarding this mechanism.

- What would happen if the Operator ceased operations prior to the allowed limits of excavation? Comment 173-2
- What would happen if reclamation work was not complete? Comment 173-3
- Who would be responsible to satisfy the water quality standards? Comment 173-4

The Funding Mechanism should be established prior to the Approval of the Project and contributions to the fund should start and continue with each truckload of aggregate that is removed from the Plant Site. Comment 173-5

Thank you for your consideration,

Neil Thompson
514 E. Cole Ave.
Fresno, CA 93720
(559) 977-3339
nsthompson@aol.com

From:	Neil Thompson
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR 7763
Date:	Friday, February 28, 2025 1:51:50 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Comment 174-1

Mitigation Measure 4.10-10a Quarry Site Groundwater Adaptive Management Program anticipates that, at the completion of the mining, testing will be required for at least 5 years and that remediation work may be required to obtain required water quality standards.

Mitigation Measure 4.10-10b requires that a funding mechanism be established to provide funds to pay for the work required in MM 4.10-10a although no specifics are given regarding this mechanism.

- What would happen if the Operator ceased operations prior to the allowed limits of excavation?
- What would happen if remediation work was not complete?
- Who would be responsible to satisfy the water quality standards?

The Funding Mechanism should be established prior to the Approval of the Project and contributions to the fund should start and continue with each truckload of aggregate that is removed from the Quarry Site.

Thank you for your consideration,

Neil Thompson
514 E. Cole Ave.
Fresno, CA 93720
(559) 977-3339
nsthompson@aol.com

From:	Neil Thompson
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR 7763
Date:	Friday, February 28, 2025 2:14:24 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am confused by Impacts 4.10-11 and 4.11-12 regarding the impacts to existing groundwater elevations and supplies at the Quarry Site. Both Impacts are listed as Less than Significant although MM 4.11-12 is LTS with implementation of MM 10.10-5a and 10.10-5b.

Comment 175-1

How can that be if the residual water elevation in the Quarry at completion is at -190' BSL as shown on Figure 2-10. That 190' plus 330' equals 520' below the nominal Quarry Site elevation of 330' ASL. Either the Impacts as specified are incorrect or the residual water elevation on Figure 2-10 will ultimately be much higher.

Thank you for your consideration.

Neil Thompson
514 E. Cole Ave.
Fresno, CA 93720
nsthompson@aol.com
(559) 977-3339

From:	Brian Agbayani
To:	Randall , David A.
Subject:	CEMEX Rockfield Espansion Project - Comments on DEIR
Date:	Saturday, March 1, 2025 7:23:04 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 1, 2025

David Randall, Senior Planner
County of Fresno
Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear Mr. Randall,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have a particular concern since I live in the Tesoro Viejo community just a few miles from the Cemex plant, literally on the other side of the hill. Though we are not residents of Fresno County, many of the residents in Tesoro Viejo work and shop in nearby Fresno. The residents in the Tesoro Viejo community area would almost certainly be detrimentally affected by the proposed mining activities, including the proposed daily blasting, as well as all of the other environmental impacts that have been identified with this project. The DEIR barely mentions any potential impact on area residents, even though our community is literally around the corner.

Comment 176-1

Given the potential impacts on the residents near the Cemex mine, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives.

Comment 176-2

Sincerely,
Brian Agbayani
Tesoro Viejo Resident

Michelle Harris
4183 Sweet Lane
Sanger, CA 93657
redmichelle48@gmail.com
559.676.1700
03/01/2025

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report

Dear Mr. Randall,

I am writing to express my concern that the EIR for the 100-year permit for the CEMEX mining operation, as currently drafted, does not sufficiently or accurately assess the environmental, ecological, and community impacts that this long-term operation will have on the San Joaquin River and surrounding areas. Comment 177-1

I'm a staff wildlife biologist with Colibri Ecological Consulting and involved in tricolored blackbird monitoring in the Central Valley, and I find that the EIR fails to adequately address the following concerns:

1. Potential habitat destruction for endangered tricolored blackbirds and other wetland species.
2. Impacts to the San Joaquin River, including water quality and groundwater depletion.
3. Whether expansion is necessary or if we as a society can learn to consume and build less.

Comment(s) 177-2 177-3 177-4

A project of this scale and duration requires a far more comprehensive environmental review that includes thorough scientific analysis, long-term cumulative impact assessments, and meaningful mitigation strategies. The EIR, as it stands, does not meet these standards, and I urge Fresno County to require revisions that fully account for the long-term consequences of extending CEMEX's mining operations. Comment 177-5

I request that the Planning Department reconsider this permit and demand a more thorough environmental review before any decisions are made.

Thank you for your time and consideration.

Sincerely,
Michelle Harris

Alice J. Pierson-Knapp
2208 E. Emilie Avenue
Fresno, Ca 93730
559-312-5549
Ark4021@gmail.com

March 1, 2025

David Randall, Senior Planner
Fresno County Public Works & Planning Department Development Services & Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

RE: The CEMEX Rockfield Project/San Joaquin River Parkway

Dear Mr. Randall.

Comment 178-1

My husband and I have been members of the San Joaquin River Parkway for many years and have enjoyed wonderful experiences along the San Joaquin River and the adjoining parkway. We live in the area and have a personal interest in maintaining the integrity of the Parkway. The SJRP is committed to "PRESERVING & RESTORING San Joaquin River lands of ecological, scenic or historic significance, to EDUCATE the public on the need for STEWARDSHIP, to RESEARCH issues affecting the river, and to promote educational, recreational and agricultural uses of the river bottom consistent with the PROTECTION OF THE RIVER'S RESOURCES."

It has come to our attention that Cemex Construction Materials is proposing an expansion of its operations near the San Joaquin River. They are requesting an extension of mining for 100 years, changing the technique from mechanical digging of sand and gravel to blasting hard rock and crushing it into gravel, and increasing the depth of the mine to 600 feet below ground surface. These requests are obviously

extreme and without evidence of the effect that will manifest in the 100-year future.

Comment 178-1 Cont.

Recently we were introduced to the CEMEX Rockfield Draft EIR (Environmental Impact Report). According to professional analysis, this report falls way short of being accurate. The consideration of wildlife, pit depth and its geologic ramifications, noise, traffic, pollution, cultural historic context, and safety issues are not addressed adequately, to mention a few. This report needs careful consideration with all parties well informed so that the best decisions are made.

Comment 178-2

The idea that you would grant 100 years of mining to this business is unconscionable. A decision affecting generations to come when no one knows what this kind of mining will do to the environment! Please explain why 100 years is even being considered.

Comment 178-3

The surrounding area around CEMEX is land devoted to stewardship and recreation. The CEMEX proposal is the exact opposite.

Comment 178-4

None of us are opposed to sand and gravel operations if they are situated in the right location. I cannot imagine a more wrong location for an operation of this nature that reflects so negatively on the San Joaquin River and the surrounding area, if approved.

Comment 178-5

Thank you for the opportunity to comment and we trust that this ill-founded proposal will be denied.

Sincerely,
Alice & Robert Knapp

From: Leo & Carol
To: Randall , David A.
Subject: Stop CEMEX
Date: Saturday, March 1, 2025 9:52:13 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX Rockfield Quarry EIR 7763 Proposal and the Future of the San Joaquin River

Dear David Randall,

March 1, 2025

The more that I review the EIR the more frustrated that I become that this type of project would even be considered in our backyard!

Comment 179-1

CEMEX has already destroyed the wonderful landscape from Friant Road and minimized access to the San Joaquin River for the citizens of Fresno County. Now they want to start blasting and drilling to ungodly depths of 600 feet right near the river for the next 100 years!

What could possibly go wrong? We are already cursed with air and water pollution and now they want to increase noise, dust, shock and vibration that will make us feel as though we are in a combat area. We will add to the pollution of water, air and increased traffic which will cause more chaos, as these huge trucks enter and exit Friant Road!

Comment 179-2

Comment 179-3

All of this increased pollution will have a tremendous impact on all forms of life.

Comment 179-4

A relevant anecdote; a few days ago a neighbor cut down a tree that was leaning on a fence. We noticed that the squirrels and birds were going crazy dashing around looking for their home and the next day they were gone. Some like CEMEX might call this progress! We call it destruction!

Cemex has the audacity to use terms like: Comment 179-5

LTS = Less than Significant; PS = Potentially Significant; S = Significant; SU = Significant and Unavoidable

Oh and they use the initials NI which is not defined but I can only assume to mean No Impact or Not Important.

I have to ask who made them so authoritarian!

First of all, the area would not be so unpleasant if they were never here. This probably would be a community park giving access to the public to enjoy the great outdoors. Something we are lacking in our county! Comment 179-6

Or maybe remained as farmland where the owner lived in harmony with nature.

Who set the standard for LTS? There is no measurement that defines the level of significance and the threshold for the issue to become significant! My favorite is SU which equals "Significant and Unavoidable". I would argue that it is totally avoidable if they were to leave the area and return it to its natural state. Comment 179-7

Oh but they can't as they have already stripped the land barren removing all of the topsoil and leaving us with a dust factory!

Many of the impact statements are listed as Potentially Significant with mitigation occurring during the implementation phase, so our great-grandchildren may see the results in 100 years! What a travesty! Comment 179-8

The word blasting appears 317 times in the EIR Summary. The following is an excerpt from the EIR Comment 179-9

"However, the proposed project would introduce blasting to the Quarry Site. Blasting generates groundborne noise and vibration that could impact fish in the San Joaquin River."

They go on to refer to an Alaska Department of Fish and Game comment that showed no impact to the Salmon in that study. Yet they provide no details on the conditions and use of the explosives. Were they blasting 200 feet from the river to depths of 600 feet? I would suggest that Fresno County and California Fish and Game provide their own study. Comment 179-10

The EIR does state that the noise level would exceed the limit of 85 dB with blasting level of 140 dB which is the threshold for pain! I'm sure that they will protect their workers, but what will that do to all of the wildlife in the area and the surrounding neighborhoods who are trying to enjoy a peaceful afternoon outside. Will it cause damage to nearby homes, or maybe weaken the nearby Millerton Dam.

Comment 179-11

We moved to Fresno 28 years ago because it was a great place to live; it offered great scenery, access to the mountains in a pleasant surroundings. Please don't let a Foreign LLC like CEMEX spoil it for profit!

Comment 179-12

The community needs support from our County officials.

Carol Labbe

559 349-1369

From:	Debbie Dotson
To:	Randall , David A.
Subject:	Opposed to CEMEX DEIR
Date:	Sunday, March 2, 2025 11:25:41 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 180-1

Hello - as long time residents of Fresno (26 years in this location) - specifically near the intersection of Friant and Fort Washington, we are vehemently opposed to any further activity by CEMEX.

Between the noise, the dust, the traffic, and disturbances caused by the large trucks rumbling up and down Friant, we can't believe that our Fresno legislators would even consider any request from CEMEX to blast a giant hole in their location beyond what they have now and increase their activity. We should be considering closing them down, not providing them a reason to stay and grow.

Please vote NO to stop this travesty.

Sincerely,
William A. and Deborah Dotson
492 E Hillcrest Ave, Fresno, CA 93720
559.349.3305

CEMEX Rockfield DEIR comments

2 March 2025

The DEIR says that "Best Practices" for the control and mitigation of fly rock from rock blasting and the mitigation of groundwater and surface water contamination from the use of explosive products are in place. What are these best practices that are mentioned? There is no explanation of the methods or manners of these “best practices”.

Comment 181-1

What are the specific blasting protocols that will be used to prevent the contamination of groundwater and surface water because of blasting? It mentions explosive products but not what they are. Each type of explosive product will produce its own type of contaminants for ground and surface water. What are the actual explosive products that will be used? What are the byproducts of the explosion that will contaminate the ground water and surface water? How will the contaminant levels be monitored and by whom? What is the plan to mitigate the contamination of the water table and surface waters? What health concerns can be caused by the contaminants left if the water?

Comment 181-2

Blasting agents need to be identified in this DEIR. “The use of blasting agents has the potential to contaminate groundwater with nitrates and other chemicals, such as petroleum hydrocarbons, if not managed properly.” This is a nonresponse as to what the blasting agents will be. The DEIR states that dynamite will not be used. What will be used to do the blasting? Virtually any blasting agent will produce nitrates and other chemicals. Nitrate and nitrite water contamination are major health issues with drinking water. How will this be minimized or avoided completely? The mention of soil type for the effects of the blasting agents will be hard rock granite. Are there any datasets of tests with this DEIR for that type of rock which is found in the quarry site.

According to the DEIR “Studies have concluded that there are no significant long-term chemical or mineralogical changes observed in groundwater that could be attributed to blasting.” Where are the results of those studies? Is this data described in one of the many tables included in the DEIR. “In one study, water samples were taken in the same hole that explosives were detonated in, and no change in water quality due to the decomposition products of the explosives could be discerned from the analysis.” Not possible for the water to be unchanged. Is there evidence of the water samples before and after the detonation? Statements need to be supported by data. Were there other impacts on the water quality due to products other than “decomposition products”? This statement in the DEIR may not be completely accurate or transparent.

Comment 181-3

This DEIR indicated that “Ground vibration at the closest residential/commercial structures, the closest wells, and at several locations along the crest of the East side of San Joaquin River embankment is (are) monitored with digital seismographs.”

Comment 181-4

What were the results for the East side of the San Joaquin River embankment? Where is the data for ground vibration and an explanation of those results? This is a critical area of concern in this DEIR for the quarry site. A breech in the embankment or subsurface flow between the San Joaquin River and the quarry pit would be catastrophic. Where are the results of this monitoring? Where were the seismographs situated? When was this done? Which residential/commercial structures were monitored? Is there a map with these locations marked. Are the results of the monitoring for each site available and explained? There should be data from their study that can be shared with the public. Over what period were these tests run? There is no mention of what type of vibration was being measured. How was the vibration generated? Was it ground vibration from blasting, using similar charges that would be detonated in the quarry? Was it monitoring ground vibration from natural ground movement? This is not clearly stated what was being measured and how it was being measured with the seismographs. This nonspecific description leaves many questions unanswered.

The DEIR states “The data is closely analyzed and logged into a spreadsheet program to track the readings and to build a dataset that can be used to further track the frequency of the vibration time histories, predict the vibration levels, and make adjustments to the blast plan as blasting progresses.” That is a horribly long run on sentence! There are no mentions of how any of the data will be utilized. How will it be analyzed? How will tracking the “readings frequencies of vibration” be used to predict vibration levels and allow for the blast plan to be adjusted? What criteria from the vibration data would be used to adjust the blasting plan? Logging data with no explanation of how it will be analyzed and used does not explain the purpose of this vibration monitoring.

Comment 181-4 Cont.

Air Pollution is a concern in the San Joaquin Valley and even more so in the area around the Plant site and Quarry site. The geography of this localized area in a trough with elevated hills on both sides that produce an elongated bowl. Fog settles in this area in the winter and dust and other particulate accumulate there as well. Potential emissions for the project include ROG, NOx, CO, SOx, PM10, and PM2.5. Individually or in combination these can create long-term health effects. It seems that monitoring of these emissions has not been done directly on either site. The data that has been shared in the DEIR may not be accurate. Are there tests that have been performed on the sites that shows these specific emissions and their levels in situ? Were tests run at various times of the year under varying conditions?

Comment 181-5

The effects of the emissions and PM10 and PM2.5 for various sources can have dramatic health on people. The DEIR lists how pollutants can affect health but neglects to indicate what levels of the contaminants will cause adverse effects. Their operations will have a negative impact on the health of the people of Fresno county. The mitigation of PM2.5 does not seem to be adequate and many of the vehicles and the operations of the quarry and plant sites will generate PM2.5. PM2.5 exposure is very dangerous with many negative outcomes. How does the mitigation plan for PM2.5 reduce the risk to people in the area?

Comment 181-6

From: Danielle Grassi
To: Randall , David A.
Subject: CEMEX Rockfield Expansion Project
Date: Sunday, March 2, 2025 11:28:25 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 182-1

I am writing to express my concern about the Rockfield Expansion Project. Particularly the idea of blasting the hard rock and increasing the depth of the mine. The San Joaquin River is one of the few nice areas of wildlife we have to enjoy in Fresno. Mining operations will impact wildlife, air quality, and cause irreversible damage to the watershed. I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

Comment 182-2

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,
Danielle Grassi

From:	Robert Hills
To:	Randall , David A.
Subject:	cemex rockfield mine
Date:	Sunday, March 2, 2025 11:03:50 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 183-1

I do not see in the eir who will be responsible financially for the increased accidents on Friant road. Will Cemex take responsibility, or will the county be responsible. If the traffic on Friant cannot be mitagated because of lack of funds to correct, why would the project be allowed to move forward until the funds are available. The EIR should not be allowed to skirt this issue, nor should the county in good faith condone this issue.

Thank you,
Bob Hills

From: Robert Hills
To: Randall , David A.
Subject: cemex rockfield mine
Date: Sunday, March 2, 2025 9:13:00 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 184-1

In the EIR they allude to the fact that they are already tearing up the environment, so it somehow justifies continuing to do so. How does this pass the smell test. How can Cemex justify this. They should be made to go back and justify these areas in a direct fashion, or admit that they cannot be mitagated.

From:	Robert Hills
To:	Randall , David A.
Subject:	cemex rockfield mine
Date:	Sunday, March 2, 2025 9:22:37 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 185-1

I am concerned that Cemex is using the bait and switch approach. Attempting to get something outlandish passed (100 years and 600 ft.) and then accepting something less to appear as accepting a compromise. This is not acceptable and should be dismissed for what it is. The integrity of the San Joaquin river is to precious to gamble with its furture.

Thank You,
Bob Hills

From:	Robert Hills
To:	Randall , David A.
Subject:	cemex rockfield mine
Date:	Sunday, March 2, 2025 11:08:17 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

If and when wells run dry in the area, who will be responsible to purchase the properties at fair value sinse their properties will become worthless. Will the county for approving a shady project or will cemex do the right thing.

Comment 186-1

Thank you,
Bob Hills

From:	Robert Hills
To:	Randall , David A.
Subject:	cemex rockfield mine
Date:	Sunday, March 2, 2025 11:25:40 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 187-1

Since this project should have been shut down many times, I do not beleive the job issue should be a consideration. The workers on the site have known for many years that their jobs should be coming to an end. I am sure Cemex will have a nice severence package for the workers. How many years do their jobs have to be guaranteed? They have already been extended many times. This issue should not overshadow the protection of the San Joaqin river, the tranquility of the area and the greater good for the population of Fresno. I do have empathy for the loss of jobs.

Thank you,
Bob Hills

From:	Robert Hills
To:	Randall , David A.
Subject:	cemex rockfield mine
Date:	Sunday, March 2, 2025 11:35:19 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment(s)

Cemex needs to hire an indepent engineering firm to be on site whenever their is activity at the mine. Cemex has been fined for all kinds of violations at many sites. Both ommision and commision. When there is a infraction, the mine needs to be shut down until the issue is remidied and whatever fines necessary are paid. If there is not a remedy, then the project needs to be shut down, and the land be brought back to its natural state. This has been the plans for many years. 188-1 188-2 188-3

Thank you,
Bob Hills

From:	Robert Hills
To:	Randall , David A.
Subject:	cemex rockfield mine
Date:	Sunday, March 2, 2025 11:45:58 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment(s)
189-1
189-2
189-3
189-4

The proposal for the extended land use and the time duration of the project is not realistic. How does cemx propose to protect Lost lake. How does it propose to protect it from noise, air polution, and the protection of the wildlife. Wildlife does not respond well to noise, as well as humans. Cemex proposal to allow a trail to go through their property is not only ludirous but also dangerous. Many other areas have enhanced their proximity to a river for the enjoyment of their citizens. Why would Fresno not want to embrace the river, instead of abusing it.

Thank you,
Bob Hills

From:	Robert Hills
To:	Randall , David A.
Subject:	cemex rockfield mine
Date:	Sunday, March 2, 2025 4:29:29 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I am not aware if the IRA considered anything with the tribal community. I am aware that the tribal community at Table Mountain are trying to get access to the sight. At this time I am told Cemex is not coorperating. If a company cannot be transparent, they can not be trusted. How does Cemex plan to address the issue?

Comment 190-1

Thanks,
Bob Hills

From: Robert Hills
To: Randall , David A.
Subject: cemex rockfield mine
Date: Sunday, March 2, 2025 4:42:31 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

If this project does go through, since Cemex is a LLC, they should have to put up a huge bond. What amount do they propose to put up so the county tax payables are not stuck paying for their folly. It also needs to be tied to inflation, as time passes it will be worthless. It should be reviewed and accessed on a yearly basis. Has Cemex addressed these issues and has it agreed to an realistic bond tied to inflation. Please remember Cemex has had compliance issues in other locations. Actually, their past record alone should negate the county from even considering any agreement, particularly for a 100 years. Do laws in Mexico prohibit this type of mining?

Comment(s) 191-1

Comment(s) 191-2 191-3

Thank you,
Bob Hills

From:	Robert Hills
To:	Randall , David A.
Subject:	cemex rockfield mine
Date:	Sunday, March 2, 2025 5:32:35 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment(s)
192-1
192-2
192-3

I did not see anything to address the large numbers of bike riders on Friant road. I am somewhat disappointed in the vagueness of the EIR considering all the extentsions that they have had. They need to study the consequenses of air quality, noise and safetjy of the bike riders. Will the Cemex trucks just bully themselves into the 2nd lane to avoid the riders who often ride double file. The law says traffic has to stay 4 feet away from the riders. They do not make any exceptions when the bikers are riding double file on the line. This also makes it dangerous for the traffic in the passing lane when the trucks pull over into their lanes. I see it often.

Thanks,
Bob Hills

From:	Robert Hills
To:	Randall , David A.
Subject:	cemex rockfield mine
Date:	Sunday, March 2, 2025 5:39:17 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 193-1

I do not see any remedy for the folks that have their windshieds broken by the gravel left on the road and coming off the trucks. This has been a historical issue with Cemex. With all the cameras and so forth, windshields are $500.00 a pop. Maybe the cars effected could enter Cemex's property and someone cut them a check for $500.00 to remedy the problem Cemex has caused them. Also it is dangerous for bike riders.

Thanks,
Bob Hills

From:	Krystle Hollingsworth
To:	Randall , David A.
Subject:	STOP the proposed Lost Lake blast!
Date:	Sunday, March 2, 2025 8:08:19 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

As a Fresno resident I am concerned about the effect this blast will have on our environment as well as the wildlife in the area. Please STOP the proposed Lost Lake blast.

Comment 194-1

Sincerely,
Krystle Argentino

From:	Ariana Murillo
To:	Randall , David A.
Subject:	CEMEX expansion
Date:	Sunday, March 2, 2025 8:08:00 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good evening Mr. Randall,

Comment 195-1

I hope this finds you well. I am reach outing to you as a concerned citizen and a Native American woman. It has come to my knowledge about the CEMEX expansion that will put in danger wildlife, the river and the surrounding lands. As you may know Fresno County is Yokut land, and the Native American community has always been protectors of this land since for thousands of years the Native population have survived off the land. This land has beautiful history tied to it and therefore I do not want this expansion to happen knowing the dangers it will cost to the wildlife, the land, to the Native American Community, and the Fresno County public.

With best regards,

-Ariana Murillo

From:	Leigh-Ann
To:	Randall , David A.
Subject:	Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Sunday, March 2, 2025 5:50:31 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David,

Thank you for taking comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. As an environmental science teacher in Fresno County and avid user of the San Joaquin River for birding and student opportunities, I wanted to share my concerns about the expansion of the CEMEX mining operation.

Comment 196-1

The river provides several ecosystem services such as aesthetics, habitat for several species, clean water, temperature regulation, stabilization of soil, and a place for people to experience natural spaces close to where they live. Most of our valley is industrialized or agriculturalized. It's hard to find unadulterated natural spaces close by.

I have seen numerous bird species that utilize the river along with river otters, muskrats, several fish species, and many more! These species are so amazing to witness and would be impacted by your proposal.

Mining operations are important for economical reasons and I understand that, however they should be done responsibly so as not to impact those who depend on the ecosystem services provided by this important river. On top of our water resources, air quality can be heavily impacted by the dust and particulates as a result of increased mining. Our air quality has historically been one of the worst but it IS improving! Why should we go backwards? We have high rates of asthma and will still be suffering from the impact of wildfires in California. Do we really want to add to that issue?

Comment 196-2

My students will be doing water quality studies along the river this year and over the next few years. I was hoping to use the San Joaquin as an example of a cleaner river than our closer Kings River so we could compare the two. If this proposal goes through I would hate to have to explain to future students why they may see declining results.

Comment 196-3

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

Comment(s) 196-4 196-5

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,

Leigh-Ann Olsen
AP Science Instructor, Kingsburg High School

From: Denise Taylor
To: Randall , David A.
Subject: Subject: Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report
Date: Sunday, March 2, 2025 4:36:18 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Denise Taylor
4567 N Wilson Ave
Fresno, CA 93704
denise_m_taylor@outlook.com
202-365-4443

March 1, 2025

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Mr. Randall,

I am writing to express my opposition to the proposed 100-year permit for the CEMEX mining operation and to challenge the Draft Environmental Impact Report (EIR) prepared for this project. The EIR, as currently drafted, does not sufficiently or accurately assess the environmental, ecological, and community impacts that this long-term operation will have on the San Joaquin River and surrounding areas. Comment 197-1

As someone familiar with the location, I find that the EIR fails to adequately address the following concerns:

1. The Swanson's hawk has a right to not only exist, but to flourish. With this project the hawk's very existence will be in peril. Its habitat and ability to breed will be significantly impacted by the project's blasting, excavating, and trenching as well as by the use of heavy construction equipment.

2. The serious harm to the Chinook Salmon because of blasting. Comment 197-2

3. Blasting and digging could destabilize the underlying soil and rock layer. Comment 197-3

4. Very little is known of the synergy of living ecological systems. Wildlife and the microbial organisms that support them are at risk of irreparable harm if a 600-foot deep pit is blasted or dug. Comment 197-4

A project of this scale and duration requires a far more comprehensive environmental review that includes thorough scientific analysis, long-term cumulative impact assessments, and meaningful mitigation strategies. The EIR, as it stands, does not Comment 197-5

Comment
197-5 Cont.

meet these standards, and I urge Fresno County to require revisions that fully account for the long-term consequences of extending CEMEX's mining operations. I request that the Planning Department reconsider this permit in light of the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.
Thank you for your time and consideration.
Sincerely,

Denise Taylor

Sent from my iPad

From: Alexis J Torres
To: Randall , David A.
Subject: Cemex Rockfield
Date: Sunday, March 2, 2025 4:41:52 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

To whom this concerns

Fresno has been one of the best places I've ever been to in the US. The land scapping, green trees, and surrounding mountains is what makes Fresno a beautiful place to live in. I've always appreciated how the community's in Fresno love our few and only locations of nature. I asked you to press cancel on this project so we can continue to appreciate the amazing city of Fresno and we can push the agenda of a cleaner city even more now than ever.

Comment 198-1

Sincerely
Alexis Torres
Sent from my iPhone

From:	kerry allred
To:	Randall , David A.
Subject:	Cemex
Date:	Monday, March 3, 2025 7:11:36 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I am writing to express my opposition to the proposal on the expansion of the Cemex open mining on the San Joaquin River. To allow hard rock blasting, or a 600 foot deep pit, or blasting for the next 100 years is absolutely destructive to the environment and will have repercussions far beyond our life term. I strongly urge a NO stance.

Comment 199-1

David Randall, Senior Planner
Fresno County Public Works and Planning Department
2220 Tulare Street, 6th Floor
Fresno, California 93721
Email: drandall@fresnocountyca.gov

Subject: Aesthetic Impacts in Draft Environmental Impact Report for the CEMEX Rockfield Modification Project (EIR 7763)

Dear Mr. Randall,

I am writing to express my deep concerns and strong objection to the findings in the aesthetics section of the Draft Environmental Impact Report (EIR) for the CEMEX Rockfield Modification Project. As a long-time resident of Fresno, I frequently visit Lost Lake Park, and hike in areas surrounding the planned Quarry Site. This project, as currently proposed, will cause irreparable harm to the scenic vistas and visual character of the surrounding area.

Comment 200-1

The Draft EIR states that:

Comment 200-2

- The project will result in a **substantial adverse effect on a scenic vista (Impact 4.1-1)**.
- The project will cause **a substantial degradation of the existing visual character or quality of public views in nonurbanized areas (Impact 4.1-3)**.
- The proposed mitigation, including rock staining, **will not eliminate the discordant and disharmonious visual contrast** caused by the engineered quarry benches.

It is unacceptable that the only proposed solution for mitigating these impacts is to apply a superficial stain to the exposed rock faces. This approach does not meaningfully address the permanent alteration of the landscape and fails to provide an effective or lasting solution to the substantial visual degradation caused by the project.

Furthermore, the proposed trail easement along the San Joaquin River at the Quarry Site raises serious public safety concerns. The Draft EIR does not adequately address the risks posed by the planned trail's proximity to the quarry excavation. The following questions need to be answered before the project can proceed:

Comment 200-3

Safety and Risk Mitigation

1. Will a protective fence or barrier between the trail and the quarry be installed after the quarry is reclaimed? If not, why not?
2. What measures will be taken to prevent trail users from accidentally accessing hazardous areas?
3. Will the trail have warning signs, lighting, or emergency access points to ensure user safety?
4. How will liability be handled if an accident occurs near the quarry?

Trail Design and User Experience

6. Will the trail have any buffer zones, landscaping, or natural barriers to visually separate it from the quarry? If there are buffer zones, how wide will they be?

Comment 200-3 Cont.

7. How will noise and dust from ongoing quarry operations affect trail users? What mitigation measures planned?

Environmental Considerations

Comment 200-4

10. Will trail construction impact local wildlife, and if so, what mitigation measures will be in place?
11. How will stormwater runoff from the trail be managed to prevent erosion near the quarry?
12. Will trail lighting (if any) be designed to minimize disruption to nocturnal wildlife?

Long-Term Maintenance and Responsibility

13. Who will be responsible for maintaining the trail and ensuring it remains safe over time?
14. If the quarry site changes in the future (e.g., deeper excavation, flooding), how will that affect the trail's viability?
15. What plans are in place for the trail's upkeep after the quarry is fully reclaimed?
16. Will CEMEX commit to paying for the above safety and mitigation measures, (#1 – 15 above)? If not, why not?

I also have serious concerns about the environmental impact of the proposed rock staining process. The Draft EIR lacks details about the risks of staining materials to soil and water quality. The following questions need to be addressed:

Comment 200-5

Composition and Environmental Safety of the Stain

17. What specific materials and chemicals are used in the rock staining process?
18. Are the staining chemicals non-toxic, biodegradable, and environmentally approved? What studies, regulatory approvals, or impact assessments confirm their safety?
19. Has the stain been tested for leaching in wet conditions? If so, what specific studies demonstrate the extent of leaching?
20. Does the stain contain heavy metals, volatile organic compounds, or harmful substances? If so, what material safety data sheets, chemical analysis reports, or regulatory reviews confirm the safety of the stain?
21. What published evidence or peer-reviewed research supports the use of rock stains planned for this project?

Soil Testing and Monitoring

22. Will soil samples be tested before and after staining to detect contamination? If so, what testing methodology and standards will be used?

Comment 200-5 Cont.

23. At what distances from the staining area will soil samples be collected, and what scientific basis supports this sampling range?
24. What testing parameters will be used (e.g., pH, metal content, chemical residues), and which regulatory or industry standards will guide these tests?
25. How frequently will soil testing occur, both initially and as part of ongoing monitoring? What are the regulatory requirements or precedent studies upon which this testing frequency is based?

Water Quality Protection

26. Will groundwater wells and surface water sources be tested for staining-related contaminants? If so, what sampling methodology, frequency, and testing parameters will be used, and which environmental standards will be followed?
27. What scientific or engineering measures will be implemented to prevent stain runoff into water sources during rain events? What hydrological studies or best management practices justify these measures?
28. Will a sediment and erosion control plan be implemented? If so, what specific techniques and regulatory guidelines will govern its design and enforcement?
29. What is the response plan if contaminants, including those from staining, are detected in water sources? What enforcement mechanisms ensure compliance and remediation?

Regulatory Compliance and Best Practices

30. What federal, state or local regulations govern the use of rock stains in mining operations? Provide references to specific statutes, environmental codes or agency guidelines apply.
31. Will the project follow best management practices for applying stains in an environmentally responsible manner? What industry standards, case studies or agency-approved guidelines support CEMEX's planned use of rock stains?

Long-Term Environmental Monitoring and Accountability

32. Will there be long-term monitoring of soil and water quality after the staining process is completed? If so, what monitoring duration, testing parameters and regulatory oversight will be in place?
33. Who will be responsible for ongoing monitoring and reporting results? Will independent third-party verification be required? If not, why not?

Comment 200-6

Finally, Fresno County must require stronger mitigation measures, require additional studies, and insist on meaningful solutions rather than superficial fixes. Approving the project as it stands would set a dangerous precedent for handling significant environmental impacts. Given the project's proximity to parks, residential areas, and the San Joaquin River, I strongly encourage the County to

reconsider the project's location. At the very least, the proposal should be rejected unless these concerns are fully addressed.

Comment 200-6 Cont.

Sincerely,

Beth Arrindell
4065 North Larkin Avenue
Fresno, CA 93727

From:	Adham Barghi
To:	Randall , David A.
Subject:	NO to Cemex Expansion
Date:	Monday, March 3, 2025 1:09:38 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hi David,

I live next door to Woodward park. I am voicing my comment and saying NO to the Cemex Expansion.

Comment 201-1

Best Regards,
Adham Barghi

From:	Katie Belden
To:	Randall , David A.
Subject:	CEMEX expansion
Date:	Monday, March 3, 2025 11:47:50 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

With all due respect, I urge you to do all you can to prevent the CEMEX expansion from moving forward. The San Joaquin River is home to so many species that are essential to the health of the local ecosystem, and destroying their habitat will have effects for generations to come.

Comment 202-1

My family and I visit the river area regularly, which is where I teach my children how to respect and care for their environment in a tangible way. When I am teaching my 5 year old son about the local bird populations, I am instilling in him a love and respect for the natural world that then affects how he (and we) consume and care for the resources around us. When I am explaining to my daughter the interactions between the different animals in the food web in our local ecological community, I am teaching her to treat other living creatures with kindness.

Comment 202-2

Please don't allow the mining project to be approved. We need these protected wild places more than we know.

Sincerely,

Kathleen Belden

From:	Brendan Bergh
To:	Randall , David A.
Subject:	Disapprove of CEMEX expansion
Date:	Monday, March 3, 2025 8:36:41 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 203-1

My wife and I received the mailer concerning the potential CEMEX expansion that would impact the San Joaquin River. We are homeowners and We are throughly opposed to any expansion. This is one of the only remaining open spaces in the area and we love the area. We are also worried about any potential harm to the local fish and wildlife and our water quality. Fresno water is already suspect enough.

Comment 203-2

Thank you,

Brendan Bergh

From: Rebekah Bergh
To: Randall , David A.
Subject: Oppose CEMEX expansion
Date: Monday, March 3, 2025 8:30:28 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I oppose the expansion and am a resident of Fresno county who enjoys outdoor spaces. Fresno has little to do for fun, so please don't take this space away.

Comment 204-1

Rebekah Bergh
Esq.

Sent from my IPhone

From: William Bopp
To: Randall , David A.; William Bopp
Subject: RE: CEMEX expansion
Date: Monday, March 3, 2025 2:55:03 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 3, 2025

Dear Mr. Randall:

I am writing to you regarding the Draft Environmental Impact Report for the expansion project.

Comment 205-1

I am a born and raised, Fresno boy, 67 years old, who likes to jog/run down by the San Joaquin River. It is a jewel. It's only going to get better with time.

I see that your title says Senior Planner. I assume you are good at your job. Like you, I've spent some time reading the pros and cons to this project.

I seem to come back to this one sentence: "They want to dynamite hundreds of feet below ground in close proximity to one of the country's most endangered rivers."
As you know, things happen. Mistakes are made.

I'd like my grandkids to enjoy this river that we have in Fresno. I'm sure you feel the same for your grandkids.

Do the right thing. Do NOT approve this project. It's the right thing to do.

Sincerely,

William Bopp
1744 E. Benvenuto Drive
Fresno, CA 93730
559-360-3175

From: MELINDA BREWER
To: Randall , David A.
Subject: CEMEX Expansion Public Comments
Date: Monday, March 3, 2025 9:46:06 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

After reviewing the PowerPoint information online, and although I am pro-industry advancement, I believe it is too much of a risk to move forward with this project. We cannot afford damaging the river and wildlife surrounding it.

Comment 206-1

From: Kelli Dudley
To: Randall , David A.
Subject: CEMEX quarry expansion
Date: Monday, March 3, 2025 11:41:09 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 207-1

I urge you to think critically of the environmental impacts of such an expansion. Currently, we need to consider the lasting impacts of expansions like these. As climate continues to change at the hands of corporations, we the people need to protect our lands. Our environmental future rests in the hands of people like you, and we need you to think of everyone and every living thing impacted by this, not merely financial gain. Please do your part for the people of Fresno, please reconsider this expansion and the harmful effects it will have on our beautiful lands in Fresno. I urge you to lead with your heart and have compassion and empathy for all beings whose safety rest in your hands.
Thank you for taking the time to read this,
Best, Kelli Dudley, resident of Fresno
Sent from my iPhone

From: Sharon Edwards
To: Randall , David A.
Subject: Cement
Date: Monday, March 3, 2025 2:55:36 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall

I am writing to vehemently oppose the proposed CEMEX expansion. If approved, it will cause irreparable damage to the San Joaquin River and the fish and wildlife that depend on it.

Comment 208-1

Sharon Edwards

From:	Preston Ernest
To:	Randall , David A.
Subject:	Opposition to the CEMEX 100-Year Permit / EIR
Date:	Monday, March 3, 2025 6:59:47 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am writing to voice my opposition to the proposed 100-year permit for the CEMEX mining operation and to formally challenge the adequacy of the Draft Environmental Impact Report (EIR). In my professional experience working with our region's unique ecosystems and native plant communities, I have witnessed firsthand how sensitive habitats can be disrupted by long-term industrial activities. Despite the significance of this project's potential impact on the San Joaquin River and surrounding areas, the EIR as drafted appears insufficient in scope and depth. Comment 209-1

Several key issues demand stronger analysis:

1. **Potential Degradation of Local Habitats**
   The EIR does not convincingly detail how continuous mining will affect flora and fauna that rely on existing ecosystems. Even slight encroachments can lead to cumulative habitat loss, yet the report provides limited evidence of a robust plan to preserve biodiversity over a century-long timeline. Comment 209-3
2. **Threats to Water Resources**
   Extended mining activities have the potential to alter groundwater tables and water quality—factors crucial to both native species and the broader community. The EIR offers minimal detail on how these resources will be monitored or protected over the long term. Comment 209-3
3. **Insufficient Cumulative Impact Assessment**
   Given that this permit spans 100 years, a comprehensive forward-looking evaluation is critical. The document needs to address how ongoing mining intersects with other regional pressures, including land-use changes, climate variability, and population growth. Comment 209-4

A project of this magnitude demands thorough scientific scrutiny, transparent mitigation strategies, and a clear plan for oversight to safeguard our local environment. Without a more rigorous assessment, it is premature to move forward with such a far-reaching permit. Comment 209-5

Thank you for considering my perspective. I respectfully request that the Planning Department reconsider this permit until the shortcomings in the EIR are adequately addressed.

Sincerely,

--

Preston Ernest
Fresno, CA 93701
T (559)578-6983
E ernestacres@gmail.com

From: Amy Gallagher
To: Randall , David A.
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Monday, March 3, 2025 9:38:34 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David,

Hi, I am a Fresno County resident and wanted to submit comments on the DEIR for the CEMEX Rockfield Expansion Project. Comment 210-1

A healthy, thriving river will be so much better economically for the region than any mine. I was at the Louis S. Eaton Trail today that runs north of Woodward Park along Friant and even though it was a cold, breezy morning, there were so many people out enjoying nature. I hiked Ball Ranch farther north last week and we saw so many dog walkers, families, and birders out enjoying the area. We need to do everything we can to protect the few green spaces we have.

Why would we allow a company to ruin our river? We have one river; we don't get a do-over. Comment 210-2

Also, a hundred years? A hundred-year contract is so long it almost boggles the mind. My elementary-aged children would have to live with the noise pollution, the air pollution, and the lack of river access for their *entire* lives. We should not move forward with a project that will negatively affect generations of Fresno county residents. Comment 210-3

We need the river - whole and healthy - more than we need a mine.

A few questions that need to be answered: Comment 210-4

1. I need to know that the river will not be affected at all. My children go to River Camp just south of the proposed area and they deserve a childhood full of nature, and a chance to enjoy the river.

2. Birds! We have so many birds along the river, I need to know that their habitat and food will be safe and that the mining will not affect them. Comment 210-5

3. Fresno already has some of the worst air pollution in the country. I need to know that there will be NO additional air pollution. Comment 210-6

4. No one is going to want to hike or camp at Lost Lake for the hundred years they're mining Comment 210-7

next door. Lost Lake is one of the few county parks that we can camp at, and to lose that would be terrible. I need to know that the mining won't affect the enjoyment of being at Lost Lake.

Comment 210-7 Cont.

5. And blast mining that close to a Friant Dam, less than three miles apart? That feels like a disaster waiting to happen. Have *independent* dam engineers agreed that explosions that close to a dam are ok?

Comment 210-8

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments.

Comment 210-9

I look forward to your response and further discussions on this important matter.

Sincerely,

Amy Gallagher

From:	Thomas Grogan
To:	Randall , David A.
Subject:	Cmex expansion
Date:	Monday, March 3, 2025 2:25:29 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Sir, my wife and I live very close to Cmex and abhor the idea that the business is expanding. There are already too many large trucks traveling up and down Friant Avenue. Comment 211-1

Also, the damage to the river and the surrounding environments can't be mitigated once done. Hard rock blasting is noise and dust pollution as well as threatening to our water to say nothing about impacting fish and wildlife. There must be a better quarry location than next to a projected 5,000 homes! We are opposed to the project. Comment(s) 211-2, 211-3 211-4

Gail and Tom Grogan
1822 E Calle Verde Way, Fresno
Sent from my iPhone

From:	Karen Hammer
To:	Randall , David A.
Cc:	Karen Hammer
Subject:	Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Monday, March 3, 2025 9:09:27 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Karen Hammer
709 W Scandia Ln
Clovis, CA 93619
ecuagirl45@yahoo.com
(559)298-5272
March 3, 2025

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report

Dear Mr. Randall,

I am a resident of Fresno County and I am writing to express my opposition to the proposed 100-year permit for the CEMEX mining operation and to challenge the adequacy of the Draft Environmental Impact Report (EIR) prepared for this project. The EIR does not sufficiently or accurately assess the environmental, ecological, and community impacts this long-term operation will have on the San Joaquin River and surrounding areas.

Comment 212-1

As someone who frequently travels on roads through the area impacted by this project, and with experience in conservation and outdoor recreation, I find that the EIR fails to adequately address the following concerns:

Comment 212-2

1. The DEIR states that project emissions may exceed cancer risk thresholds. Has an analysis been done of the population-wide cancer burden? CEQA requires an analysis be done before taking into account possible mitigation measures. Fresno already has some of the worst air quality in the state!

2. What about the noise from blasting and its effects not only on residents in the area, but on people walking in the adjacent park lands? What mitigation measures are there for noise reduction at night as well as in the daytime?

Comment 212-3

3. I am very concerned about traffic congestion and the heavy trucks that will be using the

Comment 212-4

Friant/Willow corridor. I am concerned about my safety and the safety of student drivers from the Willow/International education complexes. What will CEMEX do to mitigate the traffic impacts?

Comment 212-4 Cont.

4. Some areas of local and regular recreation for residents of Fresno County include Ball Ranch, Ledger Island, Sumner Peck, and the River Center. Has the EIR analyzed the impact this project would have on the ability of county residents to recreate in these areas taking into account the noise pollution, traffic congestion and hazards, and air quality/

Comment 212-5

A project of this scale and duration - 100 years??!! - requires a far more comprehensive environmental review with thorough scientific analysis, long-term cumulative impact assessments, and meaningful mitigation strategies. This DEIR does not meet these standards, and I urge Fresno County to require revisions that fully account for the long-term consequences of extending CEMEX's mining operations.

Comment 212-6

I request that the Planning Department reconsider this permit in light of the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.

Thank you for your time and consideration.

Sincerely,
Karen Hammer

From:	Carla Hawks
To:	Randall , David A.
Subject:	Cemex & San Joaquin
Date:	Monday, March 3, 2025 3:24:21 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,
Do not allow Cemex to make another gravel pit on what's left of our river.

Comment 213-1

What does an international corporation like Cemex care about our quality of our environment? They do not care.

I am extremely opposed to another gravel pit. I worked at PW&P for John Thompson and I know how much the Parkway means to our community.

Do what's right for Fresno County and the San Joaquin River.

Carla Hawks

From:	Robert Hills
To:	Randall , David A.
Subject:	cemex rockfield mine
Date:	Monday, March 3, 2025 9:12:00 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I did not see in the ERI any mention of the recreational needs of people of color and the less fortunate. Not everyone has a cabin in Shaver, a boat or even the means to hop up to Shaver to recreate by the water. Lost lake has been an outlet for swimming, fishing and picknicking for many years. We walk there once a week for the peace and tranquility of the area. Cemex needs to address this issue.

Comment 214-1

Thanks,
Bob Hills

From:	Robert Hills
To:	Randall , David A.
Subject:	cemex rockfield mine
Date:	Monday, March 3, 2025 9:18:02 AM

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Report Suspicious

Comment 215-1

I think the ERI is a little wishy washy when it comes to the reaction of fish if this project is giving the go ahead. I am a fly fisherman. Every fly fisherman in the world knows that fish react in a fraction of a second to shockwaves, noise and shadows. If they don't, they won't catch any fish. This area will become a dead zone if it is foolishly given the go ahead.

Thanks,
Bob Hills

From:	jonathan Howerton
To:	Randall , David A.
Subject:	CEMEX Expansion
Date:	Monday, March 3, 2025 5:10:18 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

To Whom It May Concern,

Comment 216-1

The purpose of this email is to voice my objections to the proposed CEMEX expansion. I am a resident in the Woodward Lake community and feel that this expansion would negatively affect my quality of life as well as the quality of life for the entire geographic area. My biggest concerns include noise, traffic, environmental damage to the land, environmental damage to the river and waterways, and damage to wildlife habitats. Please include these concerns in the decision making process.
Sincerely,
Jon Howerton

Sent from my iPhone

From: Steve Hromada
To: Randall , David A.
Subject: Comment on CEMEX Quarry Expansion
Date: Monday, March 3, 2025 9:56:40 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hi Mr. Randall,

I have reviewed the Draft EIR for the CEMEX project, and I see a few glaring issues, especially with respect to the Biological Resources: Comment 217-1

The project claims that Western Pond Turtle is unlikely to occur on the project site as "the level of disturbance" prohibits movement of the species without a citation. This federal candidate species is known to occur at the Fresno Water Treatment plant (and others in CA, Germano 2010), so this claim that it is unlikely to occur due to disturbance seems optimistic. They noted that red-eared slider turtles were found, suggesting that suitable aquatic turtle habitat is present yet they could not detect pond turtles during their brief assessments. Red-eared sliders can exclude pond turtles from basking sites, making detection of pond turtles more difficult (Lambert et al., 2019). A real survey and plan to exclude turtles from the project site is needed, as there could be risks (vehicle collisions) associated with turtles using the site even if habitat is not disturbed.

There is no mention of surveys for the Northern legless lizard (Anniella pulchra). Although not known from this area, the species of special concern was recently discovered in the dry riverbed of the Fresno river in Madera (Hansen and Shedd 2025). This suggests that the species potentially occurs in eastern Fresno county, though no formal surveys have been performed. The species can persist in annual grassland habitats and surveys should be performed to confirm absence. Comment 217-2

Better surveys for presence of western spadefoot is also needed, as they may occupy the annual grassland on the site and use other bodies of water for reproduction. There are historic occurrences along the San Joaquin River. Comment 217-3

Suitable habitat also likely exists for other amphibian (e.g. *Batrachoseps gregarius*) and reptile species (e.g. *Thamnophis sirtalis*, *Sceloporus occidentalis*) that were absent from the report suggesting that the study was not thorough in accounting for potential impacts. Comment 217-4

Further, although breeding birds may not be present directly on the site, the changes in practices and increased traffic may cause nests to fail in the surrounding area. Nesting birds in the area should be better documented and potential impacts of blasting on nearby nests should be considered. Comment 217-5

Thanks,

--
Steven Hromada, PhD Ecology Evolution and Conservation Biology
stevehromada@gmail.com

From: Barbara Hueyn
To: Randall , David A.
Subject: CEMEX EXPANSION
Date: Monday, March 3, 2025 12:52:10 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I am totally against approving the CEMEX Expansion. It will: Comment 218-1
1. Irreparably harm the river. Comment 218-2
2. Limit land use needs in the future 100 years. Land has already been dedicated to provide natural outdoor experiences for the citizens. Comment 218-3
3. Add to the congestion on the roads in close proximity to Woodward and the Parkway, residences, and commercial establishments. Comment 218-4
4. Limit Senior citizens the pleasure open spaces available, since they are unable to travel farther. Comment 218-5
5. Increase disturbing wildlife.

The company has outlived using the land for their own use. The city has grown around them. Their existence unfortunately no longer fits into the scheme of our city. Comment 218-6

Thank you for your consideration.
Sent from my iPad

From:	John Kirby
To:	Randall , David A.
Subject:	CEMEX expansion
Date:	Monday, March 3, 2025 2:59:50 PM
Attachments:	image.png

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

In considering approval of the Cemex expansion plans, we note all the areas listed below that benefit Cemex.

Comment 219-1

We note nothing in this rather long list that explains the benefits to the residents of Fresno County. *We therefore stand in opposition to the approval of this expansion plan.*

Cemex's expansion plan primarily benefits from increased market reach, particularly in the US, allowing them to capture a larger share of the construction materials market, leading to potential for **higher revenue, improved profitability, and stronger market position**; additionally, their focus on sustainable practices and "Urbanization Solutions" could attract environmentally conscious customers and tap into growing urban development needs, while also potentially enhancing brand reputation and opening new growth avenues.

Key benefits of Cemex's expansion plan:

Market Penetration:

By expanding their presence in the US, especially in the aggregates market, Cemex can tap into a large and growing construction sector, potentially increasing sales and market share significantly.

Profitability Boost:

Accessing a larger market with higher demand could lead to increased revenue and profitability, allowing for reinvestment in further growth initiatives.

Diversification:

Focusing on the "Urbanization Solutions" business can provide a new revenue stream beyond traditional cement products, aligning with growing urban development needs.

Sustainability Advantage:

By prioritizing lower-carbon and circular practices, Cemex can appeal to environmentally conscious customers and potentially gain a competitive edge.

Operational Efficiency:

Investment in technology and digital platforms like "Cemex Go" can optimize operations, improve customer service, and reduce costs.

Brand Reputation:

A focus on sustainability initiatives can enhance Cemex's brand image and attract a broader customer base.

John & Norma Kirby
1598 E La Quinta Dr, Fresno, CA 93730
Home (559) 434-3235 Cell (559) 908-9861

From:	Rebecca Lindquist
To:	Randall , David A.
Subject:	Cemex Expansion comments
Date:	Monday, March 3, 2025 3:10:17 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 220-1

This email is to share our concerns about the Cemex expansion and the type of mining they will be conducting.

We are longtime Fresno County residents who value efforts to support a beautiful river as a resource for residents and wildlife in our area.

We need natural beauty close to population, not a few hours drive away. Many cities place high value on their waterways and natural habitats because they understand the importance of these resources for human respite and wildlife refuge, not to mention property values.

We have enjoyed time spent along the river and bird walks along its shores. However, we remember well the unsightly mining that used to permeate the San Joaquin River! We appreciate leaders who turned it into something better and more useful so it can contribute to quality of life for our Valley.

The Cemex expansion threatens this valuable resource to Fresno County. Let's not go backwards.

Thank you,
Russell and Rebecca Lindquist
4638 N. Van Ness Blvd
Fresno, CA. 93704
1-559-970-9658

Sent from my iPhone

From: STEVE MATTHEWS
To: Randall , David A.
Subject: CEMEX Expansion Opposition
Date: Monday, March 3, 2025 2:41:08 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 221-1

Dear Mr. Randall,
I am writing to let you know I oppose the CEMEX expansion project.
I feel it is detrimental to the residents of Fresno County.
It will increase traffic, add wear and tear to the roads, impact recreational areas nearby, impact fish and wildlife, add pollution, while adding no benefit to the tax paying residents of Fresno County.
Please take my opinion into consideration.

Thank you,
Steven Matthews

From: Gerard Medeiros
To: Randall , David A.
Subject: Opposition to CEMEX Rockfield Quarry Expansion Project
Date: Monday, March 3, 2025 4:51:36 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Subject: Opposition to CEMEX Rockfield Quarry Expansion Project

Dear Mr. Randall,

I am writing to express my strong opposition to the proposed expansion of the CEMEX Rockfield Quarry, as detailed in the Draft Environmental Impact Report (DEIR). This project poses significant threats to the San Joaquin River ecosystem, public safety, and local infrastructure.

Comment 222-1

Environmental Concerns:

• Depth of Excavation: The plan to excavate up to 600 feet below ground surface raises concerns about potential impacts on groundwater levels and the overall health of the river ecosystem.

• Blasting Operations: Transitioning from mechanical digging to blasting hard rock introduces risks of habitat disruption, noise pollution, and potential harm to aquatic and terrestrial wildlife.

Comment 222-2

Public Safety and Infrastructure:

Comment 222-3

• Increased Traffic: The project is expected to increase heavy truck traffic on local roads, leading to accelerated wear and tear, elevated maintenance costs, and heightened risks of accidents.

• Air Quality: Blasting and increased vehicular emissions could degrade air quality, adversely affecting public health, especially for vulnerable populations.

Comment 222-4

Economic Considerations:

Comment 222-5

• Tourism and Recreation: The San Joaquin River is a vital recreational asset. The proposed expansion could deter tourism, impacting local businesses and diminishing residents' quality of life.

Recommendations:

1. Comprehensive Environmental Review: Conduct a thorough and updated environmental impact assessment to address the potential consequences of deeper excavation and blasting.

2. Public Consultation: Engage with local communities, environmental organizations, and other stakeholders to gather input and address concerns transparently.

3. Alternative Solutions: Explore less invasive methods or alternative sites that would minimize environmental and community impacts.

In conclusion, the potential risks associated with the CEMEX Rockfield Quarry expansion outweigh the anticipated benefits. I urge the Fresno County Public Works & Planning Department to reconsider the approval of this project to safeguard our community and natural resources.

Thank you for considering my comments.

Sincerely,

Gerard Medeiros

1792 E Benvenuto Dr.

Fresno, Ca. 93730

Gerard.Medeiros@att.net

From: Carol Ann Meme
To: Randall , David A.
Subject: CEMEX project
Date: Monday, March 3, 2025 10:36:22 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good morning David:
I am writing regarding my **OPPOSITION** to the CEMEX expansion project that is being considered for approval by the County Board of Supervisors. Comment 223-1
There are several areas of concern that I have.
1. The DEIR states that the project could have emissions that may exceed cancer risk thresholds. There is no evaluation of the population-wide cancer burden. We already have an increased risk of cancer due to environmental issues (air pollution, poor water quality, etc) here in the Central Valley and this will only add to that burden.
2. The DEIR does not adequately analyze potential impacts of blasting on wildlife in this area. The examples given only related to surface mining and not the deep pit mining that is being proposed. Our wildlife in this area are already burdened by excessive heat, drought, loss of habitat and lack of clean water. This will only make conditions worse for our already threatened wildlife. Comment 223-2
3. Impacts from blasting on local residents are not adequately addressed in the DEIR. Besides the noise, there are the impacts it can have on structures, wells, destabilization of the San Joaquin River embankment. The DEIR also did not analyze the impact that blasting may have on those who use Woodward Park. Comment 223-3
4. There is also concern that this additional mining is not even really needed. I read an article in the Fresno Bee by Marik Warszawski stating that there are more than adequate reserves of the materials that this mining is going to produce. So why would we risk all these potential negative impacts when we have plenty of the product already at hand and provided by a different vendor? Comment 223-4
Please let the county know that this is a very bad idea from many standpoints. Let's protect our air quality, our wildlife and the residents who live in this area from more destruction for no purpose. Comment 223-5
Thank you for taking the time to read my comments.
Carol Ann Meme
7138 W. Browning Avenue
Fresno, CA 93723
559 906 5027

From:	Rene Mertens
To:	Randall , David A.
Subject:	CEMEX EXPANSION DRAFT ENVIRONMENTAL IMPACT REPORT
Date:	Monday, March 3, 2025 2:44:35 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall,

Comment 224-1

Please do not allow 100 more years of mining by CEMEX near the SJ River. The environmental impact to wildlife and the river would be a disaster. The noise and scale of blasting would impact neighborhoods in surrounding areas and the health of those communities.

This is an existential threat to the SJ River and all those who enjoy its beauty and would also threaten water quality.

Sincerely,
Rene Mertens

March 3, 2025

David Randall, Fresno County Senior Planner
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Sir,

CEMEX, a multinational mining company wants to dynamite a 600 foot deep pit too close to the San Joaquin River. County planners spent 5 years preparing a 3,767 page draft EIR for the so-called **"Rockfield Quarry Modification Project".** Comment 225-1

For the Fresno area, the ***Aggregate Sustainability in California*** report (last updated by the **California Geological Survey** in 2018) states that 305 million tons of aggregate will be needed for the next 50 years. We already have **556** million tons of permitted aggregate reserves.

If the wall of earth separating the river and the open mine gave way, a **disaster** would result. Comment 225-2

For these and many other reasons please oppose the development of the **Rockfield Quarry Modification Project**

Cheryl Milnac
3555 W. Bullard Ave.
#225
Fresno, CA 93711

March 3, 2025

David Randall, Fresno County Senior Planner
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Sir,

CEMEX, a multinational mining company wants to dynamite a 600 foot deep pit too close to the San Joaquin River. County planners spent 5 years preparing a 3,767 page draft EIR for the so-called **"Rockfield Quarry Modification Project".**

For the Fresno area, the ***Aggregate Sustainability in California*** report (last updated by the **California Geological Survey** in 2018) states that 305 million tons of aggregate will be needed for the next 50 years. We already have **556** million tons of permitted aggregate reserves.

If the wall of earth separating the river and the open mine gave way, a **disaster** would result.

For these and many other reasons please oppose the development of the **Rockfield Quarry Modification Project**

Kenneth Richards
4622 N. Harrison
Fresno CA 93704

Jeri Stubblefield
16898 Road Runner Ln
Clovis CA 93619
jeristubblefield@gmail.com

Tim Kutzmark
2732 E. Darlington Ct
Fresno CA 93720

Jackie Newman
4733 W. Alluvial Ave
Fresno 93723

Judith Switzer
4743 N. Safford
Fresno, California 93704

Elizabeth Prenger #412
45323 Park Sierra
Coarsegold CA 93614

Laura Radinoff
4915 E. Sooner Dr.
Fresno, CA 93727

From: Mtunga, Tawanda
To: Randall , David A.
Subject: FW: CEMEX
Date: Monday, March 3, 2025 8:22:32 AM
Attachments: image001.png

Tawanda Mtunga | **Principal Planner**
Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4022 Direct: (559) 600-4256 Cell Phone: (559) 826-9265
Your input matters! Customer Service Survey

From: Marcella Osterhaus <marcella-m@att.net>
Sent: Saturday, March 01, 2025 5:42 AM
To: Mtunga, Tawanda <tmtunga@fresnocountyca.gov>
Subject: CEMEX

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK
Report Suspicious

Dear Sir,

The proposed expansion of CEMEX operations along the San Joaquin River is detrimental to the environment.. It negatively impacts the surrounding habitat and possibly impacts the San Joaquin River itself. CEMEX has been in that location and has a permit for 100 years but at this point allowing it to expand by digging a 600 foot hole so close to the river, so near a growing area is harmful to the community. Recreational areas like ball ranch, and the open area of Sumner- Peck affords people to go out and enjoy the river so allowing Cemex to dig a 600 foot hole in that area is not good. Friant Road has a lot of traffic already and it continues to have more and more traffic as homes are being built north and east of it. Allowing many heavy gravel trucks to use it daily makes the situation worse.

Many families enjoy going to the San Joaquin River and allowing Cemex to dig there harms air quality. The environmental impact report was done when? Has there been a recent EIR done?
In this area we have very few places to take families to the San Joaquin River and this is one of them and it's important to keep it to enjoy now and years to come. .
Thank you, Marcella L Osterhaus

Sent from AT&T Yahoo Mail for iPhone

Comment 227-1
Comment 227-2
Comment 227-3
Comment 227-4

From: John Peckham
To: Randall , David A.
Subject: CEMEX Expansion
Date: Monday, March 3, 2025 4:03:15 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I oppose the expansion. My main fear is for the San Joaquin river. Many millions of dollars have and will be spent to try and introduce Chinook Salmon back to the river. Blasting and possible contamination by silt and other runoff could severely damage fish and other wildlife. I and some of my Kokanee Power friends have volunteered at the Friant fish hatchery. We know how delicate the salmon fry are. They need clean water. It seems that there are two other locations for the aggregate that is needed. Kings River and 145 and 41 area. Thanks for listening. Please register my NO vote. Sent from my iPhone

Comment 228-1

Comment 228-2

Karl Quinn
923 East Teague Ave
Fresno, CA 93720

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street
6th Floor
Fresno, CA 93721

March 3, 2025

Dear Mr Randall:

I am writing to ask you NOT to approve the the proposed CEMEX expansion.

Comment 229-1

I am a hiker and photographer and would like to preserve the San Joaquin River and surrounding area. After many years of hard work, the river is doing much better. Let us preserve that progress for everyone to enjoy.

The proposed expansion with one hundred years of continued mining is a very long time! A many hundred foot deep pit mine will have drastic and deleterious effects on the surrounding wild area. Please do not approve this proposal.

Comment 229-1

Thank you very much for listening.

Karl Quinn

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Karl Quinn
923 East Teague Ave.
Fresno, CA 93720

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Mr. Quinn

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From: Mecca Billiards
To: Randall , David A.
Subject: Cemex expansion San Joaquin River
Date: Monday, March 3, 2025 11:20:36 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 230-1

Please disapprove Cemex expansion. I would not approve threating water quality and impacting fish and wildlife. Please say NO to Cemex expansion!!

Nanette Stockle
589 E. Ahwahnee Ave
Fresno, Ca. 93720

From: jactac@comcast.net
To: Randall , David A.
Subject: CEMEX Expansion Proposal
Date: Monday, March 3, 2025 10:34:08 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 231-1

Like so many of my friends and neighbors, I am deeply opposed to allowing the expansion of CEMEX. Allowing the creation of a 600-foot-deep mining pit in this residential and environmental area would be greatly damaging in many ways. Mining rights for 100 years in this area would also be irresponsible. Please reject the CEMEX project.

Jack Tacchino
10657 N. Coronado Circle
Fresno, CA 93730
Ph: (559) 260-5936

Virus-free.www.avast.com

From:	Neil Thompson
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR 7763
Date:	Monday, March 3, 2025 6:16:46 PM
Attachments:	Appendix G-1, Appendix A Figure 2 Regulatory Floodways.pdf Fig. 2-8 Quarry Site Mining Plan.pdf SJR Parkway Master Plan Fig 7-1-and 7-2.pdf

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall.

Figure 2-8 Quarry Site Proposed Mining Plan indicates a potential route for a Parkway Trail along the western side of the Quarry Site.

Comment 232-1

Figure 2-8 also includes notes that seem to indicate that there was, is and will be a 200' setback from the edge of the river channel and any earth stockpiling or excavation. Please note that the 200' setback is from the edge of the river (presumably at normal water release levels from Millerton Lake) to the top edge of the open pit mine where the 2:1 slope drops into the pit. The setback is not from CEMEX's property line! There are several locations near the westerly bend in the river where the setback will be less that 100 feet from the edge of the pit. This means that the "berm" that will separate the river from the pit will be far less wide than anticipated. And there is no indication that the "berm" will have any height to it nor that it will be higher than the edge of the pit.

A close examination of the topographic survey found in Appendix G-1, Appendix 1, Figure 2 shows the extent of the stockpiling and excavations that have been performed in the past. It is obvious that significant earthwork would be required to construct the "berm" to separate the river from the pit mine. It is unclear when the berm would be constructed. Without the berm there would not be any chance of constructing a Parkway Trail along the approximately 1.5 miles of river frontage.

Comment 232-2

It is also evident that a serious flood risk exists along this stretch of the river as the westerly bank is much higher than the Quarry side is. This flooding risk would increase the likelihood that the Trail would be severely damaged or rendered unusable for long periods of time and at great cost of reconstruction.

Comment 232-3

The construction of a Parkway Trail would probably require at least a 20-25' easement for the trail itself plus additional slope easements to accommodate changing terrain contours. The visual quality of the trail immediately next to the pit is less than appropriate. About as exciting as walking down the Los Angeles River.

Comment 232-4

Did I mention the safety risk of someone, or many, falling down the 2:1 slope into the pit? No fence can keep preteens, teenagers and other curious humans from exploring dangerous conditions. Who will install the fence? Who will maintain the fence FOREVER? The significant liability for the County will never cease.

Comment 232-5

The offer of the Parkway easement is given as an inducement for the County's approval of the Application, yet it is not listed as a required Mitigation Measure. Without a Parkway trail along the westerly (or easterly) boundary of the Quarry Site, the Quarry Site will physically divide an established community, the San Joaquin River Parkway with the San Joaquin Conservancy as Lead Agency, which is a CEQA Impact 4.11-1. Without the trail the Quarry will physically block all pedestrian traffic from moving up and down the river corridor. It will also substantially block westerly bicycle traffic as the use of Friant Road for west bound bicyclists has been known to be a dangerous section with significant aggregate on the bike path and stones being thrown from the aggregate trucks.

Comment 232-6

Comment 232-7

The lack of a trail also falls under CEQA Impact 4.11.2 as the Quarry Site "*conflict(s) with land use policies, plans and regulations*".

Comment 232-8

OS-A.15 **San Joaquin River Protection**. *The County shall support policies of the San Joaquin River Parkway Master Plan to protect the San Joaquin River as an aquatic habitat, recreational amenity, aesthetic resource, and water source. (See Policy OS-H.11*)

OS-C.8 **Aggregate Mine Buffers** *The County shall, where feasible along the San Joaquin River, site recreational trails, bikeways, and other recreation areas at least three hundred (300) feet from the edge of active aggregate mining operations and separate them by physical barriers. Recreational trail/bikeway crossings of active haul routes should be avoided whenever possible; if crossing of haul routes are necessary, separate where feasible*.

OS-H.10 restates **OS-A.15** noted above.

OS-I.3 Trail/Bikeway Right-of-Way *The County shall require that adequate rights-of-way or easements are provided for designated trails or bikeways as a condition of land development approvals.*

HS-C.4 Floodwater Diversion *The county shall require new flood control projects or developments within areas subject to 100- and 200- year frequency floods are designed and constructed in a manner that will not cause floodwaters to be diverted onto adjacent property or increase flood hazards to property located elsewhere*.

HS-C.12 200- Year Water Surface Elevation Investigations *The County shall encourage the performance of appropriate investigations to determine the 200-year water surface elevations for the San Joaquin River, taking into account recent storm events and existing channel conditions, to identify the potential extent and risk of flooding. New development, including public infrastructure projects, shall not be allowed along the river until the risk of flooding at the site has been determined and appropriate flood risk reduction measures identified.*

Therefore, the EIR should be revised to include a required Mitigation Measure for a future Parkway Trail easement at the Quarry Site.

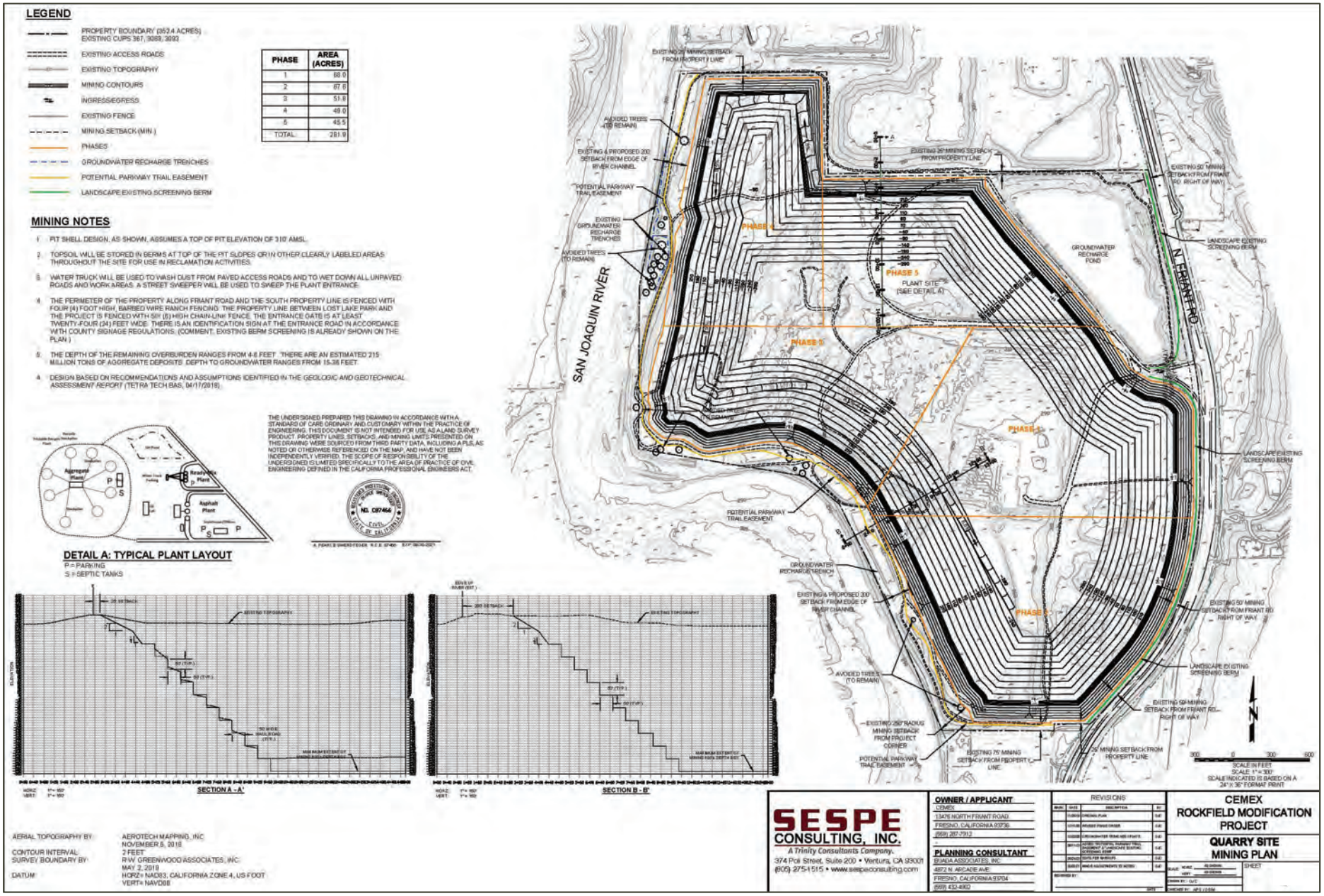
Comment 232-9

The Mitigation Measure should address, at a minimum, the following issues

- The easement shall be on the westerly side of the Quarry, adjacent to the river.
- The easement shall not be within 300 feet from the breakover point into the mine that has a slope the is steeper than 4:1 (horizontal to vertical).
- The layout of the easement shall be solely on the lands of CEMEX
- The easement shall provide such width as necessary for a Multi-Use Trail with Shoulder for Equestrian Use as shown on Figure 7-2 of the Joaquin River Parkway Master Plan plus such additional width for slope easement as necessary.
- The surface elevation of the land within the easement shall be not lower than one foot above the established flood water surface elevation for a 200-year flood event.
- The surface elevation of the land within the easement shall be completed within 5 years after the approval of the Application such that the Parkway Trail can be constructed at that time if the Conservancy so desires.
- The easement shall not require the construction of bridges within the lands of CEMEX.

Thank you for your consideration.

Neil Thompson
514 E. Cole Ave.
Fresno, CA 93720
nsthompson@aol.com
(559) 977-3339



SOURCE: CEMEX 2021; arranged by Benchmark Resources in 2022

Proposed Quarry Site Mining Plan
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 2-8

BENCHMARK RESOURCES

Figure 7-1 Parkway Multi-use Trail

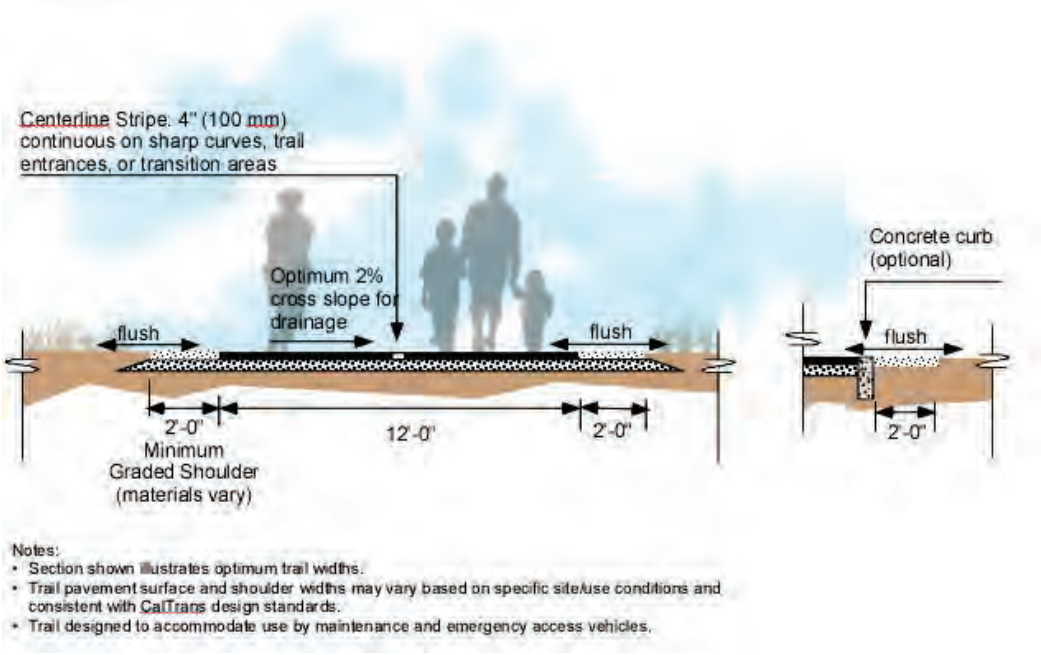
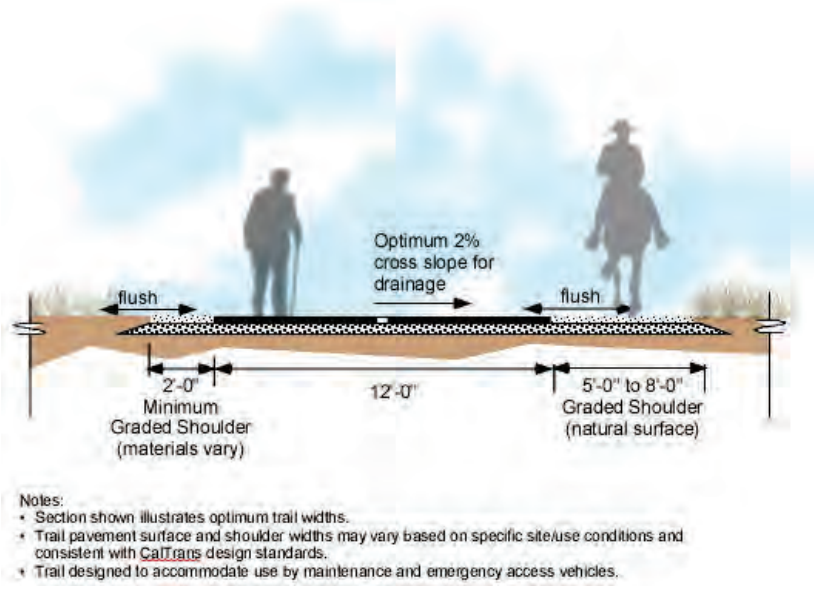
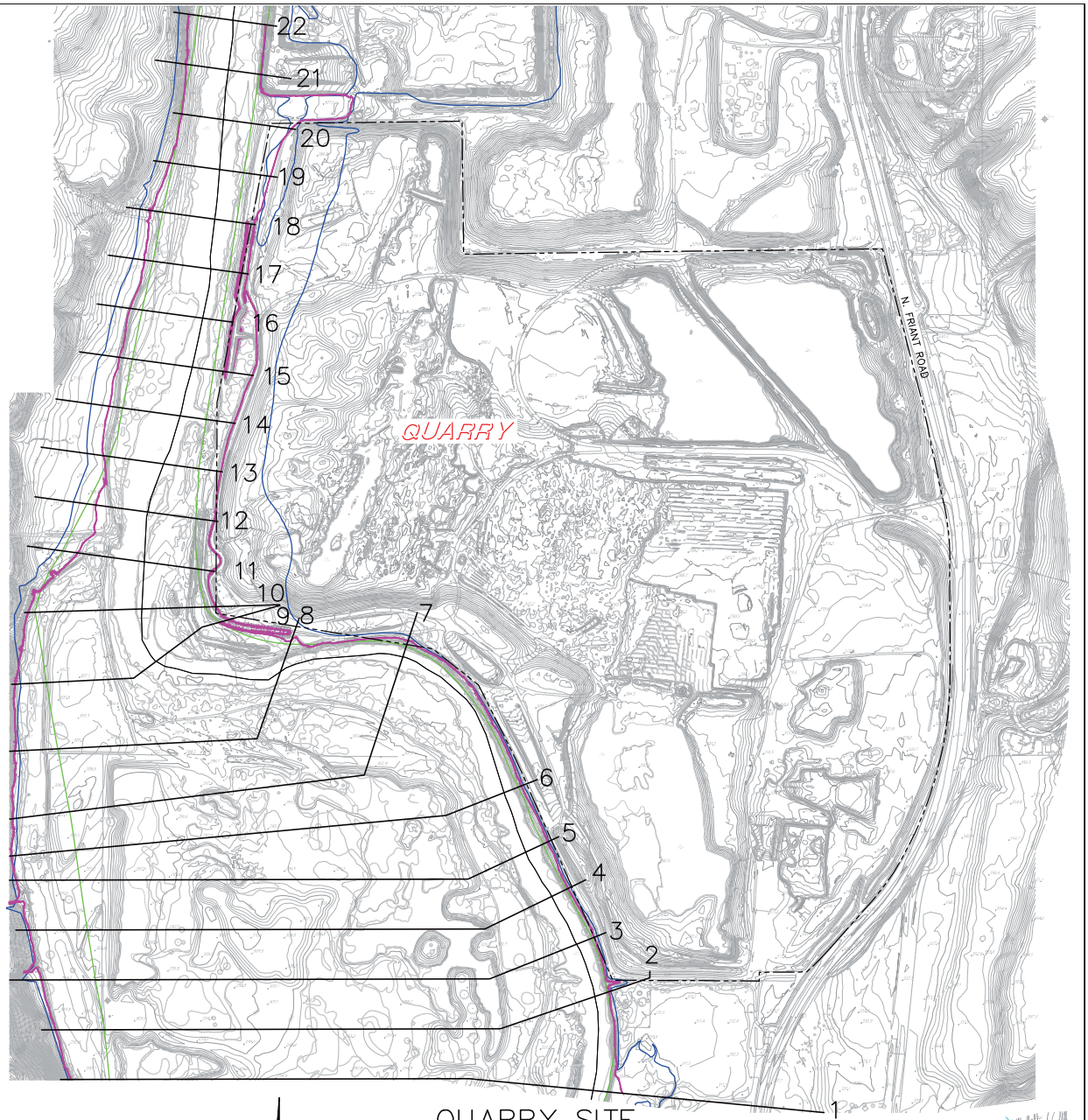


Figure 7-2 Parkway Multi-use Trail with Shoulder for Equestrian Use





QUARRY SITE

GRAPHIC SCALE
300 0 150 300 600
1 INCH = 300 FEET

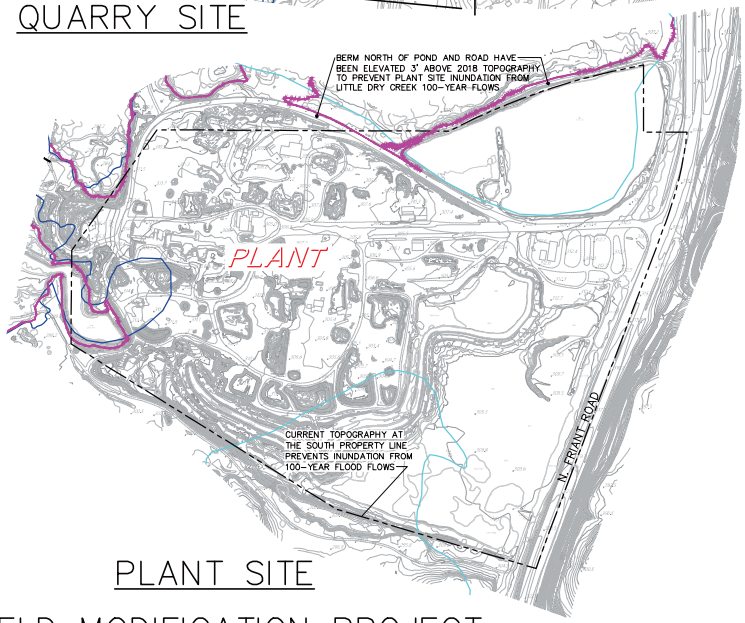
LEGEND:

- HEC-RAS CROSS-SECTION
- FEMA 100-YEAR ZONE AE FLOODPLAIN
- FEMA 100-YEAR ZONE A FLOODPLAIN
- FEMA REGULATORY FLOODWAY
- CURRENT 100-YEAR FLOODPLAIN

TOPOGRAPHY SOURCE:
AEROTECH MAPPING, INC. NOVEMBER 11, 2018, NAVD 88.

NOTES:
THE CURRENT SAN JOAQUIN RIVER 100-YEAR FLOODPLAIN ALONG THE QUARRY SITE IS BASED ON A DETAILED HYDRAULIC ANALYSIS USING NOVEMBER 2018 TOPOGRAPHIC MAPPING.

THE FEMA FLOODWAY DOES NOT EXTEND INTO THE AREA OF THE PLANT SITE. THE FEMA 100-YEAR FLOODPLAIN AREAS THAT EXTEND ONTO THE NORTH AND SOUTH PORTIONS OF THE PLANT SITE ARE DESIGNATED ZONE A. A ZONE A FLOODPLAIN IS NOT BASED ON A DETAILED HYDRAULIC ANALYSIS. THEREFORE, THE CURRENT 100-YEAR FLOODPLAIN ALONG THE PLANT SITE IN THESE AREAS IS BASED ON ENGINEERING ESTIMATE OF THE ADJACENT FEMA 100-YEAR ZONE A FLOODPLAIN AND PLOTTING ON THE CURRENT TOPOGRAPHY.



PLANT SITE

CEMEX ROCKFIELD MODIFICATION PROJECT

FIGURE 2: REGULATORY FLOODWAYS & FLOODPLAINS; CURRENT FLOODPLAINS

From:	Neil Thompson
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR 7763
Date:	Monday, March 3, 2025 8:13:45 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Section 6 of the DEIR discusses the various Alternatives that have been proposed in addition to the Alternative 1: No Project.

Comment 233-1

With the exception of Alternative 4: Reduced Mining Depth (300 feet) with Additional Setbacks, none of the revised project alternatives (Alternates 2, 3 & 5) provide any reduction in the impacts to the environment other than reducing the duration of the impact from a very long term to only a long term - maybe only impacting two or three generations as opposed to impacting four generations of a typical family. And the physical impacts to the river, wildlife, birds and surrounding land would never benefit from the reduction in time of disruption from 100-years to 63-years.

These are hollow Alternatives. They provide no basis for acceptance as they only impact the Applicant by reducing the Operational Life or extraction volume.

Section 6.4.2.1 provides excuses for not considering alternative sites. The Applicant avoids acknowledging that they have previously investigated another site (Jesse Morrow) at great length. It stands to reason that the Rockfield site(s) was not their first selection but a fallback position when the Jesse Morrow site became unavailable. If there are two potential sites (Rockfield and Jesse Morrow) in Fresno County, there must be other potential sites.

Comment 233-2

The Alternative Analysis should be rewritten to provide significant alternatives that might at least include:

Comment 233-3

- no hard rock mining at the Rockfield site(s)
- expanded setbacks along the river and Friant Road
- reclamation plans that do not have hard rock facings
- potential alternative sites

Thank you for your consideration.

Neil Thompson
514 E. Cole Ave.
Fresno, CA 93720
nsthompson@aol.com
(559) 977-3339

Comment 234-1

From: ltiboni@comcast.net
To: Randall , David A.
Subject: It is very hard not to be emotional at the mere thought of this happening along the beloved San Joaquin River. It"s bad enough that Cemex was allowed to operate where it currently is instead of being turned over to the Parkway Trust. T
Date: Monday, March 3, 2025 9:19:23 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

From:	Gordon Tischler
To:	Randall , David A.
Subject:	Cemex Expansion
Date:	Monday, March 3, 2025 7:54:28 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I am writing to oppose the Cemex expansion for 100 years on the river.

Comment 235-1

Claudia Tischler

Sent from my iPad

From: Doris Van
To: Randall , David A.
Subject: CEMEX expansion
Date: Monday, March 3, 2025 4:25:13 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I live in North east Fresno and frequently go to Woodward Park. I am against the proposal to allow 100 more years of mining and to create a 600 ft pit. The impact to residents of Fresno and Madera will be huge - air quality will be worse, traffic and noise will be unacceptable to those who live nearby or use the parks or river.

Comment 236-1

This location is too close to those who live nearby or travel on the road that already is impacted by traffic. The San Joaquin river is used by the community and they project will be an eyesore. This will increase traffic and pollution on the nearby roads and community.

Comment 236-2

Please do not approve this project as it will affect our children and grandchildren.

Doris Van

From: Karla Baker
To: Randall , David A.
Subject: Cemex Expansion
Date: Tuesday, March 4, 2025 8:05:04 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr Randall, Senior Planner,

I do not want 100 more years of mining our river. Please stop the mining of our beautiful river and do not contribute to the further expansion of this horrible eyesore. Also I'm very troubled by all the river rock people are using on mediums and in their landscaping. Its no different from asphalt, concrete, in that it further reduces the humidity in the air and increases the temperature of our city. Please stop this polluting project.

Comment 237-1

Karla Baker retired LCSW and mental health provider and someone who wants to protect our beautiful river for our children.

From: Jerry Bier
To: Randall , David A.
Subject: cemex
Date: Tuesday, March 4, 2025 8:01:53 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,
We are extremely opposed to the application of Cemex for a 600-foot mining pit along the San Joaquin River.
We hope the county staff will vigorously recommend against this application.

Comment 238-1

Sincerely,
Gerald and Charleen Bier
111380 N. Via Montessori Drive
Fresno 93730

From:	Dee
To:	Randall , David A.
Subject:	CEMEX expansion-We oppose!
Date:	Tuesday, March 4, 2025 3:47:39 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good afternoon,

As a citizen of the San Joaquin Valley, I strongly oppose and urge you to move to end the expansion of CEMEX. This project will impact San Joaquin River and is extremely harmful to our environment, putting fish and wildlife in the area at risk and threatening our water quality. We, the people of San Joaquin Valley, do not want this for our environment and will hold local leadership accountable for the generational impacts and damage on our valley's endangered habitats and resources.

Comment 239-1

-Dalessi M.

From:	RON DARNELL
To:	Randall , David A.
Subject:	Cemex 600" deep pit
Date:	Tuesday, March 4, 2025 3:54:44 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I am very familiar with blasting in open pit mines in the coal mines in New Mexico, Arizona, Utah, and Colorado. I was in a service truck for Cummins Rocky Mountain and served the oil fields in the San Jaun Basin and multiple open pit coal mines in 4 states around the 4 Corners area. Comment 240-1

It required radio silence for 15 min the whole mine property before a blast. These mines were very remote. I would have concerns of radio frequency causing detonation near a population like ours along with issues to the city water wells on the north side of town. Water seepage from the San Joaquin River is another concern. Comment 240-2

Now the biggest concern is semi truck traffic.

Vulcan in Sanger sends out up to 1600 trucks daily from a smaller mine. Friant Rd cannot handle that kind of traffic, esp. During rush hour traffic when truck traffic would be the heaviest. Comment 240-3

How many trucks would they be able to load daily? Who will maintain Friant Road? Comment(s) 240-3 & 240-4

With blasting, is there possibly of fracturing the hardpan all the homes in N. Fresno are built on? Comment 240-5

Why do they need to mine that big of a hole that close to town? When Vulcan ran out of materials they relocated to where the hard rock is very shallow at Hwys 41/145. They are not near any homes or in a fragile river system. Comment 240-6

Cemex needs to do the same as Vulcan.

Hwy 41 is much better prepared to handle the heavy truck traffic and we can avoid future water well issues if Cemex is not next to town.

Ron Darnell
10686 Spanish Bay Drive
Fresno Ca 93730
(559)577-4939

Yahoo Mail - Email Simplified

From: e.dostal@comcast.net
To: Randall , David A.
Cc: sweaver@riverparkway.org
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Tuesday, March 4, 2025 9:30:10 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior Planner
County of Fresno
Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. Comment 241-1

1. Impacts on the San Joaquin River Watershed. This will have a devastating effect on our precious river resource.

2. Air Quality and Dust Emissions. Air quality in the Central Valley is a vicious problem that will be exacerbated by this project. Comment 241-2

3. Biological Resource Impacts. Our fisheries can not withstand the impact of this project. Comment 241-3

4. Traffic and Noise Concerns. There is already too much congestion in the area. We don't need to make it worse. Comment 241-4

5. Cumulative Environmental Effects. CEMEX is a Mexican company. Send them back to Mexico to destroy the environment there. We don't want it here in California. Comment 241-5

Comment 241-6

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,
Ed Dostal

From:	John Edwards
To:	Randall , David A.
Subject:	Cemex expansion Draft Environmental Impact Report
Date:	Tuesday, March 4, 2025 10:15:09 AM

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Report Suspicious

Comment
242-1

I can't believe that this expansion is being considered.
Deep pit mining and hard rock blasting.
Terrible for the San Joaquin river.
Please don't approve.
Sent from my Verizon, Samsung Galaxy smartphoneI
Get Outlook for Android

From:	Ray Falkenberg
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR
Date:	Tuesday, March 4, 2025 4:42:51 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr Randall,

I am writing to voice my opposition of the above subject project.

The draft EIR does not adequately address the impact of this project because it is impossible for any planner or forecaster to project over that extraordinary long period of time. 100 years! That, in itself, should disqualify any consideration of this proposal.

Comment 243-1

Furthermore, blasting a 600 foot deep mining pit within a relatively few feet of the San Joaquin River, where the State of California has created the San Joaquin River Conservancy, is inconsistent with the mission of the Conservancy. The impact of mining vs. blasting is not adequately addressed in the EIR.

Comment 243-2

Thank you for consideration of my comments, inasmuch as I am concerned about the negative impact of this expansion project, as a resident of the City of Fresno and Fresno County.

Sincerely,

Don R. Falkenberg
546 E. Richmond Ave.
Fresno, California 93720

From:	Janice Ferrell
To:	Randall , David A.
Subject:	Re Fresno CEMEX Mining At The San Joaquin River
Date:	Tuesday, March 4, 2025 3:03:28 PM
Importance:	High

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hello David,

I Am Fresno County Resident, And Read Your Postcard, And Read This Fresno residents must rally against CEMEX blast mining plan | Fresno Bee

Comment 244-1

Regarding The Mining Extension, Proposed For The San Joaquin

River. I Strongly Disagree With Any Mining, Or Digging There, Due To

Fact That Will Weaken, And Make The Ground Unstable, And Because

There Is An Earthquake Fault Near There, That Produces 6.3 To 6.7

Magnitude Earthquakes.

Please Reject This Proposed Project, Right Away!!!

Janice Ferrell

From:	AT&T Yahoo Mail
To:	Randall , David A.
Subject:	CEMEX 100 more years
Date:	Tuesday, March 4, 2025 3:31:53 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Please do NOT allow hard rock blasting and a crater of 600 feet deep mining pit. Too much noise, dust and destruction of our our San Joaquin river bed. Please DO NOT harm our environment any more than has already been allowed.
Please say NO to this expansion.

Comment 245-1

Alberta Ferrer 1439 E. Decatur Ave. Fresno, CA.

From:	Laurell Huber
To:	Randall , David A.
Subject:	San Joaquin River Mining
Date:	Tuesday, March 4, 2025 4:44:34 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. Randall

I believe the proposed mining project along the San Joaquin River should definitely not be pursued.

Comment 246-1

A concerned senior citizen and life-long Fresno resident,
Laurell Huber

Sent from my iPad

From: 0/22
To: Randall , David A.
Subject: Proposed CEMEX expansion
Date: Tuesday, March 4, 2025 12:27:23 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. Randall,

As lifetime Fresno County residents, we were are totally AGAINST the proposed expansion of the CEMEX project currently before the county administration. The expansion flies in the face of Fresno city and county residents' ongoing work to complete the San Joaquin River Parkway, not to mention its effect on water, fish, wild life, roads, and residents living near the business. The only way to mitigate the effects of blasting near the San Joaquin River would have been to NOT approve it in the first place. Who in Fresno County will hold CEMEX's feet to the fire when the environmental plan is not adhered to and necessary mitigation not followed? The many identified potential issues and problems necessitating mitigation in the plan are so numerous to be almost laughable if violations weren't so potentially disastrous. Is this draft tough enough ??

Comment 247-1

Comment 247-2

Comment 247-3

Brad & Kristi Hushaw

From: Sue Karibian
To: Randall , David A.
Subject: Cemex
Date: Tuesday, March 4, 2025 2:46:22 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Please save the San Joaquin River from Cemex. Please!!!!!

Comment
248-1

March 4, 2025

Dave Randall, Senior Planner
County of Fresno
Dept. of Public Works and Planning
Sent VIA EMAIL

Comment 249-1

I am writing to oppose the CEMEX Rockfield Modification Project (EIR 7763), and Conditional Use Permit Applications 3666 and 3667.

The California Geological Survey Map Sheet 52 provides information about the availability of and future demand for California's already permitted aggregate reserves. The 2018 update, the most recent available, indicates that the Fresno Production-Consumption Area has already permitted far more aggregate reserves for mining than this area's projected need. Here's the CGS Map Sheet 52 projection for the Fresno area:

CALIFORNIA GEOLOGICAL SURVEY MS 52

Table 1. Comparison of 50-Year Demand to Permitted Aggregate Reserves for Aggregate Study Areas as of January 1, 2017.

AGGREGATE STUDY AREA[1]	50-Year Demand (million tons)	Permitted Aggregate Reserves (million tons)	Permitted Aggregate Reserves Compared to 50-Year Demand (percent)	Projected Years Remaining
Bakersfield P-C Region	338	1,708	505	More than 50
Barstow-Victorville P-C Region	163	117	72	31 to 40
Claremont-Upland P-C Region	202	90	45	21 to 30
El Dorado County	82	15	18	11 to 20
Fresno P-C Region	305	556	182	More than 50
Glenn County	41	22	54	21 to 30
Merced County	151	61	40	21 to 30

Since our area has already permitted aggregate reserves equal to 182% of projected needs through 2066, there is no justification for the continued destruction of the Fresno side of the San Joaquin River from aggregate mining. This mining operation should be be halted immediately, and prohibited from continuing and expanding in the future.

Sincerely,

Marianne Kast
5110 N. Fruit Ave. #109
Fresno, CA. 93711

From:	Kathryn Kelly
To:	Randall , David A.
Subject:	Opposition to Big Drilling Expansion
Date:	Tuesday, March 4, 2025 9:13:20 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall,

Please do not cause new harm to the San Joaquin River with the CEMEX expansion. By rejecting this project, we can keep our wildlife and fish safe by protecting our water quality for generations to come.

Comment 250-1

Thank you,
Kathryn Kelly

From: June Kezerian
To: Randall , David A.
Subject: Per CEMEX expansion: I am against this expansion as it is a detriment to the surrounding environment
Date: Tuesday, March 4, 2025 2:30:30 PM

Comment 251-1

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

From: Emily Kuizenga
To: Randall , David A.
Subject: CEMEX Rockfield Expansion Project
Date: Wednesday, March 5, 2025 9:07:16 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 5, 2025
David Randall, Senior PlannerCounty of FresnoFresno, CA
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Dear Mr. Randall,

Comment 252-1

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

1. Impacts on the San Joaquin River WatershedI am very concerned about the idea of blasting rock from the delicate San Joaquin River bottom. This is an incredibly crucial part of our valley's eco-system and introducing heavy machinery and blasting away rock will ruin habitat for native animals, create sound pollution, and interfere with the aesthetics of the area.

Comment 252-2

2. Air Quality and Dust EmissionsThe amount of dust that will be created from blasting rock can not be helpful for our community. We have enough difficulties maintaining air quality as it is in the Central Valley and should avoid any additional emissions that can be controlled.

Comment 252-3

3. Cumulative Environmental EffectsThe delicate habitats of owls, native birds, and turtles will be disturbed as will the overall stability of the earth near the site. The impacts of such a major disturbance to the landscape can not be fully known and I am very concerned about the potential for ecological destruction in such a sensitive area.

Comment 252-4

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,Emily KuizengaFresno Resident

From: Kathryn Lemon
To: Randall , David A.
Subject: Cemex expansion
Date: Tuesday, March 4, 2025 8:25:35 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I am writing to voice my opposition to allowing Cemex to continue mining . The San Joaquin River has become a jewel for the valley. Families from across the valley enjoy the river. Please don't destroy what has taken decades to rebuild.

Comment 253-1

Thank you
Kathy LeMon
Sent from my iPhone

From:	Mary Ann Martinez
To:	Randall , David A.
Subject:	CEMEX Expansion Draft Environmental Impact Report
Date:	Tuesday, March 4, 2025 1:22:47 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. Randall,

This is to let you know that I am OPPOSED to the CEMEX expansion. It will allow 100 more years of mining, create a 600 foot deep mining pit which would greatly damage Millerton Lake area, and change the mining type to hard rock blasting. Please refuse approval of this expansion. It would be an environmental disaster in my opinion.

Comment 254-1

Mary Ann Garvey Martinez
9844 N Sedona Cir
Fresno, CA 93720

From:	Rebecca Mendoza
To:	Randall , David A.
Subject:	San Joaquin River concerns
Date:	Tuesday, March 4, 2025 7:26:37 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good afternoon,

I received a notice that mentioned a project for CEMEX expansion. I am concerned about the impact on the San Joaquin River and the environment as a whole. Can you address the impact hard rock blasting would have on wildlife?

Comment 255-1

Thank you for your time.

Thank you,

Rebecca

From: Lynn Quinn
To: Randall , David A.
Subject: Cemex Expansion
Date: Tuesday, March 4, 2025 2:27:31 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr Randall:

I am writing to ask you NOT to approve the proposed CEMEX expansion! Comment 256-1

I live near by and I am a hiker who utilizes the area near the Cemex Plant. I would like to preserve the San Joaquin River and the surrounding area. After many years of hard work, the river is doing much better. Let us preserve that progress for everyone to enjoy.

The proposed expansion with one hundred years of continued mining is a very long time! A deep pit mine utilizing hard rock blasting will have drastic and deleterious effects on the surrounding wild area. Please do not approve this proposal! Comment 256-2

Thank you!

Lynn Quinn

From:	Molly Schnur
To:	Randall , David A.
Subject:	CEMEX Expansión Is a Bad Idea
Date:	Tuesday, March 4, 2025 7:14:15 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David,

The expansion of and changes to mining “along” the San Joaquin River will have devastating results for the river, riparian areas, effects on the groundwater table, and set the precedent for the continued exploitation of Fresno’s first and best resource- the river.

Comment 257-1

There are many times when I find myself speaking with people who don’t realize there IS a river here, running through and creating the border between Fresno and Madera. Many people don’t realize that without that river, neither city would be here. It is only because of it that the community itself exists.

The proposed extension/deepening to the existing mining site off of Friant Road will disturb the water table and natural connectivity to the river, create further obstacles to the public in accessing the river, and continue to be a nuisance to those who regularly use Friant Rd (show me a person who uses that stretch of road who HASN’T had a windshield nick or crack from gravel flying off a truck- I’ve had 3).

Comment(s) 257-2 257-3 257-4

More importantly, it is the ultimate act of giving priority to money over the general benefits to the community. It’s a case where “who knows?, it could be fine,” feels like the first line response from the people who are supposed to be acting on our behalves.

Comment 257-5

Believe in this instead: this river gave use to the land, created our cities, and has allowed us to stay. Let’s repay the respect.

Sincerely,

Molly Schnur-Salimbene
Modern Hippie, Naturalist

From:	Amanda Schoelen
To:	Randall , David A.
Subject:	Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report
Date:	Tuesday, March 4, 2025 9:11:13 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am writing to express and record my opposition to the proposed 100-year permit for the CEMEX mining operation and challenge the adequacy of the Draft EIR prepared and submitted for this particular project. As currently drafted, the EIR does not assess the environmental, ecological, and community impacts that this 100-year timeline will have on the San Joaquin River and surrounding areas deeply enough.

Comment 258-1

As an amateur naturalist, outdoor recreation enthusiast and avid birder, I find that the EIR fails to adequately address my concerns:

<!--[if !supportLists]-->1. <!--[endif]-->safeguarding our biological resources here in Fresno County. The search area is not adequate to identify species of special status, likely mischaracterizes a habitat that would be subject to the CA Fish and Game Code, and does not have adequate analysis of the potential effect on threatened Swainson's hawk

<!--[if !supportLists]-->2. <!--[endif]-->Air Quality and environmental effects on health of human residents and recreationists. Project emissions may exceed acceptable cancer risk thresholds.

<!--[if !supportLists]-->3. <!--[endif]-->100 years is much too long a period to adequately assess future risks in our rapidly changing culture, political system and climate.

A project of this scale and duration requires a far more comprehensive environmental review that includes thorough scientific analysis, long-term cumulative impact assessments, and meaningful mitigation strategies. The EIR, as it stands, does not meet these standards, and I urge Fresno County to require revisions that fully account for the long-term consequences of extending CEMEX's mining operations. Our responsibility to our community requires us to consider extractive projects with the high potential for harm carefully and with an eye on all the factors at play, not just the growth of industry.

I request that the Planning Department reconsider this permit in light of the

inadequacies of the EIR and demand a more thorough environmental review before any decisions are made. I believe that we can do better.

Thank you for your time and consideration.

Sincerely,

Amanda King

From:	Judy Simon
To:	Randall , David A.
Subject:	Mining
Date:	Tuesday, March 4, 2025 4:21:58 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

CEMEX should NOT be allowed to create new harm by mining in in county!

Comment 259-1

Judy Simon
707 272 1457

From:	Kelty Spencer
To:	Randall , David A.
Subject:	Oppose Cemex Expansion
Date:	Tuesday, March 4, 2025 1:57:17 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hello David,

I am emailing to strongly oppose the CEMEX expansion. Fresno has so little green space as it is I cannot believe this expansion would be pushed through. 100 more years of mining would impact generations of Fresno's citizens, and due to the change in mining type it threatens water quality and impacts fish and wildlife. Fresno, and the surrounding communities, do not want this.

Comment 260-1

Comment 260-2

Thank you,
Kelty Spencer

From:	ROGER STEWART
To:	Randall , David A.
Subject:	Cemex Expansion
Date:	Tuesday, March 4, 2025 1:33:22 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. Randall:

I oppose the proposed expansion because (a) the support for a current and future need for the gravel is weak; (b) there is adequate current supply, and almost limitless untapped supply, in several local counties; (c) the San Joaquin River is a unique feature of this part of California and would be irreparably damaged if the Cemex expansion is allowed to proceed.

Roger Stewart

Comment 261-1

From: AT&T ONLINE SERVICE
To: Randall , David A.
Subject: CEMEX EXPANSION
Date: Tuesday, March 4, 2025 6:44:03 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 262-1

I live at Woodward Lakes, and I am against the following CEMEX is proposing:
- 100 more years of mining
- Creating a 600-foot-deep mining pit
- Changing the mining type to hard rock blasting. This will threaten the water quality and impact the fish and wildlife of the San Joaquin River and the surrounding areas of the river bottom.

This is NOT acceptable for our quality of life but also it will impact and harm the San Joaquin River. There is NO need for CEMEX to expand/change their current operation. I believe they make more than enough profits for their current operation, but as a company they want more profit. This is greed. DO NOT APPROVE!

Woodward Lakes Resident

From:	John Zweifler
To:	Randall , David A.
Subject:	Public Comment on Cemex Expansion
Date:	Tuesday, March 4, 2025 5:40:33 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 263-1

I am writing to express my strong opposition to the proposed creation of a 600 foot mine in the San Joaquin River bottom with excavation rights for the next 100 years! I have two major objections. My first objection is that the proposed site sits next to and separates some of the nicest parkland in Fresno County. There is Woodward Park on one side, and Lost Lake and Millerton Lake on the other, not to mention Ball Ranch. Fresno has precious little natural habitat of any kind, let along natural habitat that is publicly accessible- we should do everything we can to optimize what we have, such as constructing walking and bicycle pathways and trails along this section of the San Joaquin River similar to what has been done in other communities such as Sacramento. This would greatly improve the ambience of Fresno and make it a much more attractive destination for visitors and for those considering relocation, as well as preserve the unique and very limited habitat along this beautiful river. The dollar value and the positive impact on the mental and physical health of our community of creating a vibrant pathway along the San Joaquin River would far outweigh the incremental savings that might be achieved with this mine. Instead of becoming a magnet for visitors and residents, the proposed 600 foot mine would be a construction zone eyesore, reinforcing negative stereotypes regarding short-sighted planning, deference to developers, and lack of consideration for quality of life.

Comment 263-2

My other concern is regarding the long-term consequences of blasting a 600 foot mine by a river. You could argue that water is the most valuable resource we have- or dont have. What would it take to mitigate the damage done by blowing up land 600 feet down- the potential to disrupt water tables, contribute to ground water pollution, and other consequences we can only imagine? What would the cost be to return the earth to its natural state before it was ripped apart by this proposed mine? Can we even calculate what that cost would be?

Lets recognize the value we have right here in Fresno and preserve and honor the San Joaquin River by turning it into a parkway, not a parking lot.

John Zweifler
556 East Chesapeake Circle
Fresno, California Cell-text 559-779-4227

From: Loren Alving
To: Randall , David A.
Cc: sweaver@riverparkway.org
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Wednesday, March 5, 2025 1:06:28 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior Planner
County of Fresno
Fresno, CA

Dear David,

Comment 264-1

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, **I have several concerns that I urge you to address** prior to moving forward with approval.

1. Impacts on the San Joaquin River Watershed: It goes without saying that the quality of the SJ River Watershed will be further degraded with this expansion of mining. This watershed is crucial to the health of the local environment and important to the wellbeing of its citizens. One example: Lowering of the water table and the impact on residential owners in the vicinity has not been addressed. These owners should be monetarily shielded from the effects of this project before the project begins.

2. Air Quality and Dust Emissions: Dust and emissions are already a problem and will be getting worse. Currently, Fresno air quality is the worst or close to the worst in the nation and small particulate matter is extremely hazardous to human health; blasting will contribute significantly to that.

3. Biological Resource Impacts: The SJ River Watershed is home to many different species of animals and plants. These communities will undergo huge disruption and suffer severe consequences. The switch to hard rock blasting will threaten water quality and have severe consequences on fish and wildlife.

4. Traffic and Noise Concerns: There are already too many mining trucks on the road ways, increasing traffic (moving very slowly on the on ramps to the freeway and causing backup and near accidents daily especially when they are allowed to enter 41 during rush hours with meters on the ramps). This will only increase them. Additionally, it does not appear that in their analysis they have evaluated the impacts of blasting to users of the nearby park or the disturbance to nearby residents. Blasting will have major impacts on quality of life for nearby residents and their analysis barely addressed this.

5. Cumulative Environmental Effects: this new mining operation will create a massive pit in the SJV River, 600 ft deep and the size of a 43 story skyscraper. And, the most worrisome aspect of all: this project will allow 100 more years of mining. There is no reason to tie our

community and our natural environment up for 100 years…

Given these concerns, **I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives**. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

I would ask you to not approve this project on the basis of its environmental impact and to make sure that all the environmental concerns are addressed in any updated proposal.

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,

Loren Alving

From:	Penelope
To:	Randall , David A.
Subject:	CEMEX River Expansion Project
Date:	Wednesday, March 5, 2025 7:38:09 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. Randall,

CEMEX's proposal is an atrocity against Fresno's greatest natural resource, already scarred by a century of gravel mining the company previously agreed to wind down, and should have been rejected point blank. Undeterred, county planners and hired guns spent five years working to sidestep urgent issues and fool the public, urging modifications to the proposal put forward by CEMEX, a wealthy international corporation. Comment 265-2

Modification? They want to dynamite hundreds of feet below ground in close proximity to one of the country's most endangered rivers.

Do not allow this unnecessary project to go forward.

Some of the negative effects of this expansion are: further endangering the Salmon that bravely endure historical injury to the river. Impacts on wildlife habitat, water quality, air pollution, noise pollution, groundwater depletion, and cumulative environmental impacts, Comment 265-2

Fresno County has enough aggregate resources available without letting CEMEX have its Comment 265-3

way in our precious valley.

Comment
265-3 Cont.

Sincerely, Penelope Critchlow, PO Box 460, North Fork, CA 93643

From: Robert Crooks
To: Randall , David A.
Subject: Cemex Expansion
Date: Wednesday, March 5, 2025 3:52:33 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I object to the proposed Cemex expansion. The River is an unbelievable natural resource that should not be impinged upon any more than it already has. Right now you can kayak or canoe from Friant to Fresno without becoming aware that you are in a near urban corridor. There is no traffic noise and little sign of human development along the way EXCEPT passing the Cemex plant. In that area there is a constant rumbling of industrial activity. I fear that if the expansion is approved and blasting is used to mine the rock there will be even more noise and probable disturbance of wildlife. In particular there are two large heron rookeries, at least one bald eagle nest and a large population of ducks and geese along this stretch or river. I don't know about the salmon restoration project but the impact on this multi-million dollar project should be considered as well. Cemex should find somewhere else to establish a mine. Please do not approve this project.
Robert Crooks
Friant, CA

Comment 266-1

Comment 266-2

Comment 266-3

Comment 266-4

From: Ron Darnell
To: Randall , David A.
Subject: Cemex Rockfield permit
Date: Wednesday, March 5, 2025 7:18:48 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 267-1
Cemex has deep pockets and MANY rather questionable environmental, MSHA, & OSHA violations, totalling over $53 million in the last 25 years.

Comment 267-2
Is the City of Fresno in agreement or denial of a permit?
What organizations are against it?

Comment 267-3
It's time they let the riverbottom heal from 100 yrs of abuse.

Comment 267-4
How many acres would a 600' deep pit need?
How would a 600' pic reclamation?
What are their plans to get rid of all water they have to pump from the hole?
There are a lot more questions than answers.

Comment 267-5
Has there been an environmental impact survey done?
If so, by what company?

From:	David DeFrank
To:	Randall , David A.
Cc:	Molly DeFrank
Subject:	Comment on CEMEX expansion project
Date:	Wednesday, March 5, 2025 10:16:54 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hello,

I live in Friant and take my dog on walks at Lost Lake park multiple times per week. We love the beauty and wildlife present there. Changing the mining type at the CEMEX site to hard rock blasting threatens impacts to fish and wildlife in the area. It's not worth it. Comment 268-1

I am also concerned about the project's effects on the water table and water quality. I have a residential well very close to the site. It provides drinking water for my family, including young children. If this project is approved, CEMEX should be required to undertake substantial mitigation measures to ensure there are zero impacts to the water table, water quality or water quantity. Comment 268-2

Thank you,

David DeFrank

From: deblynndooley@comcast.net
To: Randall , David A.
Subject: CEMEX Rockfield Draft EIR
Date: Wednesday, March 5, 2025 1:41:02 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David,

I am deeply concerned about the proposed CEMEX Rockfield Expansion project. I would appreciate your consideration of the following negative impacts this project would have on our environment and community. Comment 269-1

1. The proposed 600 ft hole will create an unacceptable scar to the San Joaquin River bottom, and possibly damage the river itself. This is a risk that cannot be justified.

2. CEMEX proposes to change from the digging of sand and gravel to blasting hard rock and crushing it into gravel. This change will cause noise pollution and dust emissions. All nearby life (people and animals) will be negatively affected. Would you want to live near all of this noise and dust? I certainly would not. Comment 269-2

3. Granting a 100 year extension is, in my opinion, irresponsible and ill advised. Comment 269-3

Thank you for your consideration of my concerns in this matter.

Sincerely,

Debra Dooley

From:	Magda Gilewicz
To:	Randall , David A.
Subject:	Don"t extend Cemex lease!
Date:	Wednesday, March 5, 2025 12:27:21 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 270-1

Dear Mr Randall:
I'm writing to strongly oppose the extension for another 100 years of Cemex's rights to mine along the San Joaquin River.

With the City of Fresno expanding further north and east swallowing more and more open, green spaces, the presence of the enormous mining pit in one of very few undeveloped areas along the river is very undesirable. The whole area occupied by Cemex should be available for use by the half million population of the city, not for monetary exploitation by a multinational company.

A hundred years ago that spot was miles away from the city; now we have a huge industrial hole that will be even larger, if allowed, right where thousands of Fresnans could go for recreation. Instead, if the lease is extended, we will suffer from more air and noise pollution, face the danger of having our river contaminated and deal with the huge industrial blight where we could all have access to recreational land.

Allowing another 100-year lease will impact several future generations and deprive us all of access to undeveloped areas along the river. There's no room for that kind of industrial operation in the city any longer. Don't extend the lease!

Magda Gilewicz
Fresno resident
4654 N. Farris Ave

From:	Flannery Good
To:	Randall , David A.
Subject:	CEMEX Rockfield Expansion Project
Date:	Wednesday, March 5, 2025 3:28:43 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 5, 2025

David Randall, Senior PlannerCounty of FresnoFresno, CA Subject: Comments on CEMEX Rockfield Expansion Project DEIR Dear David,I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. 1. Impacts on the San Joaquin River Watershed 2. Air Quality and Dust Emissions 3. Biological Resource Impacts 4. Traffic and Noise Concerns 5. Cumulative Environmental Effects Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Comment 271-1

Comment 271-2

Sincerely,Flannery Good

Flannery Good
1429 W Big Sandy Road
Fresno, CA 93711

From: Robert Greteman
To: Randall , David A.
Subject: CEMEX expansion
Date: Wednesday, March 5, 2025 11:49:39 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I am very much opposed to CEMEX expansion. The San Joaquin riverbed and surrounding area should be protected from the pollution, noise and damage to the environment. I am also very tired of the endless trucks barreling down Friant Road constantly.

Comment 272-1

Comment 272-2

Randi Greteman

From:	Robert Heisdorf
To:	Randall , David A.
Subject:	Objection to CEMEX Expansion that would case new harm to the San Joaquin River
Date:	Wednesday, March 5, 2025 3:40:37 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall:
I am writing to object to any planning for expansion by CEMEX in & around the San Joaquin River. Comment 273-1
I object for a number of reasons to any expansion by CEMEX to harm our river further.

Please do not approve, or allow this project to go forward any further.

Yours,
Robert Heisdorf
HeisdorfR@gmail.com

From: David Horwitz
To: Randall , David A.
Subject: Considerations on Fresno County Cemex Proposal
Date: Wednesday, March 5, 2025 11:08:10 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

To Mr. Randall,

I am writing as a resident of Fresno, about the Cemex expansion to mine the San Joaquin River for 100 years, going 600 feet deep. This would not be without consequences for the entire region, not to mention the state's riparian corridors enabling the water the river supplies to recharge the local aquifers. While the San Joaquin River doesn't contribute directly to the Fresno Aquifer, indirectly, it acts as a riparian woodland cloud seeder, as the trees release water transpiring from their stomata, conglomerated with beneficial to plant fungal spores, dust, and pollutants, that act as cloud seeders, nucleating water molecules to form together and create rainfall downwind, which since the Sierras are right next to us, also rebuttals that rainfall onto farmers, gardeners, and recharge basins for the aquifers here around Fresno on the Valley floor. Blast mining 600 feet deep, or the equivalent of two football fields, will destroy the groundwater supply for the native riparian woodland trees that indirectly supply our region with water, including our endemic Valley Oaks, which are losing habitat at alarming rates.

Comment 274-1

Add to this the simile for mining building materials, fracking, and earthquakes are not an impossibility, especially given California already has multiple fault zones. All we need is deep perturbations in a sensitive area, and Fresno County could become another earthquake hotspot.

Comment 274-2

Then, there is agriculture. East side farmers along the San Joaquin River, and more western SJR farmers as well, rely on clean irrigation water, directly pumped from the river by riparian rights, or indirectly from adjacent groundwater, for their crops. This project would be an existential death trap for these farmers, polluting their water supply and decimating their irrigation baseline for their incomes.

Comment 274-3

The stated reason for this mining is the region's growth occurring will need infrastructure material for building. Yet Vulcan Mining, a competitor of Cemex, already has provisioned this region with enough mining materials for the next century. Also, Cemex's previous mining on the river has only added to that. More is not even a necessity to begin with.

Comment 274-4

Also, the San Joaquin River is a water supply for human needs like clean water, fishing, and mental uplift from natural ecosystems, termed biophilia in psychology, literally, “love of life”. Truly, those of us who love life, all life, both human and non-human, love the San Joaquin River. Comment 274-5

While not a certainty, sinkholes have been known to arise in coal and gold mining operations of much less depth of extraction, so they might also arise here. It is known when mining hundreds of feet deep in area, especially watery areas, that sometimes, due to extreme subsidence, sink holes can emerge, and sometimes not even on the site of mining, but in subterranean cavities beneath adjacent urban areas that connect to riparian areas. This would spell disaster for many north Fresno residents should it commence, which 100 years and 600 feet deep; that ensures it is a possibility Comment 274-6

Lastly, air pollution from the many diesel trucks and machinery handling drilled materials and doing the drilling, day in and day out for 100 years, is going to total the health of the region’s residents. We already have some of the worst air pollution in the San Joaquin Valley. This would intensify and enhance that by multitudes. Too many residents suffer from severe air pollution industrial chemical allergies from automobile exhaust, not to mention some chemicals in farms and lawns and homes and gardens. This would forever damage the quality of life for the region, given the sheer volume of diesel fueled truck traffic transporting materials, and the mining offputs themselves. Comment 274-7

Simply put, I know this project must be terminated if the Central Valley is to survive economically and environmentally. Agriculture is a huge portion of the economy, and losing ecosystem services like available clean water, and pest predators from riparian native species, would be a loss for the regional farming community. Environmentally, the very citizens of Fresno County are endangered by the destruction that will ensue. This project must be stopped. The costs, both financial and existential, ultimately will outweigh any short-term benefits Cemex promised. Comment 274-8

Sincerely,

David M. Horwitz (Fresno resident and long-term supporter of conserving the SJ River)

.

From: Elaine Johnson
To: Randall , David A.
Subject: Re: CEMAX Expansion
Date: Wednesday, March 5, 2025 1:59:55 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Rereading my original letter I find important mistake! Last paragraph should read " SHOULD NOT be selling," not "should".
Sent from my iPhone

On Mar 5, 2025, at 12:43 PM, Randall , David A. <drandall@fresnocountyca.gov> wrote:

Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

<image001.jpg>

David Randall | Senior Planner
Department of Public Works and Planning |
Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4497 Direct: (559) 600-4052
Your input matters! Customer Service Survey

Comment 275-1

From: Elaine Johnson <ejandaj@aol.com>
Sent: Tuesday, March 4, 2025 10:30 AM
To: Randall , David A. <drandall@fresnocountyca.gov>
Subject: CEMAX Expansion

It has come to my attention that CEMAX has plans to expand their work in our San Joaquin River bottom.

How in the world can we even think of allowing this dis-spoilage of our precious river practically in the city of Fresno.

Our way of life will not allow this blasting, this ruin right in the back yard of our city. We should be planning of the beautification of our river, not this.

100 years out? No! For money? No!

This is the river for all of us and we should be selling our beautiful landscape and the peace that comes with it for any amount of money.

Elaine Johnson
278A E. Barstow
Fresno 93710

From:	Patty Kanemoto
To:	Randall , David A.
Subject:	CEMEX Expansion
Date:	Wednesday, March 5, 2025 12:59:48 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I am concerned about the expansion of CEMEX operations as proposed. I reviewed the EIR and ultimately, I am left with a lot of concern in the areas of slope stability, air pollution, blasting, water quality and groundwater supply. While there are mitigations stated, there is always the risk of an "accident" or it could be that we find a breach a little too late for the damage that might have already occured. The consequences of material flowing down the river are too great and the consequences to the environment would be too grave. Also of great concern, is the depth of mining at 600 feet.

Comment 276-1

Comment 276-2

Comment 276-3

We already live in an area with poor air quality. It is time to put the brakes on adding more air pollution in future years. To commit to this endeavor for another 100 years is unimaginable.

Comment 276-4, 276-5

I am opposed to this expansion in totality.

Patty Kanemoto

From: mskeir@comcast.net
To: Randall , David A.
Subject: CEMEX expansion
Date: Wednesday, March 5, 2025 2:11:49 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am writing to you as a concerned citizen, mother, and grandmother. I am asking you not to allow the expansion of CEMEX. We have very few natural waterways in our county. In addition to contributing to poor air quality by dust created and increased traffic along the Friant roadway, this expansion would threaten water quality and impact fish and wildlife.

Our San Joaquin River is a wonderful resource that we must protect for future generations. School children from around the county are able to explore nature that they rarely experience. Please do not allow this expansion that would only contribute to the detriment of our environment that many are trying so hard to preserve.

Sincerely,
Marjorie Keir

Comment 277-1

Comment 277-2

Comment 277-3

From:	ANN LEWIS
To:	Randall , David A.
Subject:	Long term
Date:	Wednesday, March 5, 2025 4:39:51 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

To Whom It May Concern:

Comment 278-1

The San Joaquin River is such an overlooked natural resource for the county, city and state!
Please, do not allow this permit to proceed.
Future generations will thank you as they enjoy and celebrate the fauna and flora which will thrive there. The undisturbed, continuous river will attract visitors and new residents and businesses. The town of Friant will also prosper.

Thank you for your consideration.
Respectfully yours,

Ann M. Lewis
8829 N.6th St.
Fresno, CA

From:	Dylan Lewis
To:	Randall , David A.
Cc:	jerry.dyer@fresno.gov
Subject:	Opposition to the CEMEX Rockfield Expansion Project
Date:	Wednesday, March 5, 2025 12:08:58 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Fresno County Senior Planner David Randall,

I am writing to express my strong opposition to the CEMEX Rockfield Expansion Project. This area, once home to Native American communities, is a natural gem that should be preserved for public use—not subjected to another century of industrial exploitation.

Comment 279-1

For over 100 years, this land has been used for concrete production, and now CEMEX wants to extend its operations for another century, further degrading the San Joaquin River and surrounding environment. The project's own environmental report acknowledges serious risks, including potential cancer-causing emissions, threats to wildlife, and dangers to water resources. Meanwhile, the public is expected to wait 100 more years before reclaiming any of this land—why should we accept that?

Comment 279-2

Fresno would benefit far more from accessible riverfront development. Imagine a vibrant riverwalk, similar to those in major cities, with restaurants, shops, and recreation areas—a space for families, businesses, and tourism. Instead, this plan offers us a hazardous mining pit.

Comment 279-3

I urge you to reject this expansion and prioritize a future that benefits the people of Fresno, not just a concrete company's profits. Let's invest in a vision that enhances our city, not poisons it.

Comment 279-4

A lifelong Fresno Resident,

Dylan Lewis

From: Izzie Lopez
To: Randall , David A.
Subject: Respectful request:
Date: Wednesday, March 5, 2025 7:37:55 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I disapprove of CEMEX expansion and hope you can find a less destructive way to achieve your goals.

Comment 280-1

Thank you
H. Lopez
Coarsegold, CA 93614

From: DOUG MARSH
To: Randall , David A.
Subject: EIR CEMEX
Date: Wednesday, March 5, 2025 8:16:50 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I am gravely concerned of the adverse impact the CEMEX project will have on the San Joaquin River and the surrounding environment. Please don't allow this project to advance.

Comment 281-1

Douglas Marsh
Fresno, Ca.
Sent from my iPhone

From:	Madison Nield
To:	Randall , David A.
Subject:	Cemex Expansion.
Date:	Wednesday, March 5, 2025 7:23:13 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 282-1

I'm writing today to lodge my protest against the expansion of Cemex mining operations. The proposed activities will negatively impact generations. Our children's ability to enjoy the beautiful nature of what remains of the San Joaquin River area will be destroyed. Trading profit for the destruction of our environment is not a fair trade for any residents. While the Cemex corporation may reap profits, we will suffer. From the environmental destruction to the disruption that will be caused by the blasting, this is not going to benefit any of Fresno's citizens. And I'd hate to think this will be approved because those in power will personally benefit financially while the rest of us suffer. There's too much of that already happening in our country.

Do not allow this plan to go forward!

Ms. Madison Nield
674 E Rock Creek ln
Fresno, CA 93730
559 614 8994

From: Shauna Perenon
To: Randall , David A.
Subject: CEMEX EXPANSION PROJECT
Date: Wednesday, March 5, 2025 11:40:38 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 283-1

Please don't allow the CEMEX project to proceed and ruin the beautiful San Joaquin River . It will ruin much in nature including fish, wildlife and the river we all love and enjoy. There must be another way for this business to find success without destroying what is irreplaceable.

Shauna Perenon

From:	David Roberts
To:	Randall , David A.
Subject:	Cementex
Date:	Wednesday, March 5, 2025 5:14:03 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Roberts
642 East Griffith Way, Fresno, Ca 93704
(559)709-8702

To Whom it may Concern,

Do not approve a 100 year lease for Cementex. Do not further destroy the jewel of Fresno, the San Joaquin River.

Comment 284-1

David Roberts
Sent from my iPhone

From: Mike Saul
To: Randall , David A.
Subject: NO to Cemex expansion
Date: Wednesday, March 5, 2025 12:33:43 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. Randall,

Allowing the expansion of the CEMEX Expansion will be cause long term and irreversible damage to our entire community. Comment 285-1

Hard rock blasting and crushing will create horrendous damage with noise and dust to our neighborhood. It will destroy the serenity of the San Joaquin River Trail. Comment 285-2

That pit will pose a threat to the river and its fish and wildlife. Comment 285-3

This is wrong for our community and threatens to destroy the years of work devoted to restoring the parkway in a city with precious little green space. Comment 285-4

I urge you to stop this.

Dr. George Saul
1660 East Richmond Avenue
Fresno, CA 93720

From:	Gary Simmons
To:	Randall , David A.
Subject:	Opposition to CEMEX Expansion on Friant Road
Date:	Wednesday, March 5, 2025 11:16:07 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David Randall,

Comment 286-1

I am strongly opposed to the proposed CEMEX expansion along Friant Road.

Given our ongoing environmental and water challenges, moving forward with this project seems both unnecessary and detrimental. While I understand the need to responsibly utilize natural resources, this area is no longer a remote wilderness. It is now a thriving and rapidly growing community, home to many families—including mine.

Comment 286-2

Beyond its residential significance, this area stands as one of the most beautiful parts of our city. Expanding industrial operations here would compromise its natural beauty, quality of life, and long-term sustainability.

I urge you to reconsider this proposal in light of these concerns and prioritize the well-being of our community and environment.

Sincerely,
Gary Simmons 405 E Seagull Ct, Fresno, CA 93730

From: Terri Soares
To: Randall , David A.
Subject: Public Comment letter regarding CEMEX Rockfield Expansion Project
Date: Wednesday, March 5, 2025 6:05:34 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Terri Soares
4869 North Harrison Ave 104
Fresno, CA 93704
terrilsoares@gmail.com
559-284-5134
March 5, 2025

David Randall
Senior Planner
Fresno County Department of Public Works and Planning
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: drandall@fresnocountyca.gov

Subject: Opposition to the CEMEX Rockfield Expansion Project

Dear Mr. Randall,

I am writing to express my strong opposition to the proposed CEMEX Rockfield Expansion Project near the San Joaquin River in Fresno County. This proposal raises significant environmental, recreational, and procedural concerns that I believe warrant serious reconsideration.

Comment 286-1

Environmental Concerns

The project entails blasting and drilling a 600-foot-deep pit into the river's bedrock, a method unprecedented along the San Joaquin River. Such extensive mining poses substantial risks to the river's ecosystem, potentially disrupting habitats and affecting water quality. The San Joaquin River has already endured considerable environmental stress due to past developments, and introducing deep-pit mining could exacerbate these issues.

Recreational and Community Impact

The San Joaquin River Parkway has been developed to provide recreational opportunities and preserve natural habitats for the community. The proposed expansion by CEMEX conflicts with this vision, as the industrial nature of deep-pit mining is incompatible with recreational activities and wildlife conservation efforts. Approving this project could undermine years of work dedicated to enhancing the river's value as a community asset.

Comment 286-2

Procedural and Regulatory Issues

It is concerning that the current operations have been allowed to continue under outdated environmental reviews. The lack of a dedicated Environmental Impact Report (EIR) for the existing quarry operations raises questions about the adequacy of oversight and environmental protection. Granting an extension or approval for expansion without a comprehensive, up-to-

Comment 286-3

date EIR contradicts the principles of responsible environmental stewardship and public transparency.

Comment 286-3 Cont.

Conclusion

Comment 286-4

Considering these concerns, I urge the Fresno County Department of Public Works and Planning to reject the CEMEX Rockfield Expansion Project. The potential environmental degradation, conflict with community recreational goals, and procedural shortcomings present compelling reasons to halt this proposal. Protecting the integrity of the San Joaquin River and its surrounding environment should be our priority.

Thank you for considering my comments.

Sincerely,

Terri Soares

Sources: Fresno Bee

From:	Jennifer Squire
To:	Randall , David A.
Subject:	CEMEX Expansion
Date:	Wednesday, March 5, 2025 7:14:07 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Comment 288-1

I am reaching out to express my grave concern about the proposed CEMEX expansion and the significant threats it poses to our environment and democratic principles.

The Draft Environmental Impact Report clearly outlines devastating consequences if this project moves forward, including 100 additional years of mining, the creation of a 600-foot deep pit, and a shift to hard rock blasting.

These actions jeopardize water quality in the San Joaquin River, endanger fish and wildlife populations, and risk irreparable harm to the ecosystem.

The San Joaquin River is a cornerstone of our community, and its preservation is vital for both the environment and future generations.

Comment 288-2

Additionally, this review process is one of the last opportunities for public input to be heard and considered. Protecting our democracy means fostering transparent, participatory decision-making, especially when it comes to projects of such magnitude.

We cannot afford to compromise the democratic process, which ensures decisions reflect the community's best interests.

Comment 288-3

I urge you to prioritize the long-term health of our environment and uphold the integrity of the review process by reconsidering this project. Decisions made today will reverberate for generations to come, and we must act as stewards of both our environment and democratic values.

Thank you for your attention to this urgent matter.

Sincerely,

Mrs. Jennifer Squire
559-723-6505

From: Linda Tiboni
To: Randall , David A.
Subject: Cemex Expansion
Date: Wednesday, March 5, 2025 2:55:45 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 289-1

I am writing to ask you not to approve the proposed Cemex Expansion on the San Joaquin River. This is counter productive and a threat to the river, its wildlife and plant life that the San Joaquin River Parkway Conservation and Trust is trying to preserve. They are not compatible. The Cemex plant where it currently stands should not have been allowed to continue to operate and the new expanded version will desecrate the land further for all who want to enjoy it in all it's beauty now and for generations to come.

For the record I am not a member of the trust but I firmly believe all the area along the river needs to be preserved for the future. Linda Tiboni

Sent from my iPad

From: Kay Pitts
To: Randall , David A.
Subject: Subject line: CEMEX Rockfield Quarry Modification Project EIR
Date: Wednesday, March 5, 2025 4:10:09 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I am concerned about Cemex and their attempt to blast a 600 foot pit next to the San Joaquin River for the following reasons:

Comment 290-1

1. The rock and gravel aren't currently needed. There is plenty but since the sources belong to a different company Cemex would have to purchase materials.
2. Cemex has no interest in our river except greed. There is no benefit to to the river or to Fresno. A foreign company wishing to "take the money and run!"
3. There are four major issues with their plan: air quality, increased traffic, noise and destruction of the scenery.
4. As an artist I'm particularly concerned about the ruining of the scenic value. Cemex plans to "paint the rocks". Perhaps a mural could be painted of what used to be. Brings to mind a Joni Mitchell song, "Big Yellow Taxi"…."You don't know what you've got 'til it's gone."

Comment 290-2

Comment 290-3

Kay Tolladay Pitts
2658 E. Alluvial, #119
Fresno, CA 93720

From: thao xiong
To: Randall , David A.
Subject: CEMEX Rockfield Expansion Project - Public Comment
Date: Wednesday, March 5, 2025 3:30:41 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David Randall,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the urgent need to address the significant potential environmental and community impacts associated with this project, I have several concerns that you should prioritize and address prior to moving forward with approval.

Comment 291-1

1. Impacts on the San Joaquin River Watershed

The proposed mining expansion threatens the integrity of the San Joaquin River, which serves as a vital water source for local communities, agriculture, and wildlife. Excavation and dewatering processes may lower groundwater levels, disrupt the natural hydrology, and contribute to sedimentation and pollution. The river supports sensitive riparian ecosystems, including habitats for migratory birds, fish, and other aquatic species. Any disturbances to the water table could exacerbate drought conditions and harm the broader watershed. The DEIR must provide a more thorough analysis of potential long-term impacts on water flow and quality and enhance mitigation measures to prevent irreversible damage.

2. Air Quality and Dust Emissions

Comment 291-2

The expansion of mining operations will increase particulate matter (PM10 and PM2.5), which can penetrate deep into the lungs and cause or worsen respiratory diseases such as asthma and chronic bronchitis. This poses serious health risks to nearby residents and workers. The fine dust from quarrying, transportation, and processing activities can exacerbate respiratory illnesses, including asthma and other lung conditions. Given that the San Joaquin Valley already suffers from poor air quality and frequent air pollution advisories, the additional emissions from this project could contribute to non-compliance with state and federal air quality standards. The DEIR must ensure that stringent dust control measures, real-time air monitoring, and mitigation strategies are in place to protect public health.

3. Biological Resource Impacts

Comment 291-3

The project site and surrounding areas support diverse wildlife, including special-status species such as the Western pond turtle, Swainson's hawk, and various riparian-dependent species. The planned excavation and land disturbance will fragment habitats, disrupt nesting areas, and eliminate vegetation critical for ecosystem stability. The DEIR must provide a more robust conservation strategy to prevent habitat loss, mitigate species displacement, and ensure compliance with state and federal wildlife protection laws. Additionally, long-term monitoring should be required to assess ecological changes over time.

4. Traffic and Noise Concerns

Comment(s) 291-4 291-5

The project's expanded truck operations will increase congestion along Friant Road, raising safety concerns for local commuters, cyclists, and pedestrians. The addition of heavy-duty vehicles will also contribute to noise pollution, particularly during nighttime operations.

Nearby residents will experience increased exposure to engine noise, blasting vibrations, and other disturbances that could degrade their quality of life. The DEIR should analyze alternative transportation routes, implement stricter operational limits, and require noise-dampening measures to reduce these adverse effects.

Comment 291-5 Cont.

5. Cumulative Environmental Effects

Comment 291-6

This mining expansion is not occurring in isolation—it will exacerbate the cumulative environmental stressors in the region, including climate change, water scarcity, and habitat degradation. Industrial activities have heavily impacted the San Joaquin River, and further exploitation may push the ecosystem beyond a sustainable threshold. The DEIR must take a broader approach to assessing cumulative impacts, including the potential for groundwater depletion, increased carbon emissions, and long-term landscape alterations. Alternative methods, such as limiting the scale of operations or requiring additional environmental offsets, should be explored.

Comment 291-7

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Upholding public transparency and accountability in this review process is not just important but crucial to protecting the long-term health of the San Joaquin River watershed and surrounding communities.

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this critical matter.

Sincerely,
Thao Xiong

--
Thao Xiong

From:	Marian Battles
To:	Randall , David A.
Subject:	CEMEX's project extension
Date:	Thursday, March 6, 2025 10:25:46 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

As a member of the Woodward Lake community for over 34yrs I have enjoyed living in this beautiful area. My family has used the trails and waterways from Woodward park to the dam for biking, hiking, running, canoeing, fishing and exploring. We are happy now to pass these adventures down to our grandchildren. I am greatly disappointed that the county supervisors are considering an extension for drilling in this area. For years I've been concerned of the traffic on Friant. Now with the proposal of double the truck deliveries this traffic will be compounded. We have grown into a huge residential community. Thirty plus years ago this area may have been appropriate for the mining. Now it is not. What other mining project that uses explosives is in a community of homes, churches, hospitals, parks? None I'm sure. Also what assurance do we have that the mining at that depth (600ft)won't have toxins? Have they done testing down at that depth? Also what contamination is possible with the ground water in the wells at those homes near Lost Lake? Approval for 100yrs is ridiculous. There are too many unknowns. This company will have to self report and looking at their track record they seem to have lots of lawsuits paid out over the years. I believe in growing the economy of a community as much as the next person. But not with all these risks! This is a gamble I wouldn't take.

Comment 292-1

Comment 292-2

Comment 292-3

Comment(s) 292-4, 292-5

Comment 292-6

Marian Battles

Sent from my iPhone

From:	Joanne Bazarian
To:	sweaver@riverparkway.org; Randall , David A.
Subject:	Cemex DIER
Date:	Thursday, March 6, 2025 2:39:30 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 6, 2025

David Randall, Senior PlannerCounty of FresnoFresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David,I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Comment 293-1
Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

1. Impacts on the San Joaquin River Watershed ~ LEAVE THE RIVER ALONE.

2. Air Quality and Dust Emissions ~ Our air quality is horrible and Asthma is at an all time high. Half of the year we are not able to enjoy the outdoors due to high AQI as it is, why make it worse. Comment 293-2

3. Biological Resource Impacts ~ it will bring so much destruction to such a beautiful place. Comment 293-3

4. Traffic and Noise Concerns ~ We have too much now, why are we adding more to the congestion we already endure. Comment 293-4

5. Cumulative Environmental ~ this is vital for our future and the lives of our children. Comment 293-5

The San Joaquin River is one of gems we have here in the valley, it is a special area and the impact of your project would disrupt all that we hold sacred for our environment. Comment 293-6
I am a regular at the river, walking and hiking and enjoying the beauty of nature in our urban life. The diversity of wildlife, the beauty of the water and a place that brings joy to so many would be threatened.

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Comment 293-7
Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,
Joanne Bazarian

C
Judith Castro
1100 E Spruce Ave Apt 328
Fresno, CA 93720

FRESNO CA 936
4 MAR 2025 PM 2 L

Dear

David Randall, Senior Planner
Fresno County Public Works & Planning Dept.
Development Services & Capital Projects Div.
2220 Tulare St, 6th Floor
Fresno, CA 93721

RECEIVED
MAR 06 2025
FRESNO COUNTY PW & PLANNING

Dear David Randall,

I'm old - 85 - but so what the area considered for mining NOT be allowed to happen. We've so much safe area for water quality, fish and wild life. Don't want future generations to suffer because of hard rock blasting.

Comment 294-1

I vehemently say "NO"!

Sincerely,
Judith Wilbert Castro

1100 E. Spruce #328
Fresno, CA 93720
559-492-1925

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Judith Castro
1100 E Spruce Ave Apt. 328
Fresno, CA 93720

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Ms. Castro

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From: Mark Fletcher
To: Randall , David A.
Subject: CEMEX Rockfield Quarry Modification Project EIR
Date: Thursday, March 6, 2025 5:15:37 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I believe this proposed project presents such significant risks and harms to Fresno County that it should be considered for cancellation. The significant risks and harms are the following: Comment 295-1

1) Friant Avenue is a significant bicycle route with established bicycle lanes in each direction. It is one of the few locations close to Fresno and Clovis where bicycles can ride for considerable distance without interruption from traffic lights and stop signs. I enjoy riding on this road on my bicycle fairly often. The proposed large increase in truck traffic will pose significant danger to the bicyclists because the trucks will have to merge across the bicycle path. Furthermore, the truck traffic will introduce significant amounts of dirt and rocks into the bicycle path which will be a danger to me and other bicyclists. I do not feel this issue is considered sufficiently in the EIR.

2). The noise and vibrations from the blasting will significantly affect wildlife and humans in the area. Wildlife will avoid the river plain due to the noise where efforts have been made to allow greater access and protection for wildlife. The proposed EIR does not adequately address this issue. Comment 295-2

3). The continuous removal of gravel within the river bed causes increased risk of scouring downstream which can affect structures such as bridge abutments. The EIR does not consider the risk to the bridge abutments on Hwy 41 and the frontage road where it crosses the San Joaquin River downstream of the project area. Comment 295-3

4). Studies have shown that the local area already has an abundance of gravel sources that exceed the demand. Thus, I question why this project is being considered if there is already sufficiently developed gravel and granite materials. This seems to be a very high risk project with little actual demand. Comment 295-4

5). The EIR does not adequately consider the issue of pollution that can result from the hard rock mining. Hard rock mining can generate acidic water that could be contaminated with metals if certain conditions are present. The EIR does not address if this is a possibility and if it can happen, what remediation will be done. Should such remediation be needed, it will be very costly and it does not appear that Cemex will be obligated to do such remediation through bonding. Comment 295-5

Thank you for considering these issues.

Regards,

Mark Fletcher
2290 Richert Ave. Clovis, CA 93611

Catherine Fowler
P.O. Box 436
Madera, Ca. 93639

March 6, 2025

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capitol Projects Division
2220 Tulare St., 6th Floor
Fresno, Ca. 93721

Comments on Cemex Rockfield Quarry Modification Project EIR

I am strongly opposed to granting the Unclassified Conditional Use Permits (C.U.P. Application # 3666 & 3667) sought by Cemex Construction Materials Pacific LLC for the purpose of continuing and expanding aggregate mining, processing, and asphalt production in the floodplain of the San Joaquin River. It is time to honor the original reclamation agreement after years of considerable profit and damage. Comment 296-1

This project is not in the best interest of our community. It will cause significant and irreversible damage to the river bottom lands. It will negatively impact efforts to restore the river and its environs. It will negatively affect the fisheries, and challenge and endanger local wildlife and both local and migratory birds. It is a huge affront and callous dismissal of years of time, effort, and monies dedicated to the San Joaquin River Trust and Conservatorship allied with local, county, and state agencies and all of the good citizens who have been tireless volunteers dedicated to the restoration and rehabilitation of the river and its environs for the purpose of creating an amazing and accessible recreational asset for all to enjoy. Comment 296-2

This plant is not needed. Present and future aggregate demand in the Fresno P-C Region can easily be met by the already existing operations: Vulcan Sanger Centerville Project output: 80 mil. /tons/50 yrs. (1.6 mil. tons annually); CMI Kings River Project output: 28 mil. /tons/50 yrs. (1 mil. tons annually); Carmelita Mine output: 50 mil. /tons/50 yrs. (1 mil. tons annually); Coalinga Mine @ Lost Hills output: (tonnage not available); Madera Quarry output: 900,000 tons/yr. (900,000 tons annually); and the Austin Quarry output: 2.5 mil. /tons 100 yrs. (2.5 mil. /tons annually.) Comment 296-3

There is also no shortage of asphalt in the Central Valley. More and more pavers are using portable plants located at the worksite for both cost reduction, time-saving, and convenience. And, with the 2022 passage of AB2953 which mandated incorporation of up to 25% of reclaimed asphalt and concrete - a real plus for extending the life of our landfills, temporary portable plants reduce roundtrip truck traffic emissions to stationary plants.

Siting a hot mix asphalt (HMA) in a river bottom environment is a recipe for disaster. HMAs have many serious disadvantages including high energy consumption and high emissions of pollutants. HMA emissions produce large quantities of reactive organic gases (volatile organic compounds), nitrous oxide, carbon monoxide, sulfur dioxide, and PM10 and PM25 particulates. All of these pollutants significantly and adversely contribute to smog formation as they Comment 296-4

are ozone precursors. HMAs also emit polycyclic aromatic hydrocarbons (PAHs) and fumes from oily bitumen which are proven carcinogens. Off-gassing may also present a fire hazard. HMAs stink!

Comment(s) 296-4 Cont. & 296-5

Sadly, the Central Valley Air Basin is one of the most polluted in our nation. This plant would significantly and adversely affect our air quality daily. The plant's emissions would contribute to global warming and climate change.

Comment 296-6

These emissions cause serious and sometimes fatal health affects for those with compromised respiratory and coronary systems. PM10 and PM25 particulates are especially harmful to those suffering from asthma. The San Joaquin Valley has the highest childhood asthma rate in our country with one in six children a victim.

HMA emissions also effect our regions biota, by increasing sulfuric rain which has caused significant damage resulting in stress and high tree mortalities and it causes production loss in agricultural operations. Woefully, our air quality index (AQI) has been "normalized." Each morning our local TV news stations report air quality which ranges from good-moderate-unhealthy for sensitive groups-unhealthy-very unhealthy and even hazardous. This plant will add to ground level ozone and particulate pollution. And, while Cemex enjoys sizeable profits, our citizenry essentially pays millions for air quality violations when the San Joaquin Valley Air District is fined for exceeding both the Ca. and the National Ambient Air Quality Standards.

Comment 296-7

Roundtrip diesel truck emissions will add significant loads of the aforementioned pollutants, while compromising the safety and surface conditions of our roadways.

Comment 296-8

Both the HMA and the quarry site are extremely ill-sited. Cemex knows this: they are putting profits first. I am absolutely amazed that Cemex is seeking approval to dig and blast a 600 foot deep pit, about 345 acres wide, with extreme 45 degree slopes, approximately 1320 feet from the river. This is extremely ignorant. This pit will fill with stormwater runoff, while continually intercepting groundwater flows through the substrata. The water will be polluted by chemical stabilizers and blasting chemicals requiring storage in ponds exposing wildlife to harmful or fatal consequences. Its depth will create a huge cone of depression disrupting groundwater flows impacting both the river , downstream users, and local wells. A gaping 600 foot deep pit is also highly unstable so close to a river and the underlying aquifer. It could collapse in the event of torrential rains, river flooding, or seismic movement. It could possibly influence or change the course of the river ultimately affecting downstream residents and land owners. For Cemex to suggest this pit could ever be reclaimed for recreational use is pure folly. It will forever be an enormous gaping hole, perhaps even a death trap for humans and wildlife, filled with water at its bottom where lack of aeration will undoubtedly cause emissions of smelly noxious gases where only mosquitoes and lethal algae prosper. Cemex knows this.

Comment 296-9

Comment 296-10

This project will produce both light and noise pollution affecting humans, fisheries, wildlife, and birds. It will either destroy or compromise the quality of recreation along the river and its adjacent lands. Imagine taking your family to Lost Lake Park for a quality nature experience only to have your day negatively impacted by truck traffic, loud noise, dust, and the prevailing stench of hydrocarbon emissions. Noise reverberates in this canyon.

Comment 296-11

Reclamation takes many years to rehabilitate such immensely damaged lands. Anyone driving Friant Road is acutely aware of the detrimental impacts mining in this river bottom caused. These lands will never return to their former beauty and purpose on God's earth. Perhaps had our leaders one hundred years ago foresaw the future environmental degradation their original approval wrought, they may have instead encouraged rock plant development at a more environmentally sound site. Now we know.

Comment 296-12

Its high time Cemex concentrated on fulfilling the original agreement to reclaim these lands rather than seeking to further aggravate the existing damages, and delaying reclamation for another one hundred years. Cemex could then donate these reclaimed lands to the San Joaquin River Parkway Trust and Conservatorship and its allies for the benefit of our communities, our tourism industry, and the river and its wild denizens. Just imagine the huge tax write-off and positive public relations such a bold and gallant move this would engender!

Comment 296-12 Cont.

Again, please deny the Cemex application for C.U.P. # 3666 & 3667. NO on this proposal!!!

Sincerely,

Catherine Fowler

From:	Lynn Moss
To:	Randall , David A.
Cc:	District 2
Subject:	CEMEX Rockfield Quarry Modification Project EIR
Date:	Thursday, March 6, 2025 12:34:33 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I am writing to again oppose the CEMEX application to extend their lease for the next 100 years. I can't believe their audacity! Within the next 50 years the City of Fresno will be built around their current plant. Their constant blasting of the rock bed will be more noise pollution in an urban area and that alone should be enough to disqualify this project, not to mention the noise pollution from their cement and gravel trucks on Friant Road within the City of Fresno. The congestion and the constant drone of trucks is already too much and driving behind these trucks often leaves windshields pitted or worse, cracked! And the pollution from their diesel exhausts is already polluting enough now. I'm sure there are other sites in the rural parts of Fresno County that can be mined that would be much more appropriate for this type of business. For all these reasons I remain firmly opposed to CEMEX's application for any extension! It should be denied.

I attended the BOS open meeting when this was requested several years ago and my former Supervisor voted for a 3 year extension even though CEMEX had not updated their EIR for 20 years. As a result, I didn't vote for him in this past election, FYI!

Comment 297-1

Comment(s) 297-2, 297-3

Comment(s) 297-4, 297-5

Respectfully submitted,

Steve Fretz

From:	Daniel Griffith
To:	Randall , David A.
Subject:	Opposition to CEMEX Contract
Date:	Thursday, March 6, 2025 1:31:20 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

To:David Randall, Senior Planner
Fresno County Public Works & Planning Department Development Services & Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

Dear Mr. Randall and the Fresno County Board of Supervisors,

My name is Daniel Griffith, I am a District 5 resident living in Clovis at 1930 N. Dartmouth Ave Clovis CA 93619. I can be reached by phone at 559-307-6644.

Comment 298-1

I am writing this letter to express my opposition to the expansion of the CEMEX contract on Friant Road. The San Joaquin River is arguably the most important natural resource in Fresno County, and allowing a foreign company like CEMEX to dig deep into the riverbed will ruin the landscape of the river forever.

That area of the San Joaquin River is directly adjacent to the largest metro area in Fresno County, and has immense potential for conservation and recreation for Fresno County residents. Allowing CEMEX to move forward with their plan will forever rob citizens of Fresno county of that potential, and leave a permanent stain on the record of those who allowed it to happen.

Comment 298-2

There are plenty of areas that are rich with natural resources that are not directly adjacent to a major metropolitan area where mining can occur. This project should not occur on the San Joaquin as planned.

Thank you for your consideration.

From:	JOHN HENDON
To:	Randall , David A.
Subject:	CEMEX Expansion
Date:	Thursday, March 6, 2025 5:47:32 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 299-1

Comment(s) 299-2, 299-3

Comment 299-4

NO! The CEMEX operation has existed beyond the time where it is now in the way of population expansion. Friant Road is becoming outdated and will require widening, again, within a few years. The San Joaquin River has become a recreational area from the dam all the way to the 41 highway. Trucks from CEMEX operations can be hazards. NO! It is time for CEMEX to close operations and move elsewhere. To even consider allowing CEMEX to change their mining type to hard rock blasting, allowing the creation of deep pits (up to 600 feet deep), is mind boggling! Then to add another 100 years of mining along /friant road is INSANE! NO!!
Please do not allow the renewal, extension or modification of the CEMEX contract

John Hendon
633 E. Warwick Ave.
Fresno, CA 93720
559-492-1223

From: Cordell Jelf
To: Randall , David A.
Subject: CEMEX Draft Environmental Report
Date: Thursday, March 6, 2025 3:45:59 PM

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Report Suspicious

David Randall, Senior Planner

I was almost 4 years old in 1955 when my stepfather took me to Lost Lake, a work in progress then. When he showed me the salmon run, there were so many salmon shore to shore, I started to walk on them, aiming to cross the not-so-wide river. He picked me up out of the water. That was the last big salmon run, with much smaller ones for a couple of years, and then none.

Comment 300-1

1. Digging for gravel in the San Joaquin River, whose waters are already mostly diverted to Kern County or the westside of Fresno County, has continuously damaged the river bed, sides, water, plant growth, and marine life for twice my entire lifetime. Business for profit has proceeded as "private profit from public property." Taxpayers cover the additional costs to roads, fire and paramedics, police services including traffic accidents (to increase with increased heavy trucks), and various inspections and lawsuits. It is long past time to stop all work by CEMEX and all other aggregate businesses in any place on the river.

Comment 300-2

2. When these companies say they will pay to repair the damages and restore the river, it's not a credible offer because the costs will be greater than the profits. After more than 100 years already of "gravel mining," the San Joaquin River needs restoration of land, wildlife, and all plant life, and recharging the natural water flow on and below ground level.

3. A 600 foot deep mining pit is not compatible with the life of the river or the urban life now built along much of Friant Road and long time neighboring rural buildings along both sides of the river, with active farming, herding, and fishing. Rock blasting is utterly incompatible with any zoning, especially because sound carries long distances by air and ground. Professors and geologists studying the San Joaquin River say the fault lines under and around Friant Dam present only a low likelihood of danger. Allowing blasting to the area reduces my trust in their assessments.

Comment 300-3

Comment 300-4

4. For any long term lease, a period of 100 years is absurd. For any lease, 10 years is a long time, maybe negotiable, but not in this case. There are hundreds of other sources of these materials in California. Any further need for the aggregate resources that may be in the San Joaquin River cannot outweigh the public need to return the river to a more natural state, suitable for public recreation, and become a naturally healthy river.

Comment 300-5

Cordell B Jelf Jr
1703 E Morningstar Lane
Fresno, CA 93720

From:	steven Martinez
To:	Randall , David A.
Cc:	lmartinez0505@yahoo.com; Cynthia Martinez; District 2
Subject:	CEMEX wants to blast a 600-foot deep pit along San Joaquin River. We must stop them | Opinion
Date:	Thursday, March 6, 2025 4:09:07 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I absolutely disagree with this proposal to allow CEMEX to destroy our local wildlife, ecosystem, and environment by allowing them to drlll 600 ft down into the San Joaquin River. They were not allowed to perform a similar project in Mexico, thence, why would we allow them to do this project reject by the Mexican government here! Comment 301-1

It makes no sense and is not in our best interest for our community in the long run. I've already sent a message to my BOS board member. Now Mr. Bredefeld is the Supervisor of our district.

There are alternatives to this project. Comment 301-2

They could go somewhere else to drill

and

Give the land to the San Joaquin River Park Way conservatory. Comment 301-3

My feelings are the same as in this Fresno Bee Opinion given on 2/15/2025. Here is the link to the article below. Comment 301-4

https://urldefense.com/v3/__https://www.fresnobee.com/opinion/opn-columns-blogs/marek-warszawski/article298349908.html__;!!HRg2s0N7wg4sn4Q!sikXhoOkdtzE1iWnxBOcgv2hs1lJENwU-ljR1uyUmtc8SmvuRJFOCbybaMU6sMpaA1aV4AyJV9gMGt51LcFRXAcDgaj9nZ09$

My wife, Cynthia Martinez feels the same as I do regarding this issue.

Please confirm that you have received this message.

Thank you,

Steve Martinez
559-770-6995

From:	SHARON MATSON
To:	Randall , David A.
Subject:	CEMEX project
Date:	Thursday, March 6, 2025 9:28:54 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear D. Randalll,
I am against the CEMEX request for an extension on their projects along the San Joaquin River.
I believe the environmental impact is too significant to go forward with this project.
Please reject this project for the sake of our land and river.
Thank you.
Sharon Matson

Comment 302-1

From: Cheri Matthews
To: Randall , David A.
Subject: CEMEX Expansion Opposition
Date: Thursday, March 6, 2025 3:13:58 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 303-1

>> Dear Mr. Randall,
>>
>> I am writing to let you know I oppose the CEMEX expansion project.
>> I feel it is detrimental to the residents of Fresno County.
>> It will increase traffic, add wear and tear to the roads, impact recreational areas nearby, impact fish and wildlife, add pollution, while adding no benefit to the tax paying residents of Fresno County.
>> Please take my opinion into consideration.
>>
>> Thank you,
>> Cheri Matthews

Jenae McCarthy
Fresno Resident
3/6/25

David Randall, Senior Planner
Fresno County Public Works & Planning Department Development Services & Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

Dear Fresno County Staff and Decision Makers,

Comment 304-1

I am writing to *once again strongly oppose* the Rockfield Modification Project as outlined in the Draft Environmental Impact Report (DEIR), particularly regarding Impact 4.18-1, which raises serious concerns about the potential for substantial adverse changes to tribal cultural resources. Assessment and cultural resource searches (sections 4.5.1.3 and 4.5.1.4) reveal critical gaps in the protection of potential burial sites and culturally significant areas.

According to the Burial Site Sensitivity Assessment conducted by Applied EarthWorks, the project sites are situated in areas with high to very high potential for containing *intact anthropogenic paleosols*.

I'd first like to say this section of the DEIR is intentionally vague and confusing. I understand the purpose of an impact statement and the importance of language choices used. That being said, it is unrealistic to expect even an educated, informed member of the public to review this 3,000 plus page document, let alone look into who and what anthropomorphic paleosols are. *So, let me spell it out here:* anthropomorphic paleosols are ancient soils that may (in this case they do) show evidence of human activity. Paleosols are ancient soils that have been preserved in the geologic record. They can be used to reconstruct past climates and environments.

The soils on the project sites have a documented history of containing buried cultural materials. ***The DEIR fails to recognize the risk of encountering buried cultural resources during excavation and construction activities in these high-potential areas.*** When I review the current and mitigation measures, the interpretation relies heavy on the following: 1) Cemex will accurately and diligently conform to the protection measures identified 2) Cemex has already mined extensively and therefore finding cultural resources is not a significant concern. I feel these statements directly contradict each other.

While River wash soils have a lower likelihood for harboring intact prehistoric material, the proximity of the project sites to these areas, along with the surrounding geological and hydrologic forces, increases the likelihood of disturbance to cultural deposits through construction activities*. Despite these findings, the DEIR's mitigation measures are not enforceable or proactive to protect these resources, particularly in areas where the potential for buried cultural deposits is high. Additionally, when using explosives to create a 600ft pit, how are these mitigation measures relevant?*

Comment 304-2

Questions: Mitigation Measure 4.5-:2

1. “If prehistoric or historic-era cultural resources are encountered during project activities, all ground disturbing activities within 50 feet of the find shall cease.” Does fifty (50) feet seem like an adequate buffered to protect cultural resources?
2. Can you site the research that supports a 50ft buffer for mining and major ground disturbance operations? Is it clearly laid out in CEQA Guidelines Section 15126.4(b)(3)(C)?

Comment 304-2 Cont.

“Mitigation shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature.”

Comment 304-3

3. How many reports written by an archeologist were submitted to Fresno County and the Southern San Joaquin Valley Information Center in the past 100 years?
4. What is the Corporation’s history with consulting or working with Native representatives?
5. Which “accredited curational facility” have previous artifacts been investigated at?
6. Who is responsible for hiring the archeologist if a situation would arise?
7. How is this process enforced? How will other significant/ potentially significant impacts be enforced?
8. Does the County of Fresno have the capacity to ensure Cemex’s commitment to mitigation measures? Do our local tribal communities have the capacity to ensure there is no loss of cultural resources?

Records Searches and Cultural Resources Identification

Comment 304-4

The Plant Site records search revealed one historic-period building and a series of previous pedestrian surveys, noting 12 cultural resources and 11 studies within a half-mile of the site. Similarly, the Quarry Site search identified one cultural resource and **referenced two studies conducted more than 15 years ago**.

Personal Testimony

There are several sets of grinding stones along the San Joaquin River Parkway. GPS: 36.943340, -119.743130 in between the quarry and plant sites at the bottom of the Tesoro Viejo trail. The San Joaquin River was and is the most valuable cultural resource in the area.

I watched the San Joaquin River Conservancy Board meeting where a councilmember dismissed and disrespected Native American leaders while they advocated project completion and land stewardship. It was disgraceful. I understand that when this project moves forward it will be passed to the Fresno County Board of Supervisors. A member of both boards will be voting on this matter. *I urge the Supervisors to think about previous choices – and really listen to the public on this matter. When every resident of Fresno and Madera is dead, if this project passes, mining will continue long after we are gone. I urge the officials to examine the legacy they intend to leave behind for their community and loved ones.*

Comment 304-5

Sincerely,
Jenae McCarthy
559-283-3725

March 5, 2025

Brian McNally
15310 Bluff View Ave
Friant, CA 93626
union.brian@gmail.com
(559) 240-1682

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report

Dear Mr. Randall,

I am writing to formally express my opposition to the proposed 100-year permit for the CEMEX mining operation and to challenge the adequacy of the Draft Environmental Impact Report (EIR) prepared for this project. The EIR, as currently drafted, does not sufficiently or accurately assess the environmental, ecological, and community impacts that this long-term operation will have on the San Joaquin River and surrounding areas. Most of the mitigation solutions in the draft EIR amount to crossing our fingers that there won't be substantial impacts to the environment and/or a naive hope that Cemex will comply with the suggested mitigations. Comment 305-1

As someone who lives in an adjacent community in Fresno County to the quarry site, and is thus very familiar with the environment in the area, I find that the draft EIR fails to adequately address the following concerns, mostly directed to proposed changes to the quarry site:

1. Aesthetics and Visual Resources
    a. The analysis prepared by Sespe Consulting is deeply flawed when it comes to photo site selection, photoshopping of potential impacts and rating of visual impacts, so much so that the integrity and credibility of Sespe's lead on this section of the DEIR should be called into question and a new analysis of the visual impact should be conducted by the County. In particular, when you look at the photoshopping of their original photos intended to show how the project will look in future phases, it's hard to imagine that Cemex could have created more optimistic forecasting of what the project would look like if they had been able to put their own in-house graphic designers on it. Comment 305-2
        i. A look at the selected photo sites alone on pages 189 through 217 of the Draft EIR PDF makes it clear that the analysis is suspect. They provide Comment 305-3

before photos from carefully selected sites that minimize what the visual impact of the planned project would be. Most of the photos show flat land that could not capture the planned deep hole Cemex wants to dig, nor the very high and ugly berms Cemex would have to build to hide said hole. The before photos do not manage to show the aesthetic beauty of the area, either from the Friant Road level that would include stunning views of Little Table Mountain, located on the Madera County side of the river, or looking down from the bluffs on both sides of the river. The view of Little Table Mountain from Friant Road, without berms to hide it, is so beautiful that it should put Friant Road in contention as a scenic byway. But there's little chance of that if this project is approved.

Comment 305-3 Cont.

1. Remedy: Hire a new consulting company to select new photo sites that would capture the actual impact that would be caused by the Cemex plan to dig a 600-foot hole in the ground (and the required berms or screening that would be necessary to hide the aesthetic impact of that hole) and do not hide the natural beauty that exists in the area. The County should select the new consulting company, with input from the public.

ii. The photoshopping of the before photos to show the visual impact of the first two phases of the 100-year Cemex plan and the reclamation stage is laughable. Where do we see in any of these doctored photos the impact of a 600-foot hole? Where do we see the giant dirt berms required to hide this hole that would block views of Little Table Mountain from Friant Road? Where do we see the enormous, stadium lighted plant equipment Cemex wants to move to the quarry site? Where do we see the giant plot of dirt surrounding the hole where all natural grasses in trees have been removed, causing a jarring and unnatural contrast with the surrounding area?

Comment 305-4

1. Remedy: Hire a new consulting company to take new photos from new photo sites and create accurate photoshopping of the undeniable visual impacts that would be caused by the Cemex plan to dig a 600-foot hole in the ground and the required berms or screening that would be necessary to hide the aesthetic impact of that hole. This should include photoshopped views from the bluffs on both sides of the river and from Friant Road, which is used by bicyclists and vehicle traffic. The County should select the new consulting company, with input from the public.

b. The visual project impact ratings in Table 4.1-3 on pages 221 and 222 need to be conducted by a new third party consultant. The new ratings should include different viewing sites and not ignore the stunning views of Little Table Mountain that will be obstructed by the berms this project would create. An honest analysis of the visual impact of this project could not possibly conclude there would be more beneficial impacts on the visual aesthetics than there are significant

Comment 305-5

impacts. No one could say that with a straight face and it should not be included in any EIR, draft or final. Comment 305-5 Cont.

i. Remedy: Conduct a new visual project impact analysis with fresh ratings by a new third party consultant selected by the County, with input from the public.

c. The harmful impact of the proposed 600-foot hole (or even a 300-foot hole should the real intent be to compromise down the road in this process) on the aesthetics of the area cannot be denied. Views from the bluffs on both sides of the river would be irreparably harmed. And it is not only from private lands. There are publicly available trails on the Madera County side of the river that would look straight into this giant hole in the earth. These trails are used by residents from many counties, not just Madera County. Even the very suspect ratings in Table 4.1-3 recognize there will be a potentially significant impact. You can't create a hole that big without ruining the visual aesthetics. Comment 305-6

   i. Remedy: The only mitigation I can think of if Cemex wants to dig any deeper in the current quarry, for visual aesthetic impacts, is for it to do so by creating a small tunnel entrance into underground tunnels that could be used for mining. There cannot be an open hole at the quarry that goes beyond its current depth, and certainly not to 600-feet deep, without causing significant impacts. A tunnel system would hide this much better (though it would probably not address other concerns caused by the proposed project to things like noise pollution caused by blasting and potential destruction of nearby aquifers used as sources of water by nearby homeowners). The potential of this mitigation should be explored in the final EIR.

d. Moving plant equipment to the quarry site at any stage of the project would cause enormous negative visual impact to the quarry site area. I did not see this seriously considered in the photoshopped images or in the visual impact ratings. This would harm visual aesthetics from both the higher bluff views and from the street view of the quarry site, especially when one considers the proposed nighttime lighting of this equipment. Comment 305-7

   i. Remedy: Conduct a new visual analysis, including new photoshopped images of what adding plant equipment to the quarry site would look like and create new visual impact ratings. The analysis should be completed by a new third-party consulting firm selected by the County, with input from the public.

   ii. Remedy: Adding plant equipment to the quarry site cannot realistically be done without greatly damaging the visual aesthetics of the area. Much of this equipment is very tall, is supposed to be lit at night, and will be extremely displeasing to the eye, both from the road, from publicly accessible trails and from nearby homes. The current analysis states that it will be out of view, but that is not how light works. Picture the lighting in high school football stadiums - you can't see inside the stadiums from the outside, but you see the lighting that comes out at the top. And the homes Comment 305-8

that look down toward the quarry would definitely see over any berms and into the intense lights. Lighting plant equipment at night would ruin the enjoyment of properties for nearby homeowners and it should not be allowed at all. It is dishonest to say that lighting plant equipment won't cause significant visual impacts in the area and that conclusion needs to be stripped from the draft EIR and changed to a significant impact. There is no mitigation for having lighted plant equipment at the quarry site and the only answer is to prevent moving plant equipment to the quarry site. The plant equipment should not be allowed to exist near the river parkway or near homes in the area. Cemex should find alternative sites for the plant equipment not close to the quarry site, and not within sight of the San Joaquin River.

Comment 305-8 Cont.

1. In the alternative, nighttime lighting other than flashlights and vehicle headlamps should be prohibited at the quarry site. Cemex operations should not be allowed at hours where daylight is not sufficient, without lighting, to do the work safely.

2. Air Quality

   a. The Draft EIR states that the level of air quality impact before mitigation is potentially significant. This includes VOC, SVOC, and/or SO2 emissions. It concludes that impacts would be less than significant with various mitigations, such as requiring less harmful types of asphaltic cement to be created on premises and periodic equipment checks and maintenance, outlined on pages 321 and 322 of the PDF. How will the County ensure that these mitigation requirements are followed?

      i. Remedy: Enforcement is key. For all air quality mitigation suggested in the EIR, require a trust or other financial mechanism be funded by Cemex in advance of full project approval, to cover all 100 years, indexed to CPI, to fund full-time County employees tasked with oversight of required mitigation. Also, require that Cemex pay full legal costs of Fresno County for any legal disputes with Cemex if Cemex does not observe any required mitigation practices and has its operations suspended or terminated by the County for failure to follow all air quality mitigation requirements.

Comment 305-9

   b. Dust control needs to have requirements enforced by the County. We're talking about Cemex, a company that never covers the dirt and debris it hauls in trucks from the quarry site, even though retractable dust covers are often present on their trucks. I'll say it again - they never cover their trucks. So why should we trust Cemex to do all the dust mitigation they claim they'll do?

      i. Remedy: Enforcement is key. For all dust mitigation suggested in the EIR, require a trust or other financial mechanism be funded by Cemex in advance of full project approval, to cover all 100 years, indexed to CPI, to fund full-time County employees tasked with oversight of required mitigation. Also, require that Cemex pay full legal costs of Fresno County for any legal disputes with Cemex if Cemex does not observe any

Comment 305-10

Comment 305-10 Cont.

required mitigation practices and has its operations suspended or terminated by the County for failure to follow all dust mitigation requirements.

c. Require new study of what the impact of dust and pollutants from the project would be on the homes on the east side of the quarry and create additional screening to prevent dust and airborne pollutants from impacting these properties.
    i. Remedy: A combination of walls, trees and any other screening determined to be helpful by consultants to minimize impact on the homes located across Friant Road from the quarry.
d. Dirt berms at the sites need to be replaced with a combination of internal walls with a facade of full-grown, healthy trees. These dirt berms add to the dust pollution problem. They are also eyesores.

3. Biological Resources

Comment 305-11

a. The blasting, project lighting and creation of a 600-foot hole in the ground will clearly impact nearby wildlife and could even destroy the ecology of the San Joaquin River area. All of the wildlife is interdependent and the loss of one type of animal will lead to losses among others. This deserves close attention and further study.
    i. Just from my own observations in the area, I've seen a mountain lion, bald eagles nesting very close to the river, roadrunners, and many of the unthreatened animals and birds that are part of the ecology in this area. What happens to this wildlife when Cemex starts blasting?

Comment 305-12

    ii. The draft EIR recognizes the presence of many cherished and some threatened animal species, but states that because the current sites maintained by Cemex are essentially wastelands, there shouldn't be any impact. This ignores the impact of blasting on the wildlife that currently lives in the surrounding area. Further study is needed on the impact of blasting on the wildlife in the river habitat.
    It is also ridiculous to reward Cemex for the damage they have done to the land to date by saying they can't make it worse for wildlife in the future.

Comment 305-13

    iii. The draft EIR states there are potentially significant impacts to certain wildlife but then states mitigation efforts can change the impact to less than significant. Again, enforcement is key. For all wildlife impact mitigation suggested in the EIR, require a trust or other financial mechanism to be funded by Cemex in advance of full project approval, to cover all 100 years, indexed to CPI, to fund full-time County employees tasked with oversight of required mitigation. Also, require that Cemex pay full legal costs of Fresno County for any legal disputes with Cemex if Cemex does not observe any required mitigation practices and has its operations suspended or terminated by the County for failure to follow all wildlife mitigation requirements.

iv. On page 382, regarding the impacts of blasting, the draft EIR states that an annual blasting plan is to be created by Cemex and provided to the County for review. Comment 305-14

1. Remedy: Rather than allowing Cemex to create an annual blasting plan, the County needs to spell out in advance of project approval whether blasting should be allowed at all and, if so, how often, at what time of day, how low the sound and vibration must be, etc. Do not allow them to make an annual plan. The County needs to set limits at the beginning and Cemex must provide funding in advance, for the full 100 years, for the County employees who will enforce these limits.

4. Geology and Soils

a. Homeowners in the area should know that the County has conducted studies ensuring that the blasting will not cause damage to the walls, foundations or land on which their homes are built. Comment 305-15

i. Remedy: If soil and geological studies have not been conducted for each home located within one mile of the quarry site, that needs to occur and be included in the final EIR to ensure that blasting at the quarry will not cause damage to structures, foundations and land that structures are built on. Homes on the bluffs on each side of the river are built on unique geological foundations and each home should be looked at individually.

ii. Remedy: Cemex should be required to place funds in a trust or other financial instrument in advance of the project expansion with enough resources to make homeowners whole if any damage to their homes or properties is caused by blasting at the Cemex facility. Cemex should also be required to pay the attorney fees of any homeowners that take legal action against Cemex for damage caused to their homes or properties.

b. To my knowledge, there is no aggregate or mineral mining project in the country so close to a major river where a government entity has approved anything close to a 600-foot hole. Because of this, neutral third-party research into the geology between the river and the proposed quarry project must be completed and included in the final EIR. We cannot rely on Cemex commissioned studies, as this draft EIR does. Comment 305-16

5. Hydrology and Water Quality

a. As seen in Figure 4.10-9 in the draft EIR, the county wells servicing homes immediately east of the quarry site go to depths of 210 and 350 feet. These wells are community wells run by Fresno County and are labeled CSA 44c. They currently collect water at 105 feet bgs. There are other wells that would be impacted, but I'll focus on these wells since they are located immediately across Friant Road from the quarry site. These wells are clearly in danger of being impacted by the quarry site plan to blast and drill down to 600 feet bgs. Blasting and drilling is a threat to the sole water supply of the community across the street from the quarry site. Comment 305-17

i. In addition to concerns about blasting and other operations causing damage to the quantity of the water supply for surrounding wells, the draft EIR itself lists the potential impacts to water quality on page 651 of the Executive Summary: "Potential effects to surface water quality within both the Plant Site and Quarry Site could occur under the proposed project. Impacts could occur due to erosion and sedimentation caused by land disturbances; the release of uncontained materials associated with processing and production facilities and equipment storage areas; improper handling of hazardous materials, including diesel, gasoline, and asphaltic oil that would be stored on-site; improper handling and detonation of blasting agents that would be brought to the site by a qualified blasting contractor for each blasting event; improper discharge of wash water generated by washing/processing of sand and gravel; and leaking oils and grease from heavy equipment. Similar leaking of oils and grease effects could occur during site reclamation, which would involve land disturbance and the use of heavy equipment as part of reconstruction and revegetation of slopes and during the demolition and removal of structures on the sites, including the removal of processing and production facilities and septic systems, and the abandonment of monitoring and groundwater supply wells." Unfortunately, the conclusion is that Cemex will follow mitigation guidance and change the impacts from potentially significant to less than significant. Reading the risks cited above from the draft EIR and knowing Cemex's record on compliance should not give any of us confidence. Comment 305-18

ii. Remedy: More studies need to be conducted by neutral third parties, not commissioned by Cemex, to ensure that blasting and drilling activities Cemex proposes to use to create the 600-foot-deep mine will not jeopardize the water supply of CSA 44c or any other wells in the area, by collapsing or damaging any underground water aquifers or underground water sources. Comment 305-19

iii. Remedy: More studies need to be conducted by neutral third parties, not commissioned by Cemex, to ensure that chemicals Cemex plans to use in blasting and drilling and any other chemicals involved in their operations under the proposed plan will not impact water quality to the wells in the surrounding area. One focus should be on recommending an enforcement plan for the County to adopt and how much funding it would require for proper oversight.

iv. Remedy: More studies need to be conducted by neutral third parties, not commissioned by Cemex, looking into how the 600-foot hole Cemex wants to create will potentially cut off water seepage from the San Joaquin river to the groundwater supply used by wells in the surrounding area.

b. Maps on pages 431, 432, 435, 438 and 444 under file label "Draft EIR Volume 2 Appendices A-K File 2" on the County's Cemex Rockfield Expansion webpage Comment 305-20

show red arrows that indicate "Direction of Groundwater Flow" going from the areas that would contain wells for homeowners in the area, including County wells for CSA 44c, toward the current depression where the quarry is located. This is evidence that a depression in the earth made for a quarry will impact groundwater levels that will likely impact nearby wells. If the depression in the earth for the quarry is vastly deeper, logic dictates that there will be a greater impact on the "Direction of Groundwater Flow" and that this would likely impact groundwater levels for neighboring wells.

Comment 305-20 Cont.

   i. Remedy: More studies need to be conducted by neutral third parties, not commissioned by Cemex, looking into how the 600-foot hole Cemex wants to create will potentially cause groundwater flow into the quarry site to escalate and impact the groundwater supply used by wells in the surrounding area.

c. Mitigation Measure 4.10-6 starting on page 660 of the Executive Summary calls for Cemex to hire its own experts to monitor water quality at the quarry site in order to prevent potentially significant impacts to water quality for water used by nearby wells and relies on Cemex to honestly report its findings in a timely manner. This cannot be allowed. The County must have its own staff, funded in advance by Cemex by a trust or similar financial instrument, for the entire 100-year period, who can monitor water quality. Water quality should be measured on a weekly basis and reported on the County website, with immediate written notification to homeowners if water quality has been compromised, to prevent serious health conditions among neighboring homeowners.

Comment 305-21

d. Remedy: If there is any damage or disruption to water supply for homeowners in the surrounding area, Cemex must immediately supply water and water storage units sufficient to provide the same water quantity supplied to homeowners prior to project approval.
   i. Remedy: Because water supply storage is unsightly and undesirable for homeowners to have on their properties and will lower home values, Cemex must agree to purchase properties of any homeowners choosing that option if water supply is damaged or disrupted by their operations. Value of properties shall be determined by independent appraisers prior to any approval of Cemex project extension and indexed to average percentage increases in home values of the 93720 and 93730 zip codes over time.
e. Remedy: For all water supply protections or mitigation suggested in the EIR, require a trust or other financial mechanism be funded by Cemex in advance of full project approval, to cover all 100 years, indexed to CPI, to fund full-time County employees tasked with oversight of required mitigation. Also, require that Cemex pay full legal costs of Fresno County or nearby homeowners for any legal disputes with Cemex if Cemex causes damage or disruption to the water supply of nearby homeowners.

6. Land Use and Planning

a. Opportunity costs are important to consider here. If this project is approved, there is no going back and using the land for anything else, ever again. It will always be an unsafe area for recreation, housing or anything else if this project is approved. A better use of the plant and quarry sites will be to eventually include it in an overall plan for recreation and protected land and wildlife. Comment 305-22

7. Noise
    a. When aggregate or rock is dumped into trucks at the quarry site, the decibel levels exceed acceptable levels under County policy. Increasing the amount of truck hauling will therefore cause a significant impact to the neighborhood immediately east of the quarry site. Comment 305-23
        i. Remedy: Test noise caused by dumping of aggregate and rock into trucks and do not allow increased truck hauling from current levels at any stage of the project.
        ii. Remedy: Limit hours of truck hauling to 8:00 am to 5:00 pm to avoid loud noises in the morning and times people often return home from work. Also, no truck hauling should occur on weekends when families are most likely to be home trying to enjoy their properties.
    b. Noise from blasting will cause noise pollution and anxiety among people who live in the area, especially those with PTSD from past events in their lives such as my spouse. Comment 305-24
        i. Remedy: If blasting is allowed at all, limit it to once per day within a one-hour window of time so that it does not take people off guard. Also, it should not occur earlier than 10:00 am or after 4:00 pm and never on weekends.
8. Population and Housing
    a. See comments made in other sections of this letter concerning the impact this will have on people living in the area, especially those on both sides of the bluffs overlooking the quarry. Comment 305-25
    b. This project expansion would have a devastating effect on home values in the area and land that could eventually be used for responsible development of housing. This will have an adverse effect on current and future property tax collection for the County.
9. Recreation
    a. Potentially the greatest cost to Fresno County if this project is approved would be the loss of recreational opportunities to its residents if the Cemex project prevents the vision for a fully realized river parkway with hiking and biking trails and picnic grounds for all its residents to enjoy. Comment 305-26
    b. Another impact to recreation will come from increased truck traffic, dust and air pollution along Friant Road, which is a highly popular road for cyclists to use. Comment 305-27
        i. Remedy: Increased trucking traffic from the expanded quarry would be a danger to cyclists. One mitigation would be to require Cemex to construct a two-lane, bicycle and pedestrian only road adjacent to Friant Road from Copper Avenue in Fresno to Northfork Road (Road 206) in Friant.

10. Transportation
    a. The Cemex expansion plans include increased vehicle traffic from their trucks, including increasing traffic with large trucks on the already congested and dangerous section of Friant Avenue in Fresno, CA, particularly between Fort Washington and Freeway 41.
    b. Remedy: The stretch of Friant Avenue between Fort Washington and Freeway 41, much of it adjacent to Woodward Park, needs decreased traffic rather than the dangerous increase that this project promises. One potential mitigation would be for Cemex to pay for two additional lanes to be constructed on the northbound and southbound sides of the road on this stretch of Friant Avenue. Since this is already a bottleneck with little available land for expansion, Cemex would have to pay for properties in the path of road expansion.
        i. There is no good solution to any project that would increase traffic on this already overburdened and dangerous stretch of road. A better idea is for Cemex to find a new property in another part of the County if it wants to expand production and the amount of truck hauling it does.

Comment 305-28

A project of this scale and duration requires a far more comprehensive environmental review that includes thorough scientific analysis, long-term cumulative impact assessments, and meaningful mitigation strategies. It should also include independent, third-party study and suggested mitigation that isn't commissioned by Cemex. The EIR, as it stands, does not meet these standards, and I urge Fresno County to require revisions that fully account for the long-term consequences of extending CEMEX's mining operations.

Comment 305-29

I request that the Planning Department reconsider this permit considering the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.

And finally, please use common sense and treat this proposed project how it deserves to be treated. This is a monumental overreach by Cemex. The time for mining, especially deep pit blasting and drilling, along the San Joaquin River has long since passed. It is time for Fresno County to embrace the river for its recreational, wildlife and land preservation opportunities.

Thank you for your time and consideration.

Sincerely,

B McNally

Brian McNally

Sent via Electronic Mail

Fresno County Department of Public Works and Planning
c/o David Randall, Senior Planner
drandall@fresnocountyca.gov

Protest of Adoption of the Draft EIR and Issuance of Conditional Use Permits Nos. 3666 and 3667
Project: Rockfield Modification Project (EIR No. 2020060123)

To Whom It May Concern:

I am writing to formally protest the proposed adoption of the Draft Environmental Impact Report (EIR) and the issuance of Conditional Use Permits Nos. 3666 and 3667 for the Rockfield Modification Project. After reviewing EIR's executive summary and numerous appendices, I have significant concerns regarding the adequacy of the proposed mitigation measures in three critical areas: the long-term impacts of the 600-foot deep quarry pit, traffic, noise and vibration, and the potential degradation of water quality and availability in the San Joaquin River and regional groundwater.

Comment 306-1

1. **Risks Associated with the 600-Foot Quarry Pit**

The EIR indicates that the Quarry Site will be excavated to a depth of approximately 600 feet below ground surface. Although the document presents slope stability analyses and mitigation measures, including periodic inspections by qualified engineers, the potential for slope instability remains a serious concern that may not be adequately addressed by the proposed mitigation measures. The mitigation measures rely heavily on reactive monitoring and periodic reporting. However, given the uncertainties inherent in weathered and fractured bedrock conditions, unforeseen geological variations may lead to rapid onset of instability that these measures cannot adequately address. This raises questions about the long-term safety and environmental impacts of leaving such a deep pit after mining operations conclude.

Comment 306-2

The near-vertical slopes of the pit will severely limit the development of gradual littoral zones. Shallow areas are critical for spawning, the growth of aquatic vegetation, and for supporting a diverse range of wildlife. Without these transitional areas, the pond may be unlikely to sustain a robust ecosystem. The steep, sheer walls of the pit not only compromise habitat potential but also elevate safety risks. Such slopes can be prone to erosion or even catastrophic failure, especially during heavy rains or seismic events, which would further jeopardize both the environment and public safety. The presence of the pit also conflicts with Fresno County General Plan Policies OS-H.10. Considering the Project's proximity to the San Joaquin River, the final 600' deep pit would create a significant public safety hazard to future users of the San Joaquin River Parkway and individuals recreating on the banks of the San Joaquin and Lost Lake County Park. Additionally, the absence of detailed plans addressing long-term water circulation, sedimentation, and ecological restoration in

the final design suggests that the pit may simply become a static, inhospitable reservoir rather than a vibrant ecological asset. The proposed mitigation measures should be further evaluated by the County, as it may still represent a significant impact even after mitigation measures have been implemented.

Comment 306-2 Cont.

2. Traffic, Noise and Vibration

Comment 306-3

The Draft EIR acknowledges that blasting at the Quarry Site poses a risk of generating ground borne vibrations that could exceed the critical threshold necessary to potentially destabilize the San Joaquin River embankment. Although the proposed blasting protocols require monitoring and adjustments in blasting design, these protocols appear reactive rather than preventative and require little to no oversight from regulators. The reliance on post-blast monitoring, rather than more stringent pre-blast controls, may not fully safeguard sensitive receptors or ensure that vibration and/or levels remain within safe limits during all blasting events. This gap in precautionary measures could result in unforeseen damage to the embankment and nearby structures. Additionally, noise impacts to potential receptors from blasting activities were assessed using modeling and the mitigation measures rely on the operator self-regulating when choosing blasting designs. Both approaches introduce uncertainty and indicate that the potential impacts from noise and vibration may not be mitigated to a less than significant impact.

The EIR concludes that Impact 4.17-1 is significant and unavoidable. The EIR found that the addition of project-related trips to existing conditions, 5-year cumulative conditions, 15-year, and cumulative (year 2040) conditions would contribute to substantial decreases in level of service and substantial increase in queuing at several intersections. Mitigation of these effects relies on the County providing funding for road/signaling improvements. This is an unacceptable mitigation approach that would be avoidable if the projects proponent provided adequate funding for the necessary road improvements. I agree with the EIR's findings that this is a significant impact and implore the County to consider this impact when making a decision regarding whether or not to approve the Conditional Use Permits.

3. Potential Impacts on Water Quality

Comment 306-4

The EIR's hydrology and water quality sections contend that dewatering, pit pond formation, and potential contaminant discharges will have "less than significant" impacts on groundwater and surface water quality. However, the projected operation involves complex interactions between dewatering processes, blast-induced disturbances and effect groundwater within the fractured bedrock. The assumption that dewatering will not adversely affect the ability of nearby production wells and County Service Area 44C wells to supply adequate water to the service area, and that the existing recharge areas will remain unaffected, may be overly optimistic. The County Service Area 44C wells tap groundwater from the alluvial

Comment 306-4 Cont.

deposits, weathered zone and hard rock. Water levels in these wells are similar to those of wells at the Quary Site, suggesting that the two are hydraulically connected. According to the EIR, groundwater levels in the CSA 44C wells average approximately 45 ft below ground surface (bgs). The groundwater level in the CSA 44C well area at the time of maximum dewatering is estimated to be approximately 75 ft bgs if recharge occurs in the northeast area of the Quarry Site or approximately 105 ft bgs if recharge does not occur. Thus, the estimated decrease in the static water level at the CSA 44C wells due to the project would range from 30 feet to 60 feet depending on groundwater recharge. Significant decreases in water levels in these wells have occurred due to pumping, and there may be a significant level of uncertainty regarding the ability of these wells to produce under sustained pumping while the mine is undergoing substantial dewatering. Without clearly defined action thresholds and detailed contingency plans, there is a risk of groundwater quality/availability problems emerging, especially in a setting complicated by the deep pit and aggressive dewatering. Groundwater impacts might not be managed swiftly or effectively enough with the proposed mitigation measures to prevent broader impacts on regional groundwater or adjacent surface waters. This may result in a significant unmitigated impact that should be further evaluated.

I appreciate your attention to these critical issues and look forward to seeing your response.

Sincerely,

Ryan C. Mitchum

From:	Jose Palacios
To:	Randall , David A.
Subject:	CEMEX Rockfield Expansion Project comments.
Date:	Thursday, March 6, 2025 3:11:05 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David,

Regarding the CEMEX Rockfield expansion project, me and my family as a resident of area, think that the project must stop. Comment 307-1

Many reasons came to our mind to oppose to the new project, but I will share just 2.

1. CEMEX Rockfield has been working the area many years, when they started in the Friant road, the area were just fields, but now with new house developments, the mine is in front of our eyes, the traffic of heavy trucks its added to our already crowd regular traffic.

2. The environmental impact that the new project will have in the river will be devastated. Comment 307-2

We think that new project expansion needs to be cancelled.

We hope this email from me and my family can help to consider not to the expansion of the project.

If you need have any comments or concerns, please contact me through this email.

Best regards,

Jose Palacios-Carrion

From:	Jody Palmer
To:	Randall , David A.
Subject:	CEMEX Expansion Project
Date:	Thursday, March 6, 2025 10:06:15 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 308-1

Dear Sir:
I strongly OPPOSE this expansion project because of its environmental impact. Please record my opposition.
Thank you,
Jolana Palmer
Fresno, CA 93704

From: Maria Pantoja
To: Randall , David A.
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Thursday, March 6, 2025 8:04:19 AM

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Report Suspicious

Dear David,

I am writing to express my strong opposition to the proposed Rockfield Quarry modification project, particularly the 100-year mining expansion. This project raises serious concerns about its long-term environmental, community, and regulatory impacts, and I urge decision-makers to reconsider approving such an extensive timeline. Comment 309-1

My key concerns:

• 100-Year Timeline is Unmanageable

• No industry or infrastructure project should be approved for an entire century without periodic re-evaluation and accountability.

• Future environmental laws, climate conditions, and community needs are impossible to predict over 100 years.

• Environmental Impact on the San Joaquin River Corridor Comment 309-2

• Expanding mining operations 600 feet below ground risks groundwater contamination, habitat destruction, and soil instability. Comment 309-3

• The dust, air pollution, and water consumption required for hard rock mining will have lasting ecological consequences. Comment 309-4

• Community Disruptions & Land Use Conflicts Comment 309-5

• Increased blasting, noise, and traffic congestion along North Friant Road will negatively impact residents and recreation areas. Comment 309-6

• The relocation of the asphalt and concrete plants to the Quarry Site raises air quality concerns. Comment 309-7

• The project could interfere with the San Joaquin River Parkway's conservation and recreational goals which I love so much. Comment 309-8

Call to Action: Comment 309-9

I urge the County and regulatory agencies to:

1. Reject the 100-year mining approval and implement a shorter, more reasonable review period (e.g., 20-25 years).

Comment
309-10

2. Mandate stronger environmental protections for water, air, and wildlife.

3. Take care of the people of Fresno and beautify those places instead with nature

Stop mining, research for better resources,

I appreciate the opportunity to provide public input.

Best regards,

Maria Pantoja

Fresno Resident

From: David Roberts
To: Randall , David A.
Subject: CEMEX
Date: Thursday, March 6, 2025 6:48:24 PM

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Report Suspicious

Dear Mr. Randall,

Comment 310-1

I am writing to oppose the approval of CEMEX 100 year lease. The DEIR is inadequate.

Comment 310-2

1. Toxic chemicals will leach into the San Joaquin River and affect wildlife and human health. The dig pit is too close to the river

Comment 310-3

2. Explosions will be heard by cyclists, hikers, boaters, and all other visitors to the San Joaquin River. This will make for quite an unpleasant experience for those hoping to enjoy the river and its wildlife.

Comment 310-4

3. A 600 ft deep pit will not a pleasant site. I do not want to look over the San Joaquin River and see such destruction. The San Joaquin River is the jewel of Fresno. Don't destroy it!!!

Comment 310-5

4. The amount of jobs created by this mine is nothing compared to the amount of money brought by visitors to the region who recreate along the San Joaquin River.

David Roberts
642 East Griffith Way, Fresno CA 93704
(559) 709-8702

Sent from my iPhone

From:	Sasha Roeske
To:	Randall , David A.
Subject:	DEIR San Joaquin River
Date:	Thursday, March 6, 2025 3:38:33 PM

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Report Suspicious

Hello

Comment 311-1

Disappointing. Why would Fresno want to nearly demolish one of the only natural waterways we have? I can't imagine the actual cost outweighs the environmental damage. Please reconsider this plan. My children love this river and enjoy it every summer, my children aside how much damage will you cause to the natural animal habitats?

Please stop

Sasha Roeske

From:	lesa schwartz
To:	Randall , David A.
Subject:	Cemex
Date:	Thursday, March 6, 2025 4:09:39 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Comment 312-1

It is hard to believe that the Cemex project that so dangerously impacts our environment would be considered - especially for 100 years and 600 feet of drilling.

We are faced with the existential threat of global warming that is now wreaking havoc on our world and do not need to add further destruction. With the amount of trucks that Cemex will be using to continually transport the material and the amount of pollution that will occur from this over so many years is totally unacceptable. Nowhere is the DEIR is there enough evidence that they will be able to mitigate this situation.

Comment 312-2

Additionally, blasting hard rock and crushing it into gravel going down 600 feet endangers our river and it's wildlife. Again, I see no way or no provision that would be acceptable to prevent this. We must protect this natural treasure.

Comment 312-3

I hope that the agency will require Cemex to provide further analysis and effective mitigations for these issues. We must protect the San Joaquin River watershed, surrounding areas and our environment.

Thank you for your consideration and I look forward to hearing from you and trust you will do your best to protect us.

Lesa Schwartz

"Don't be afraid of death; be afraid of an unlived life. You don't have to live forever you just have to live." Natalie Babbitt, Tuck Everlasting

From: kchansston@comcast.net
To: Randall , David A.
Subject: CEMEX EXPANSION
Date: Thursday, March 6, 2025 4:05:37 PM

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Report Suspicious

PLEASE REJECT THE ENVIRONMENTAL NONSENSE AND LET CEMEX SERVE THE PUBLIC WITH MATERIALS DERIVED FROM THEIR OWN PROPERT. THANKS

Comment 313-1

Virus-free.www.avast.com

From:	Kirk Anderson
To:	Randall , David A.
Subject:	CEMEX
Date:	Friday, March 7, 2025 2:51:57 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall,

This project is offensive! The permits for this company should have been canceled years ago. Comment 314-1

People in this area are already drilling new wells due to new construction. This project will take the water table right down to bedrock, there will be no water even for the deepest wells. There is nothing included in the proposal to help those who loose their water because of this project.

The traffic on Friant is already ridiculous. Many more huge gravel trucks weaving in and out of traffic, as they do, will make Friant Rd. Even more dangerous and congested. Comment 314-2

Just tell CEMEX NO, we don't want you.

Kirk Anderson
12243 N Old Friant Rd.
Fresno, CA 93730

March 7, 2025

David Randall, Senior Planner

County of Fresno

Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David,

Comment 315-1

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

My husband and I have spent many hours cycling in the early mornings on Old Friant Road and Friant Road. We enjoy the quiet serenity of this special area of Fresno.

While dodging gravel trucks is a scary and jarring part of our trip, we have not yet let it stop us from enjoying this pastoral setting.

Comment 315-2

I would like to address the language in the *DEIR* regarding **Noise and Traffic** in this beautiful pastoral part of Fresno. The River Park way and Eaton Trail are sanctuaries in our town for serenity and contemplation.

The absence of a noise ordinance with specific measures to enforce a noise abatement plan for the mining project would result in reliance on CeMex, which may not provide adequate protection for our community.

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely.

Sandra Aune

From:	Kayucian
To:	Randall , David A.
Subject:	Please Oppose the Cemex Rockfield Expansion
Date:	Friday, March 7, 2025 1:47:43 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall
Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street, 6th Floor
Fresno, CA 93721
DRandall@FresnoCountyCA.gov

Dear Mr. David Randall,

There is no need to allow a multinational company to profit off of further environmental harm to the land and watershed of our own home. With 556 million tons of permitted aggregate reserves in the Fresno region, well beyond projected demand, there is no good reason. It deeply troubles me that these open pit blights were blasted into land that was intact enough to eventually be protected as nature reserves. How I wish the San Joaquin river was respected. Bring back the salmon, restore wetlands, help California heal. It would be a joy to have healthier, longer stretches of intact native plant communities/habitat closer to home. We've found happier places below Pine Flat along the Kings. Just yesterday, we observed an immature bald eagle attempting to pilfer a fish from an osprey, whilst a mature bald eagle quietly brooded her eggs or young in a western sycamore on the other bank. Magic. But it is a much farther drive and we are now poor.

Comment 316-1

Comment 316-2

Please do not allow CEMEX to further threaten the river, ecosystem, and vulnerable wildlife (Buteo swainsoni, Ambystoma californiense, Agelaius tricolor, Elanus leucurus, Haliaeetus leucocephalus, Athene cunicularia, Actinemys marmorata, etc.). The explosions alone from the constant dynamiting of a pit near twice as deep as Millerton Lake (!) will cause distress to many species. Will we have to listen to that on our hikes? I don't have the heart for that. Responses to noise disturbance might have energetic impacts on wildlife. Habitat loss is another potential impact of noise disturbance, and one must consider all of the species in a trophic cascade. E.g. If individuals of one species habituate and better tolerate the disturbance, but the species they depend on for sustenance, in turn, do not. Problem. Some species may be more sensitive to this disturbance during nesting and cease attempts to raise young in the surrounding habitat. There is a lot of harm to consider, yet no need to allow the expansion. Ever known a dog that could not adapt to fireworks? A domesticated animal, among the most habituated to people and our loudness, often can't cope. If not confined they would flee and be lost. Imagine the impact on sensitive wildlife.

What about the human communities nearby? The stress of noise pollution is evidenced to cause disease in humans and take years off of our lifespans. Is CEMEX going to pay for our medical bills? What of the risks from more traffic? Is CEMEX going to pay for the extra wear and tear on our vehicle from damaged roads? Of course not. My family cannot afford anything

Comment 316-3

Comment 316-4

extra.

Comment 316-5

CEMEX does not legitimately care about our native wildlife, only insofar as preventing profit. They have already been fined at least more than $43 million for 81 separate environmental violations since 2000. Go away already. They are not welcome by me and mine.

I don't trust this company to prevent the worst impacts from occurring and massively polluting the river. We shouldn't have to worry. There is no need to allow them to further degrade nature and even the built environment (400,000 trucks on Friant Rd. annually! Please, no. My veteran husband recently became disabled with compounded PTSD due to a road-rager's attack, and dangerous driver's behavior in traffic is a key trigger). It is sheer corporate greed. We need the riparian ecosystem and watershed intact, unpoisoned. We do not need more aggregate. There is painfully obviously zero need. Let's celebrate our home by protecting it, restoring it, and only taking what we need when necessary, in the most respectful way possible. This, for the continuing benefit of future generations of all species. We are in the midst of the kind of accelerating biodiversity loss that amounts to a mass extinction event (the sixth). This is the first time it's being primarily driven by a single species (Homo sapiens). It is the collective behavior such as this disregard for other life we share this world with, that contributes to these declines. It's big and overwhelming, but a key is to do right in our own backyards. Please start by rejecting the CEMEX Rockfield Expansion.

Thank you for considering my words.

Sincerely,
Erin Barca
4819 N. Warren Ave.
Fresno, CA. 93705

From:	Eric Battles
To:	Randall , David A.
Subject:	Public Comment for CEMEX Expansion
Date:	Friday, March 7, 2025 9:51:56 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good morning David,

Please enter the following comment regarding the CEMEX expansion Draft EIR:

I am against the CEMEX expansion project due to the negative impact on the San Joaquin river area, especially the negative impact to recreation activity, wildlife, and increased water needs.Additionally, the increase of truck traffic from tis project on this portion of Friant Road would negatively impact other motorists (such as potholes and loose rock/gravel) and cause additional wear on the road. My family and I regularly visit this and surrounding areas and this expansion would directly and negatively impact our experience in these sensitive natural areas. Many Fresno and Madera County residents visit this area to get away from the noise and pollution of the more urban areas of Fresno but this expansion, if allowed to move forward, would disrupt this precious, public sanctuary.

Comment 317-1

Comment 317-2

Comment 317-3

Please consider these impacts and do not allow this project to move forward as presented.

Regards,

Eric Battles
Resident of Madera County District 1

From: Diane Bauman
To: Randall , David A.
Date: Friday, March 7, 2025 3:03:07 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 318-1

Adamantly "AGAINST* This! Just Now Saw this at Online News! Never on any Local News Channel.

Take This Project Further Away Excessive Noise & Pollution & Disrupts the San Joaquin Parkway Plans

Diane L Bauman
559-541-6950

From:	Sara Belezzuoli
To:	Randall , David A.
Subject:	Opposition to CEMEX Gravel Mine Expansion on The San Joaquin River
Date:	Friday, March 7, 2025 10:50:36 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am writing to express my strong opposition to the proposed expansion of the CEMEX gravel mine on the San Joaquin River. This project poses significant environmental, ecological, and community concerns that outweigh potential benefits. Comment 319-1

The San Joaquin River is a vital natural resource, not only for wildlife, but also for recreation for our community. Expanding mining operations in this sensitive area threatens water quality, disrupts fragile ecosystems, and increases the risk of long-term environmental degradation. I think expanding mining for the next 100 years is poor policy planning for future generations and according to recent research is unwarranted. Comment 319-2 Comment 319-3

My home sits along Friant, I enjoy daily walks on the trail and take great pride in my neighborhood. With the expansion there is an expected increase in truck traffic, this is already an issue for our household and I fear we would want to move if the early morning truck traffic increases. Not only does it disrupt homeowners along Friant, the increase in trucks will also result in significant wear and tear on Friant. One truck creates the equivalent of 5,000 cars. To burden local taxpayers with this cost is outrageous. Finally the change in technique from digging to the use of blasting hard rock will further impact residents and I fear lower property value, which will have a lasting ripple effect in our community, including local education funding. Comment 319-4 Comment 319-5

I urge the County Planning Department to prioritize sustainable land use and environmental stewardship by rejecting the expansion. Our community deserves responsible development that protects our natural resources rather than exploits them for short term gain. Comment 319-6

Sara Belezzuoli
M.Ed., MSW Intern
USC School of Social Work

STATEMENT OF CONFIDENTIALITY

This correspondence and any attachments are for the sole use of the intended recipients(s) and may contain confidential or privileged information. Any unauthorized use, disclosure, or distribution is prohibited and may be unlawful. If you are not the intended recipient or a person responsible for delivering this message to the intended recipient(s), please contact the sender and destroy all copies of the original message.

I acknowledge my presence on lands unconscionably stolen from indigenous people, including the traditional, ancestral, and contemporary territories of the Mono and Yokut peoples in Fresno, California.

David Randall, Senior Planner
Fresno County Public Works & Planning Dept.
2220 Tulare St.
Fresno, CA 93721

March 5, 2025

Re: Public Comment on Proposed CEMEX Expansion on San Joaquin River

Dear Sir,

I wish to express my strong opposition to the proposed CEMEX mining proposal that would allow hard rock blasting in the San Joaquin River bottom. Comment 320-1

My objection to this proposal is as follows:

The project would be situated in the heart of the developing San Joaquin River Parkway. Every time I visit, bike and walk on Woodward Park, the Jensen Ranch, the Eaton Trail and other riverside properties I am impressed at the popularity of these lands. Without fail I see people of all ages and all ethnicities enjoying these public properties. It is no stretch to imagine that the Parkway's expansion upriver over the next many years will be highly popular with the public. Comment 320-1

The idea that Fresno County would allow one hundred years of blasting and all that goes with such an activity is grossly anathema to the concept of a parkway which serves the public.

Most important, I spoke with a geologist to confirm what I suspected: **the entire east side of the San Joaquin Valley, up against the Sierra foothills is underlaid by granite. CEMEX should be looking elsewhere for its granite.** Without doubt, **there are thousands of acres of private rangeland in the eastern part of the valley that could be accessed for the acquisition of hard rock material.** Comment 320-3

CEMEX should be required to look elsewhere for its hard rock. It should find people live and recreate. It should conduct its operation where the environmental impacts would be far less than in the riparian San Joaquin River bottom.

Thank you for your consideration and I look forward to a formal response on this matter.

Ronald Bohigian

Ronald Bohigian
742 E. Home Avenue
Fresno, CA 93728
rjbohig@gmail.com
(559) 593-3949

Mr. Ronald J. Bohigian
742 E Home Ave
Fresno, CA 93728-1811

FRESNO CA 936
5 MAR 2025 PM 2 L

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DAVID RANDALL,
SENIOR PLANNER
FRESNO CO. PUBLIC WORKS +
PLANNING DEPT.
2220 Tulare St.
FRESNO, CA 93721

RECEIVED
MAR 07 2025
FRESNO COUNTY PW & PLANNING

93721-210699

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Ronald Bohigian
742 E Home Avenue
Fresno, CA 93728

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Mr. Bohigian

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From:	Sheila Cary and Sher Lund
To:	Randall , David A.
Subject:	CEMEX expansion site on Friant Road and impact on San Joaquin River and our lives
Date:	Friday, March 7, 2025 6:19:03 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 321-1

THIS SHOULD NEVER HAPPEN!!

We are once again amazed, shocked and angered by the potential devastation that will be caused by this proposed expansion. How did it even get this far?

What the hell are you thinking?!

100 MORE years of mining
600 foot DEEP mining pit
Changing approach to hard rock BLASTING

All in the beautiful San Joaquin River.

So -- here we are sending our stunned opposition to the Senior Planner, Daid Randall, Fresno County Public Works & Planning Dept., Development Services & Capital Projects Division.

My guess is that it took me more time to write this than it took Daniel and crew to consider the "plan."

There is nothing about this project that could be considered an improvement or positive from an environmental standpoint -- for fish, fowl, wildlife or people. This site is in the middle of a residential area.

Money should not be the consideration.

The answer is NO!!

Sheila M. Cary and
Sheryl K. Lund
2luckygals@att.net

From:	Martin Cawthorne
To:	Randall , David A.
Subject:	Cemex proposal to extend operating permit
Date:	Friday, March 7, 2025 5:25:01 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear planning staff, I would like to voice opposition to the proposed CEMEX conditional use permit for hard rock mining
at their owned properties "Quarry & Plant sites" along the San Joaquin river basin south of Lost Lake plant.

Comment 322-1

I would also like the questions below answered.

Comment 322-2

I moved to Clovis in 1988 and have seen no end of urban growth and development in that time, North East South and West of the City of Fresno.
With the population growth of this urban area residents need areas to recreate. The San Joaquin River basin allows a perfect place for this all year round especially during the hot summers with access to the cooling waters of the San Joaquin River.

Through the efforts of the San Joaquin River Parkway Trust, individual volunteers, and the various City, County, State partners that have all worked hard and long to make this a more environmentally ecological multi use area for our residents. We should strive to make the vision of the SJRP a reality, and work carefully to preserve and restore this great treasure along the Fresno Madera County lines to the north of the City - therefore;

Comment 322-3

I oppose the conditional use plan to allow CEMEX to operate hard rock mining at either of the current properties for the following reasons;

Comment 322-4

- Noise during blasting rock crushing
- Dust during rock crushing
- Increase in transportation of product to/from quarry site
- Disturbance of resident nesting and migratory avian visitors
- Disturbance of wildlife along the river corridor
- Visual impact of quarried site
- Any potential water impacts to the current and historical flows of the San Joaquin river.

Comment(s) 322-5 322-6 322-7 322-8

Questions;

1. Does CEMEX current operations have an Environmental Impact Report on file ?
2. What arrangements have been made to find CEMEX alternative property where they could operate such a facility within Fresno/Madera counties ?
3. What requirements have been made of CEMEX to restore their said properties back to their natural state after their gravel/rock extraction ?
4. What monitoring of noise, dust, water and transportation would be in place for the proposed extension?

Comment(s) 322-9 322-10 322-11 322-12

Please consider and answer these concerns before making decisions to further any quarry operations along said San Joaquin River bottom.

Martin Cawthorne.

From: Wei-Lung Chang
To: Randall , David A.
Subject: Against mining to the San Joaquin River
Date: Friday, March 7, 2025 11:01:28 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 323-1

I am sending this e-mail to express my opinion of opposing the mining project to the San Joaquin River. This river is such a pretty river around this beautiful city and providing the city with a wonderful environmental contribution for the people of Fresno county. This mining project will be totally destroy this river and surrounding area which will be causing huge negative environmental impact to this whole San Joaquin valley.

Sincerely Yours,
Wei-Lung Chang
1837 E. Lester Ave, Fresno
CA 93720

From: Aurora Clark
To: Randall , David A.
Subject: CEMEX Expansión
Date: Friday, March 7, 2025 10:55:03 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hello
Just wanted to add our thoughts to the possible expansion of CEMEX. We live in the vicinity of CEMEX. We are absolutely opposed to the expansion due to noise, pollution, and overall damage to the environment.
The San Joaquin River in this area is where we grew up fishing, camping, and enjoying what the City of Fresno offers us as far as nature. It would be a shame to continue to destroy this beautiful area for future generations.
It is our hope and desire that the City of Fresno hears our voices.
Thank you
Aurora Clark

Comment 324-1

From:	Asher Cupp
To:	Randall , David A.
Subject:	CEMEX Pit
Date:	Friday, March 7, 2025 8:35:42 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,
I am writing to oppose approval of CEMEX one hundred year lease. I am concerned of the explosions of chemicals that will go directly into the San Joaquin river. Farms in the Central Valley pull water directly from this river.
Sincerely,
Asher Cupp

Comment 325-1

From:	Matt Davis
To:	Randall , David A.
Subject:	Draft Environmental Impact Report comments/questions
Date:	Friday, March 7, 2025 3:31:00 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 326-1

I would like to know what specific damages to fish and other wildlife are estimated, and if CEMEX plans to replace the fish they kill with equally or better suited fish and wildlife for the area and pay for any further research it takes to find out how to do that…? If they kill any birds with their dust, are they going to replace those with equally or better suited ones for the local environment and pay for any research it takes to find out how to do that? The only kind of birds I approve CEMEX to kill are pigeons. Serious question: Can they guarantee to kill ONLY pigeons?

If any dust is found to cause diseases in the neighboring communities—including but not limited to lung problems, does CEMEX promise to pay for all necessary tests and treatments for any such diseases as determined by doctors?

If CEMEX cause any pollution in the water supply from the San Joaquin River, will they guarantee payment to the affected water facilities to test all affected water restore its purity to what it was before or better?

If any death of a human being occurs and it is determined by local authorities to be an accidental death that would not have happened if the quarry never existed, will CEMEX agree to compensate each affected immediate family member with one quarter of 1 Bitcoin (BTC) for each year of the life of the victim that was lost, up to 80 years?

I'm going to assume CEMEX will answer "no" to all of these questions, since they have already failed to do
compensatory things similar to these in areas where they have mined.

Comment 326-2

And apparently there is already an ample supply aggregate material mind in the Fresno and Madera areas.

Comment 326-3

Though I don't generally oppose free enterprise or market competition to lower prices, I oppose this plan of CEMEX. We have a great need for clean water and air, and we don't need more aggregate materials or another big hole in the ground any more than I need a hole in my head.

I oppose the approval of new or additional mining projects affecting the Madera, CA area.

Matt Davis
4260 Little Canyon Dr
Madera, Ca 93636

From:	Julie Evans
To:	Randall , David A.
Subject:	CEMEX
Date:	Friday, March 7, 2025 12:04:46 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Please accept this as our formal public comment regarding the proposed CEMEX expansion. We believe this project requires further environmental review, as it poses a potential threat to fish and wildlife populations in the area. The long-term consequences of this expansion could be detrimental, potentially impacting future generations and jeopardizing the water quality of the river.

Comment 327-1

Thank you for the opportunity to express our concerns.

Julie and Dan Evans
4873 N Crystal Springs Court
Clovis, Ca. 93619

From:	Kathleen Fauver
To:	Randall , David A.
Cc:	Kathleen Fauver
Subject:	Cemex expansion
Date:	Friday, March 7, 2025 8:33:23 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 328-1

I'm a resident and of Friant CA.

My name is Kathleen Fauver I live at 21267 Ruscello Lane Friant CA.

I am writing to express my opposition to the Cemex expansion. I feel that it will cause harm to our area. We are blessed with a beautiful natural resource with our San Juaquin River. The mining change will impact our area for generations to come. Blasting creating a huge mining pit will impact the surrounding environment and the wildlife. I think approval of this would be a huge mistake. The money the county would get just isn't worth the harm to the surrounding area. It will impact the water quality the fish and wildlife.

I strongly oppose the approval of the Cemex expansion.

Sincerely

Kathleen J Fauver

Sent from the all new AOL app for iOS

From: Tiffany Garcia
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Friday, March 7, 2025 1:46:15 PM

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Report Suspicious

March 7, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Mr. Randall,

Comment 329-1

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Impacts on Water Quality & the San Joaquin River

Comment 329-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

Comment 329-3

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the

pit becomes part of the river system?

Comment 329-3 Cont.

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 329-4

Impacts on the San Joaquin River Parkway & Recreation

Comment 329-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trailsmeet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 329-6

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 329-7

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 329-8

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 329-9

Threats to Wildlife

Comment 329-10

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 329-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,

Tiffany Garcia
10982 N Honeysuckle Drive Fresno, CA 93730

From: mikegoldring@gmail.com
To: Randall , David A.
Subject: CEMEX Rockfield Expansion Project DEIR - Public Comment
Date: Friday, March 7, 2025 1:48:16 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 7, 2025

David Randall, Senior Planner
County of Fresno
Fresno, CA

Re: Comments on CEMEX Rockfield Expansion Project DEIR

Dear Mr. Randall,

Comment 330-1

I am writing to present my comments on the Draft Environmental Impact Report (EIR) for the CEMEX Reclamation Management Plan (RMP). Given the potential environmental impacts, I propose key mitigation measures to section 4.16 of the DEIR, focusing on the Recreational Element and improving access to the San Joaquin River for Fresno and Madera County residents.

I have concerns regarding other DEIR elements; however, I am certain they are being addressed by others.

As proposed, the project will create a century-long gap in the dream of creating an uninterrupted trail from the Friant Dam to Highway 99 as identified in the San Joaquin River Parkway Master Plan. This creates an untenable delay and essentially destroys the goal of the visioning concept proposed by the Parkway that will benefit every citizen in both Fresno and Madera counties.

Comment 330-2

First, I strongly advocate for the extension of the [Eaton] Trail from Lost Lake to Peck Ranch (Proposed Recreation Mitigation Element No. 1) extending from the high-water mark of the San Joaquin River to the width necessary to permit it to be of similar size and scope as the existing [Eaton] Trail. This extension would offer substantial benefits, including enhanced recreational opportunities for the public, improved access to natural areas, and the promotion of outdoor activities. By connecting more members of our community to these scenic areas, we can foster a greater appreciation for our environment and encourage responsible stewardship.

Second, to ensure the long-term viability and sustainability of the extended trail, it is imperative to establish an operations and maintenance fund (Proposed Recreation Mitigation Element No. 2). This dedicated fund would cover the costs associated with regular maintenance, repairs, and enhancements, ensuring that the trail remains safe and enjoyable for all users. A well-maintained trail not only serves the community but also helps protect the surrounding natural resources by preventing erosion and other environmental damage.

Third, providing access to Ledger Island (opposite the project) via the proposed [Eaton] Trail extension via a new bridge or by repairing the existing bridge (Proposed Recreation Mitigation Element No. 3). Ledger Island is a valuable natural asset that should be accessible to the

public for recreation and education. Ensuring access to this area would facilitate greater appreciation and understanding of our local ecology while providing additional recreational opportunities. Repairing the bridge is essential and would also enhance safety and connectivity, thereby making it easier for visitors to explore and enjoy the river's natural beauty. Incidentally, Ledger Island contains a stand (*quercetum*) of Valley Live Oak trees, which may arguably be the most magnificent examples of the same in the Valley.

Comment 330-2 Cont.

In light of these concerns, I urge the agency to mandate that CEMEX provide additional analysis, enhance, and craft mitigation measures to the Recreational Element where none currently exist. Public transparency and accountability in this review process are crucial to ensuring the long-term health of the San Joaquin River watershed and public benefit.

Comment 330-3

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,

Michael Goldring
Clovis, CA. 93619

From: Erilyn G
To: Randall , David A.
Subject: CEMEX Pit
Date: Friday, March 7, 2025 8:37:05 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randle,
I am writing to oppose the approval of CEMEX one hundred year lease. I am concerned of the explosions, the chemicals involved that would pollute the river, and finally how awful it would look.

Comment 331-1

Sincerely Erilyn Gray

From: Joseph Haydock
To: Randall , David A.
Subject: CEMEX
Date: Friday, March 7, 2025 10:02:08 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hello -

I am writing to oppose to the CEMEX expansion, which will cause terrible damage to the San Joaquin River. Comment 332-1

I cannot imagine how the County of Fresno could possibly approve this expansion, which offers so much long-lasting damage without any significant benefit to the community.

Thank you,
Joe Haydock

From: David Horwitz
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Friday, March 7, 2025 6:22:02 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am writing to express deep concerns over the Draft Environmental Impact Report No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project is an existential crisis for the continued life-giving properties, both to all people in the region and state, and all the local river dependent wildlife. For instance, the pollutants released in the water would not only kill fish, but they also are known to be carcinogenic for swimmers and boating residents. The air quality would be deeply compromised, both by the mining, and the legions of diesel fueled mega trucks trucking materials every day for the next 100 years. Public safety would also be at risk, as people could not only get sick from the polluted water, they could accidentally fall into the pits inside the river, and drown to death.

Comment 333-1

Impacts on Water Quality & the San Joaquin River

Comment 333-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet pails to provide clear solutions. Also, the fact that it is acknowledged that river flows are reduced, means that both groundwater adjacent to the river for farmers and homeowners may be decimated, completely being lost at some point in the 100-year trajectory, endangering food sources, and habitability for residents.

Add to this is the enigma of downstream farmers and residents, and downstream wildlife habitat. They will be inevitably harmed by diversions. Yet the DEIR doesn't identify these impacts to downstream water users from the dewatering of the pits. Also, they don't identify potential capture of the river during flood events.

- <!--[if !supportLists]-->• <!--[endif]-->What is CEMEX's plan, in the event of major flooding, like the 1997 flood, when water breaches the levee and captures the quarry pit?

Comment 333-3

- <!--[if !supportLists]-->• <!--[endif]-->Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites. What is more, no geological surveys have been conducted at 600 feet depth; there is a steep potential for **toxic element exposure**. Water quality concerns include:

Comment 333-4

Comment 333-5

<!--[if !supportLists]-->▪ <!--[endif]-->Impacts on aquifers and river water.

Comment 333-5 Cont.

<!--[if !supportLists]-->▪ <!--[endif]-->Blasting vibrations may affect the **water column and salmon population**.

<!--[if !supportLists]-->▪ <!--[endif]-->Quarry expansion could introduce contaminants into groundwater.

<!--[if !supportLists]-->▪ <!--[endif]-->Use of less toxic chemicals only **"when feasible"**, lacking enforceable measures.

Impacts on the San Joaquin River Parkway & Recreation

Comment 333-6

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

* The DEIR should identify the timeframe and exact location of the trail to be constructed.

* The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access

* The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

Comment 333-7

Not only are all these concerns for recreation, but the noise and blasting impacts jeopardize recreation and blasting both, particularly for surrounding parks like Lost Lake. This is because blasting noise carries **over a mile away**. Blasting sends **rocks flying up to 100 yards**. The **explosives to be used are unknown yet**. Thus, there may be a potential for strong seismic impact. **Wells of nearby residents could be affected** by vibrations.

Comment 333-8

On this topic, the DEIR uses out of date information when identifying recreational sites near the quarry. The noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 333-9

The DEIR identifies several unavoidable negative impacts, including:

<!--[if !supportLists]-->• <!--[endif]-->**Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after the mining phases). This constitutes an inappropriate deferral

of mitigation which is not allowed under CEQA. An upheaval of dust and rocky detritus and heavy-duty equipment being hauled around is not an aesthetically pleasing viewing, nor is denuded top soil with its exposed rock substrate.

Comment 333-9 Cont.

<!--[if !supportLists]-->• <!--[endif]-->**Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards such as toxic mining dust and particulate matter being spurned into the air by corporate owned trucks. Also, there will be significant traffic impact at key intersections, **Friant & Willow, Willow & Copper**. These are vital thorough fares for north Fresno residents, and for all Fresno and Clovis residents seeking to access the river, Woodward Park, and Millerton Lake. Therefore, the unavoidable traffic congestion creates a barrier to health and to community mobility. At the very least, CMEX should fund necessary infrastructure improvements to mitigate traffic issues.

Comment 333-10

Air Quality: The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 333-11

***** There will be fugitive dust which poses **health risks to nearby communities**.

*The dust may contain toxic and cancer-causing elements.

*The Air Pollution Control District **monitors equipment emissions**, but **not direct air quality impact on residents**.

Threats to Wildlife

Comment 333-12

<!--[if !supportLists]-->o <!--[endif]-->The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated.

<!--[if !supportLists]-->▪ <!--[endif]-->The proposed mitigation measures do not comply with existing regulations for protection. Additionally, the study focuses only on species within the site, not those on adjacent lands.

Comment 333-13

<!--[if !supportLists]-->o <!--[endif]-->**The buffer zones for protected bird species are inadequate**:

Comment 333-14

- <!--[if !supportLists]-->▪ <!--[endif]-->Eagles: 500 feet proposed, **should be 660 feet**.

- <!--[if !supportLists]-->▪ <!--[endif]-->Hawks: 500 feet proposed, **should be at least 1/2 mile**.

Comment 333-14 Cont.

Also, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River? Given the radically different climate and topography of this portion of California's San Joaquin River, I venture it safe to suggest they aren't.

Comment 333-15

The biology section of the DEIR leaves more questions than it answers and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Comment 333-16

Project Overview:

- <!--[if !supportLists]-->o <!--[endif]-->The CMEX quarry expansion proposes increasing mining operations, including a shift from mechanical surface removal to drilling and blasting.

- <!--[if !supportLists]-->o <!--[endif]-->Expansion permit seeks a **100-year approval**, whereas gravel companies typically receive **30-year permits**.

- <!--[if !supportLists]-->o <!--[endif]-->Plans to **dig up to 600 feet deep**, with a minimal buffer between the San Joaquin River and the quarry.

- <!--[if !supportLists]-->o <!--[endif]-->**Allowed truck loads:** 225 per day.

- <!--[if !supportLists]-->o <!--[endif]-->Expected **3 million tons of aggregate production per year**.

- <!--[if !supportLists]-->o <!--[endif]-->The project will generate approximately **800 vehicle trips per day**, yet **no traffic or bicycle safety analysis has been conducted**.

Conclusion

Comment 333-17

Given the powerful destructive nature of this operation unto the river, the wildlife it supports, human welfare, air quality, and potential flooding and seismic activity initiation, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing of the environmental impact report for the project. If not, there will be powerful grassroots backlash from multiple organizations committed to life in the Valley. Water is life, and the San Joaquin River

provides life to farmers, residents, and wildlife. Destroying it seems inevitable given the potent evidence in testimony against the CEMEX operation. ***Money talks, but the irrevocable death of a civilization based on water, in the heartland of California, talks louder.***

Thank you for your time and consideration.

Sincerely,

David Horwitz

236 E. Michigan Ave., Fresno CA 93704

From: Barbara Howell
To: Randall , David A.
Subject: Rockfield Expansion
Date: Friday, March 7, 2025 5:10:54 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 334-1

I am against this expansion.
!!

Comment(s) 334-2 334-3 334-4

1. Will blasts going that deep impact the Millerton Dam? Cracks in the dam will be a major problem for the communities.
2. There are many animals that will be driven out of their habit.
3. What impact will there be on the SJ River? I don't want our river destroyed
4. What impact will blasting have on our local air?

Please do NOT allow this to go through!!
Barbara Howell
559-226-3643

From:	Linda Kelsey
To:	Randall , David A.
Subject:	Cemex expansion
Date:	Friday, March 7, 2025 12:54:17 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall and County of Fresno Planning Board,

This letter is to register my protest to the plans by Cemex to further lengthen (again!) their lease and to further degrade the environment. Fresno City and County has finally begun to make progress in protecting the once-mighty San Joaquin and to provide access to this valuable resource to the people of the County and City. Now, Cemex wants to seriously disrupt this process while disrupting the current lives and those of future generations.

Comment 335 - 1

To make a pit significantly deeper than Millerton Lake is an absolute absurdity. One can see all along Friant Road and from the Eaton Trail the much shallower pits that are more eye sore than anything else. To say it will be made into trails and recreational space is a hollow and likely unattainable promise. And in the umpteen decades that they will degrade the land I'm sure these supposed promises will be long forgotten and what will likely be city/urbanized by then will have a grand hole in the ground to deal with. On that note, that land will be easily surrounded by housing and other development. Even now, the noise factor of such blasting will be a major disruption. Where I live, the start of dove hunting season makes for the disrupting sounds of gun blasts in my neighborhood. I can imagine what this type of blast mining will be like to the neighborhoods already not far from Cemex. Furthermore, let's not forget the dust and rocks and pebbles that will be in the roadway and the air. Already, as a former cyclist, I can attest to the debris along Friant, especially by the Cemex plant. Take a look in the roadway going up the rise just beyond the plant. Our air is already full of smog and dust and this will certainly add to it from both the mining process and the increased heavy truck traffic going to and from any such expanded project. I have danced with those trucks while on my bicycle, with some drivers being respectful, while others ride the bike lanes or fly past nearly knocking people over with the rush of air as they speed pass. Friant is a major bikeway for any rides of decent length.

Comment 335 - 2

Comment 335 - 3

Comment 335 - 4

Comment 335 - 5

Finally, there is damage to the river and its wildlife. Access has just been returned/made to the river and surrounding property at Ball Ranch and the old Sumner Peck Ranch. These will be increasingly used as word gets out that these are accessible (again). Walkers, off-road cyclists, and especially, kayakers/canoers will all lose open space access or make such spaces unpleasant or unpassable. There is nothing like being down along or on the river and seeing the deer, hearing the beavers, observing the bird rookeries, etc. And lets not forget the growing evidence of how access to green space is beneficial to mental health and in treatment of mental health disorders.

Comment 335 - 6

I ask that the County Planning Department and Public Works NOT approve this expansion. Please consider both the current and future lives that will be so negatively impacted.

Comment 335 - 7

Sincerely

Linda G. Kelsey, PhD

Sharon R. Lucero
876 E. Berkshire Lane
Fresno, CA 93720
Sharonlucero876@gmail.com

March 7, 2025

David Randall, Senior Planner **-VIA EMAIL: drandall@fresnocountyca.gov**
County of Fresno
2220 Tulare Street, 6th Floor
Fresno, CA 93721

Subject: Comments on CEMEX Rockfield Expansion Project DEIROpposition to CEMEX Mining Project Along the San Joaquin River

Dear David,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. I am writing to express my strong opposition to the proposed CEMEX mining operation along the San Joaquin River near Fresno. This project poses significant threats to public safety, environmental sustainability, and the well-being of our community. Comment 336-1

Please consider the facts with regard to the following: **Impacts on the San Joaquin Viver Watershed; Air Quality and Dust Emissions; Biological Resource Impacts; Traffic and Noise Concerns; Cumulative Environmental Effects.**

First and foremost, the additional traffic generated by heavy gravel trucks and workers along Friant Road presents a severe public safety risk. Friant Road is already overburdened, with a long history of accidents and fatalities. Increasing the volume of large industrial vehicles will only exacerbate these dangers, endangering residents and commuters alike. We cannot handle it. Comment 336-2

Beyond the traffic concerns, Fresno already has one of the largest gravel surpluses in the state, as confirmed by the California Geological Survey. This raises a critical question: Why should our community bear the environmental and social costs of a mining project that is not necessary for local supply? The claim that this project is essential to Fresno's gravel supply chain is misleading and does not justify the irreversible damage it would cause. Comment 336-3

The San Joaquin River, once a thriving ecosystem, has already suffered a 97% reduction in flow, the complete loss of its salmon runs due to dam construction, and the destruction of its wetlands from decades of mining. This project would further scar an already beleaguered waterway by blasting a crater nearly twice as deep as Millerton Lake into its banks. Given the river's fragile state, allowing CEMEX to inflict further damage would be an egregious mistake. Comment 336-4

This is a critical moment to prioritize responsible environmental stewardship and community safety over corporate interests. I urge you to reject this project and protect the San Joaquin River from further degradation.
Thank you for your time and consideration. Comment 336-5

I look forward to your response on this urgent matter.

Sincerely,

Sharon R. Lucero

From:	Karen
To:	District 2; Randall , David A.
Cc:	Karen
Subject:	CEMEX
Date:	Friday, March 7, 2025 3:20:44 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Gentlemen:

I am reaching out to you regarding the new proposed CEMEX project on the San Joaquin River and why it should not be approved. According to the California Geological Survey, the Fresno metro area currently has nearly 200% more gravel then is needed for the next 50 years coming from local mines. In addition, the Kings River has roughly 2 billion tons of easily available surface gravel, which is enough for 500 years at Fresno's current 4 million-ton annual rate. Why in the world do we need to further decimate the San Joaquin River by blasting a 600 foot deep crater to extract more gravel that is not needed, unless it's to line the pockets of CEMEX? Isn't it time we start working to make the San Joaquin River better, healthier and cleaner? It's time to say enough is enough.

Comment 337-1

IN ADDITION, if this project is approved it would send an estimated 400,000 trucks down Friant Road annually - up from about 100,000 in the 1980's and 250,000 in 2023!!!! Each truck causes wear equivalent to 5,000 cars, meaning the project would add the impact of 2 billion car trips to north Fresno's streets every year in an area that's already suffering from to many cars, trucks and has become deadly. I can't tell you how many times I have stood at the crosswalk waiting for a green light at Woodward Park to Fort Washington and have seen gravel trucks run the red light.

Comment 337-2

I commend you, Mr. Bredefeld, for returning CEMEX'S political donation. But we have to do more….we have to say enough….we have to say NO!

Comment 337-3

Thank you.

Karen Micheli

From: Bob Paul
To: Randall , David A.
Subject: Cemex expansion
Date: Friday, March 7, 2025 7:31:14 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I am opposed to any expansion in the river bed. The only expansion I want see is for recreational use!
Sent from my iPhone

Comment 338-1

Gordon Renfro

844 E. Country View Circle

Fresno, CA 93730

gordonrenfro@comcast.net

(559) 999-8365

March 7, 2025

David Randall, Senior Planner

Fresno County Public Works and Planning Department

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Dear Mr. Randall,

As a resident of Fresno living in the vicinity of the proposed project, I have concerns and objections. All too often the public is left out of the decision process and notified after the planning has been decided. Comment 339-1

First, I want to point out that the air quality in Fresno is currently very poor. We now have too many days where the air is unhealthy to breath. My concern is that this project will add to the air pollution problem. Are there modifications that can be made to any trucks that might be used to lessen the impact they will have on our air quality? Comment 339-2 What about modifications to the scale of this proposed project? Comment 339-3

Secondly, I find a one-hundred-year permit request to be unrealistic. I understand CEMEX requesting such a thing but I doubt they believe any planning group would be foolish enough to approve this. Fresno is rapidly changing and obligating future generations to live with this project is irresponsible in the extreme. Comment 339-4

Large areas of Fresno are currently changing from agriculture to residential/ urban living. One can look to San Jose to get an idea of what we will see in Fresno over the next ten to twenty years. Parks, walking trails, and natural areas such as the San Joaquin River will be extremely important to the quality of life in Fresno. These things need to be developed and enhanced now. The San Joaquin River should be a center piece for any future planning. A one-hundred-year mining project along the San Joaquin River will not improve the river or quality of life here. Comment 339-5

Please consider the concerns I have regarding the air quality, the unrealistic permit request by CEMEX and the rapid changes taking place in Fresno as we become more residential and urban. Responsible planning will be needed to guide us to a better, healthier Fresno. Comment 339-6

Thank you for your consideration.

Sincerely,

Gordon Renfro

Andy Roberts
PO Box 97
Friant, CA 93626
anndee4444@gmail.com
3/7/2025

David Randall, Senior Planner
Fresno County Public Works & Planning Department Development Services & Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

Subject: Public Comment on Draft EIR for Rockfield Quarry Expansion – Impact 4.17-3

Mr. Randall,

I am writing to formally challenge the findings under Impact 4.17-3 of the Draft Environmental Impact Report (EIR) for the Rockfield Quarry expansion project. The report fails to account for the real and documented roadway hazards caused by debris from heavy-duty haul trucks, which pose a serious safety risk to motorists, bicyclists, and motorcyclists.

Comment 340-1

Key Concerns:

1. **Photo Evidence of Dangerous Truck Debris – Ignored in EIR**

Comment 340-2

   - I am submitting a photo of debris found on the roadway at the entrance to the Rockfield Quarry site (14765 N Friant Rd), showing tire marks from when I hit the debris with my vehicle while traveling at approximately 65 MPH.
   - This directly contradicts the EIR's claim that the project will not significantly increase roadway hazards.
   - The presence of such debris demonstrates that trucking operations at this site already create dangerous conditions

2. **Failure to Provide Mitigation Measures**

Comment 340-3

   - The report incorrectly concludes that hazards from trucking operations are "less than significant" without analyzing the specific safety risks posed by truck debris.
   - Despite clear photographic evidence of roadway hazards, the EIR does not propose any mitigation measures, such as:
     - Regular street sweeping on affected roadways.
     - Stricter enforcement of load-securing regulations.

Comment 340-3 Cont.

- A debris hazard reporting system for public complaints.

3. Contradiction in the Safety Analysis

Comment 340-4

- The EIR states that safety concerns are best handled at a programmatic level but fails to acknowledge that CEQA requires project-specific risks to be assessed.
- The report acknowledges that truck traffic will increase by up to 201 trips per day, yet it does not analyze how that will increase the frequency of debris-related hazards.

4. History of Dangerous Incidents Involving Quarry Trucks

Comment 340-5

- This is not the first time that truck debris from quarry operations on this roadway has caused safety hazards. In the mid-1990s, I was involved in an incident where rocks fell from a northbound truck and struck multiple vehicles, including the one I was in. The incidents occurred between the plant site & quarry site.
- Some drivers suffered significant damage. One I recall was a river rock going through a windshield of a van, breaking a coffee mug that was in a cup-holder on the dashboard. This creates an immediate and severe danger to motorists.
- Cemex ultimately settled with insurance companies over these claims, acknowledging liability for the damages caused by unsecured debris.
- Although I do not have official records of this incident, it is well-remembered by those involved and serves as a clear example of the dangers associated with unsecured loads from quarry operations, even trucks that are empty and traveling northbound for an additional load.
- This incident demonstrates that truck debris from quarry operations has been a known hazard for decades, and increasing truck traffic will only heighten the risk. Ignoring this history in the EIR is a major oversight.
- In addition to large debris, smaller gravel falling from trucks has caused frequent windshield damage to passing vehicles. Over the years, many drivers—including myself—have experienced cracked or shattered windshields due to loose gravel escaping from haul trucks. These incidents may not always be formally reported, but they represent a persistent and costly hazard for motorists.

5. Failure to Address Flooding Risks and Hydrologic Impacts

Comment 340-6

- The Draft EIR does not account for the potential flooding of the quarry site in the event of Friant Dam failure, removal, or extreme flood events affecting the entire watershed. Given

that this is an old quarry with potentially exposed materials, sediment, and contaminants, flooding could have significant environmental consequences that must be evaluated. Comment 340-6 Cont.

- The EIR must consider flood scenarios under different conditions, including:
  - With and without Friant Dam to assess the long-term hydrologic risks to the site.
  - Upstream dam failures or extreme releases that could lead to rapid inundation.
  - Changes in sediment transport, groundwater infiltration, and potential contamination risks from flooding a site with past and present industrial activity.
- Potential Environmental Consequences: Comment 340-7
  - Contamination Risks – Floodwaters could mobilize pollutants from the quarry site, introducing harmful chemicals or heavy metals into the San Joaquin River ecosystem.
  - Disruption of Salmon Spawning Habitats – The Salmon Conservation and Research Facility (SCRF), which supports Chinook salmon restoration efforts, relies on stable water conditions. Flooding of the quarry site could alter water quality, increase sedimentation, and impact the success of salmon spawning. Comment 340-8
  - Long-Term Groundwater and Ecosystem Damage – If floodwaters infiltrate the quarry site, they could permanently alter groundwater chemistry, harming local ecosystems that depend on the river. Comment 340-9

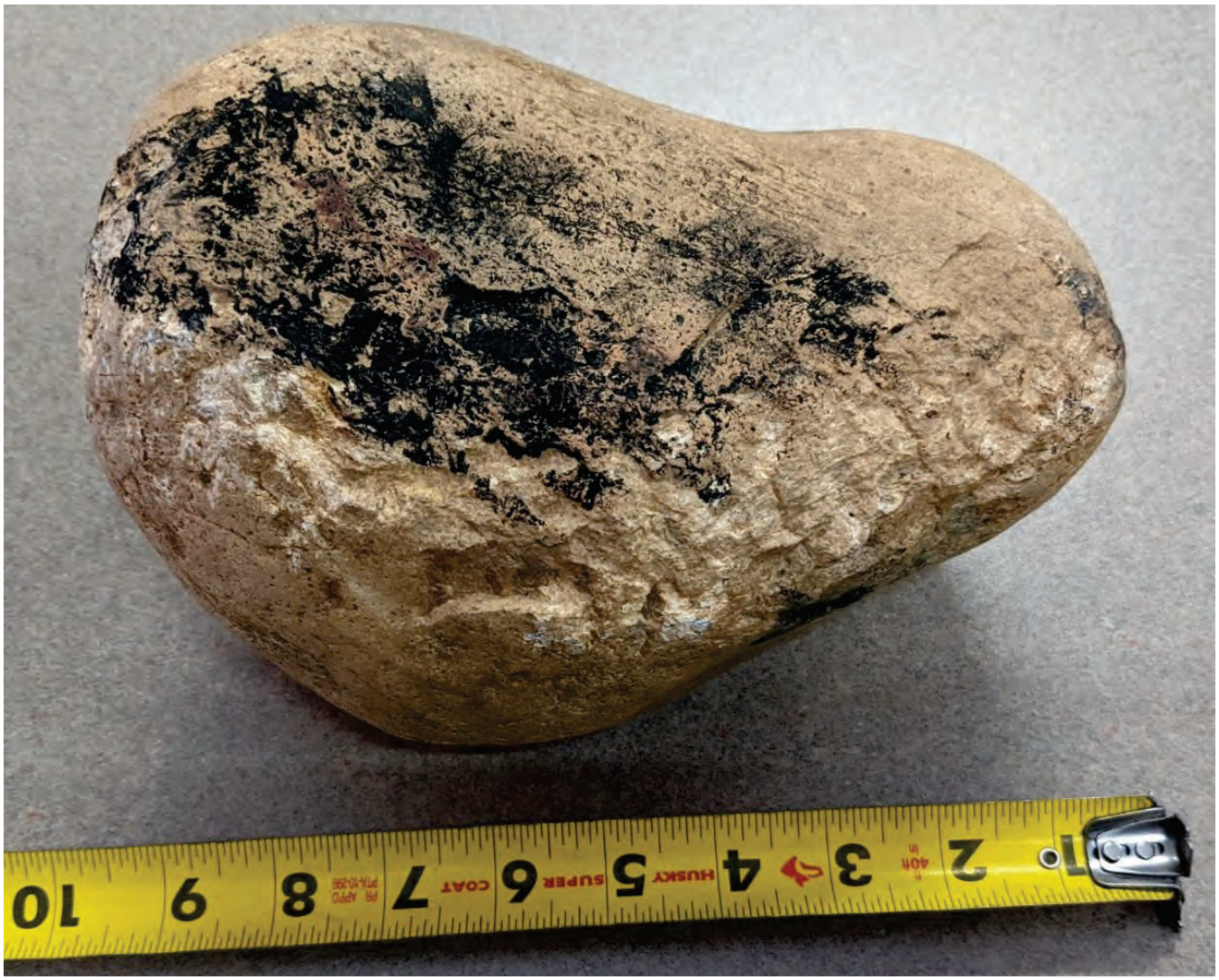
Requested Actions:

- The EIR must be revised to include a comprehensive analysis of the potential environmental risks posed by flooding at the quarry site in the event of Friant Dam failure or removal, or extreme flooding scenarios from upstream dams. This analysis should include: Comment 340-10
  - An evaluation of how floodwaters could disturb exposed quarry materials, potentially releasing pollutants, sediment, and contaminants into the San Joaquin River ecosystem.
  - A study of how flooding could alter groundwater quality, creating long-term environmental damage to surrounding ecosystems.
  - A detailed review of salmon spawning habitats near the Salmon Conservation and Research Facility and how flooding from the quarry could impact water quality and sedimentation necessary for successful Chinook salmon spawning. Comment 340-11

- The EIR must also address the risks posed by truck debris on roadways in the vicinity of the quarry, including: Comment 340-12
    - Debris removal and regular street maintenance to address hazards from both large rocks and smaller gravel that have been documented to cause damage to vehicles.
    - Enhanced load-securing regulations and enforcement to prevent material from falling off trucks and becoming a roadway hazard.
    - Development of a public reporting system for motorist and cyclist incidents related to debris on roadways near the quarry site.
- The County must require the implementation of mitigation measures to address both roadway hazards and flooding risks, including: Comment 340-13
    - Creating a flood risk management and emergency response plan specific to the quarry site.
    - Ensuring contingency plans are in place for environmental monitoring in case of flooding, particularly regarding water quality and sediment runoff.
    - Developing strategies to reduce contaminants and sediment transport from the quarry during flood events.
    - In consultation with the Salmon Conservation and Research Facility, incorporating measures to protect salmon habitats from potential flooding and sedimentation impacts.
    - Requiring routine maintenance of roadways to remove debris and ensure safe conditions for all road users.
- The EIR must fully account for the hydrological impacts of potential flooding scenarios on the quarry site and the surrounding ecosystems, including the long-term environmental consequences for water quality and fish habitats. Comment 340-14
- The County must ensure the EIR incorporates up-to-date flood risk data and potential impacts to wildlife habitats and public resources, such as the Salmon Conservation and Research Facility. Failure to do so would render the environmental review incomplete and legally deficient. Comment 340-15

Failure to properly evaluate and mitigate this issue would constitute an inadequate environmental review under CEQA. Given the clear photographic evidence, firsthand accounts, and historical incidents of debris-related dangers, the County has a responsibility to address this issue before approving the project. Comment 340-16

Sincerely,
Andy Roberts



Debris found on the roadway at 14765 N Friant Rd Quarry entrance – approximately 9.5” x 6” x 5” in size. The black marks are rubber from my tire after striking the rock at 65 MPH.

Debris found on the roadway at 14765 N Friant Rd Quarry entrance – approximately 9.5” x 6” x 5” in size. The black marks are rubber from my tire after striking the rock at 65 MPH.

Damage to my tire after striking the roadway debris at 65 MPH.

From: robertsj521@gmail.com
To: Randall , David A.
Subject: Cemex pit
Date: Friday, March 7, 2025 6:36:53 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

> Dear Mr. Randall,
>
> I am writing to oppose the approval of CEMEX 100 year lease. The DEIR is inadequate. Comment 341-1
>
> 1. Toxic chemicals will leach into the San Joaquin River and affect wildlife and human health. The dig pit is too close to the river. Comment 341-2
>
> 2. Explosions will be heard by cyclists, hikers, boaters, and home owners. This will make for quite an unpleasant experience for those hoping to enjoy the river and its wildlife. Comment 341-3
>
> 3. A 600 ft deep pit will not be pleasant site. I do not want to look over the San Joaquin River and see such destruction. The San Joaquin River is the jewel of Fresno. Don't destroy it!!! Comment 341-4
>
> 4. The amount of jobs created by this mine is nothing compared to the amount of money brought by visitors to region. Comment 341-5

5. Why destroy such a beautiful place. Comment 341-6

>
> Jennifer Roberts
> 642 East Griffith Way, Fresno CA 93704
> (559) 367 4036
Sent from my iPhone

From:	Laura Rosenberger Haider
To:	Randall , David A.
Cc:	Ronald Martin
Subject:	CEMEX"s proposed blast mine could expose us to unsafe amounts of nickel dust and diesel particulate matter
Date:	Friday, March 7, 2025 5:10:50 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

My second comment: SJVAPCD assumed there would be 28 ppm of nickel in aggregate processing dust plus 20 ppm of nickel released from material storage plus 19 ppm of nickel in road dust. Using soil samples the empirically determined amount of nickel from aggregate processing is 20.7 ppm. In addition there is nickel in diesel exhaust from the extra truck trips. (Reference: CE01 Rockfield Air Report, December 4, 2019, page 44. Table 14: Fugitive TAC Speciation Assumptions is a listing of toxic air contaminants in aggregate processing dust. and other dust from mining.)

Comment 342-1

"The ARB has estimated that about 70% of the cancer risk that the average Californian faces from breathing toxic air contaminants stems from diesel exhaust particles." (from Rockfield Modification Project DEIR and OEHHA studies)

Comment 342-2

One person complained that dust was emitted from CEMEX's rock quarry. What if there is no water to use for controlling the dust? CEMEX company had 43 violations. The proposed natural gas powered engines would contribute to climate change and drought. I don't want them to wait until damage occurs to mitigate the damage. Mining also produces RCS (harmful silica dust) which is linked to silicosis and fibrotic scaring of the lungs (RMP DEIR, v1 CH 10 p 262) .

Comment(s) 342-3 & 342-4

Comments 342-5 & 342-6

_____-

Dan's comment:

Nickel Contamination of the Air or Food Could Lead to Chronic Diseases in Animals and Humans: An Update of Science.

Comment 342-7

The element nickel does not appear to be needed inside of the human body and, up to recently, it was never considered by researchers to be an essential nutrient for humans. In fact, nickel is well known as a heavy metal, alongside others like lead, mercury and cadmium.

Nickel is also recognized to create serious dysfunctions inside mitochondria (the energy-producing organelles inside most human cells) and to produce massive oxidative stress throughout the body -- as these being well-studied physiological results of its toxicity(1).

Recently researchers found out that epigenetic alterations induced by nickel exposure can damage the human genome. But since healthy changes of human lifestyle are found to influence the Epigenome -- and since the Epigenome determines the health of the human Genome -- there is hope that a healthy lifestyle by itself could lead to the elimination of nickel poisoning from the body and to the reversal of the damage produced by this heavy metal inside human cells.

Sources of Nickel Pollution

Nickel mines and their surroundings are well-known locations with high nickel contamination sites, as well as the companies involved in nickel processing. Marble quarries (and other types of quarries) plus their surroundings are also sources of pollution with heavy metals, including nickel.

However, high quantities of nickel are also released from volcanoes, from the production and burning of fossil fuels of all types, and from municipal and industrial waste.

Examples of Low-Degree Environmental Exposure

Even a low-dose of nickel contamination (as we could find in women wearing nickel jewelry or hand watches daily) appears to lead to pathogenic (disease-creating) changes in the human skin. See Nickel Allergy. Cleveland Clinic website (last reviewed on 12/06/2024)(reference3).

In other studies, nickel leaching from stainless steel pots and pans (only from certain metal alloys containing this heavy metal) seems to trigger a

severe allergic reaction in up to 20% of women and 8% of men worldwide. Contact dermatitis could be reversible only by eliminating all contamination sources.

An older study published in 2013(reference4) found out that "After six hours of cooking, Ni [nickel] and Cr [chromium] concentrations in tomato sauce increased up to 26-[fold] and 7-fold respectively, depending on the grade of stainless steel".

Among this study's statements:

-- "Toxicological studies indicate that a single oral dose of Ni as low as 67 µg [micrograms] can cause recurrence of ACD [allergic contact dermatitis], flare up eczema, or lead to systemic dermatitis in individuals sensitive to nickel. Studies have shown the severity of dermatitis has a dose dependent relationship to oral doses of nickel".

-- "Stainless steel grades 304 and 316 are the most commonly used in the food and beverage industry. These SS [stainless steels] grades differ by their chemical compositions of metals including nickel and chromium.

SS grade 304 contains approximately 18–20% mass fraction chromium, and 8–12% nickel, whereas SS grade 316 contains approximately 16–18% chromium, and 10–14% nickel; other metals may also vary within the grades".

The solution for this type of nickel and chromium leaching into foods: purchasing stainless steel pots and pans which do not contain nickel or chromium in the alloy.

Examples of High-Degree Environmental Exposure

A continuous exposure to nickel has been discovered to be the main cause of a specific type of nephropathy (kidney disease) experienced by the population of a certain region of Nicaragua, according to a study published in 2020(reference2).

While nephropathy is known traditionally to exist as a complication of diabetes and high blood pressure, in this study nickel has been isolated

from a group of many contaminants as being the only possible root cause of this particular form of kidney disease.

The local medical authorities in Nicaragua consider the source of nickel pollution a mystery. However, it is well-known that near the Pacific shore there are a number of active volcanoes (including Masaya, Ometepe, and Cosigüina) -- all being part of the Ring of Fire, situated on the Pacific side of the continent. We could only speculate that these are the most probable sources of high levels of nickel gases and dust in Nicaragua.

Perhaps the classical form of nickel poisoning exists in specialized workers employed in nickel mines and corporations involved in the processing of this heavy metal.

The degree of severity in affecting the human, as well as animal body, depends on the extent of the dose, as well as the length of exposure. In cases of high-degree of environmental exposure, nickel could cause asthma, kidney failure, cardiovascular diseases, lung fibrosis and cancer of the respiratory tract.

Nickel contamination of other parts of the body contributes also to other forms of cancer, including prostate cancer(reference5).
A study published in 2022(reference6) attempts to delineate the relationship between nickel exposure and kidney function in the U.S. adults.

This study provides "evidence that Ni [nickel] exposure [is] linked with declined kidney function and might interact with Cd [cadmium] exposure".

Many stainless steel pots are made from alloys which include both nickel and cadmium -- in high percentages, up to 20% of the metal alloy -- allowing leaching of these inside foods.

According to the evidence, it is possible that even a low exposure to nickel (like in contact dermatitis) could silently initiate the lowering of human kidney function -- an insidious process which could ultimately lead, if the exposure is not discontinued, to kidney failure.

Kidney disease is an insidious one, having no initial symptoms. Fortunately, early markers like microalbuminuria have the capacity to signal the danger

many years in advance. And there are also urine tests allowing patients to be tested for kidney disease before it is showing symptoms.

Nickel as Imunotoxic and Carcinogen, Promoter of Cardiovascular and Other Chronic Diseases

Depending on the dose amount and the length of impact on the human body, nickel could become a powerful immunotoxic and carcinogen agent(references7,8).

These dangers are based on the activity of nickel against human mitochondria: "Nickel-induced mitochondrial damage can occur, due to impairment of mitochondrial membrane potential, reduction of mitochondrial ATP concentration and destruction of mitochondrial DNA".

However, according to the study "Molecular mechanisms of nickel induced neurotoxicity and chemoprevention", the solutions against powerful oxidation against the body are equally powerful antioxidants like such as L-carnitine, taurine and melatonin, (and perhaps many others) natural compounds that can counteract oxidation and prevent nickel-induced neurotoxicity and carcinogenicity"(reference9).

Most importantly, Vitamin C has been discovered since 1979 to successfully counteract nickel poisoning, when used safely in higher doses. Dr. Thomas E. Levy -- considered today to be one of the most important vitamin C scientists in the world -- mentions in his book "Primal Panacea" (MedFox Publishing, 2011) how nickel and other forms of heavy metal poisoning can be reversed with vitamin C.

This humble vitamin acts as an anti-poison natural substance in animals and humans alike, gently detoxifying the body of many toxins, including nickel. In this study, vitamin C supplementation works successfully (as opposed to other detoxifying agents endangering the kidneys) gently reversing the chromosome damage in workers occupationally exposed to nickel(reference 10).

Nickel Is Employed in the Production of Prescription Medications and Medical Devices

Although nanoparticles in general have been traditionally considered unpredictable and possibly dangerous for the human body, we find them today widely employed in several medical areas, including the production of biological drugs.

Since nickel is a heavy metal, its nanoparticles -- due to their small size -- have the capacity to freely travel through tissues, organs and cell membranes. Many heavy metals (like nickel) induce the formation of powerful free radicals throughout the body, leading to oxidative stress and cellular damage.

When nickel is released into the body in its nanoparticle form, its damaging power can only multiply. It could potentially create havoc inside all cells (sick cells and healthy cells as well), damaging mitochondria (the factories of ATP energy) and lowering their production of electrical voltage(reference1).

This "very low voltage" current is vitally needed for neuron communication in the central nervous system, as well as for the electrical activity of human peripheral nerves.

Therefore we consider the use of nanoparticles of this type to be misguided for the additional, following reasons (quoting from google.com generative AI Overview):

-- "Nickel nanoparticles can trigger the production of reactive oxygen species (ROS) which can damage cell components like proteins, lipids, and DNA, leading to cellular dysfunction and death".

-- "Cancer concerns: The International Agency for Research on Cancer (IARC) classifies some nickel compounds as "carcinogenic to humans"".

-- "Reproductive effects: Studies have shown that nickel nanoparticles can negatively impact male reproductive health, causing sperm damage and abnormalities".

-- "Skin irritation: Contact with nickel nanoparticles can also trigger skin allergies and dermatitis in susceptible individuals".
Nickel is also used in dentistry being employed inside the mouth in orthodontic dental braces for teens. It is also used for various medical

devices, including wheelchairs and walking devices for patients.

REFERENCES:

1. Nickel induces mitochondrial damage in renal cells in vitro and in vivo through its effects on mitochondrial biogenesis, fusion, and fission. Chemico-Biological Interactions, Vol. 394, 1 May 2024, 110975. https://www.sciencedirect.com/science/article/abs/pii/S0009279724001212

2. "Evidence of nickel and other trace elements and their relationship to clinical findings in acute Mesoamerican Nephropathy: A case-control analysis", PLoS One, 2020 Nov 10;15(11):e0240988. doi: 10.1371/journal.pone.0240988. eCollection 2020. https://pubmed.ncbi.nlm.nih.gov/33170853/

3. Nickel Allergy. Cleveland Clinic website (last reviewed on 12/06/2024). https://my.clevelandclinic.org/health/diseases/17842-nickel-allergy

4. "Stainless Steel Leaches Nickel and Chromium into Foods During Cooking", J Agric Food Chem. 2013 Sep 19;61(39):9495–9501. doi: 10.1021/jf402400v. https://pmc.ncbi.nlm.nih.gov/articles/PMC4284091/

5. "The Role of Trace Metals in the Development and Progression of Prostate Cancer", Int J Mol Sci. 2024 Oct 5;25(19):10725. doi: 10.3390/ijms251910725. https://pmc.ncbi.nlm.nih.gov/articles/PMC11476615/

6. "Associations of nickel exposure and kidney function in U.S. adults, NHANES 2017-2018", J Trace Elem Med Biol. 2022 Dec:74:127065. doi: 10.1016/j.jtemb.2022.127065. Epub 2022 Sep
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7. "Mechanisms of nickel carcinogenesis". In: Mudipalli A., Zelikoff J.T., editors. Essential and Non-Essential metals. Molecular and Integrative Toxicology. Springer International Publishing AG; New York, NY, USA: 2017. pp. 181–197."

8. "Nickel: Human Health and Environmental Toxicology", Int J Environ Res Public Health. 2020 Jan 21;17(3):679. doi: 10.3390/ijerph17030679. https://pmc.ncbi.nlm.nih.gov/articles/PMC7037090/

9. "Molecular mechanisms of nickel induced neurotoxicity and chemoprevention", Toxicology. 2017 Dec 1:392:47-54. doi: 10.1016/j.tox.2017.10.006. Epub 2017 Oct 12. https://pubmed.ncbi.nlm.nih.gov/29032222/

10. "Individual sensitivity to genotoxic effects of nickel and antimutagenic activity of ascorbic acid". Bulletin of Experimental Biology and Medicine, 2001 131(4):367-370.

E-mail all the other Fresno County officials by 3/10

From:	Laura Sanford
To:	Randall , David A.
Subject:	CEMEX Expansion/Draft Environmental Impact Report
Date:	Friday, March 7, 2025 8:42:11 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 343-1

I am writing to express my deep concern about the environmental impact of the proposed CEMEX expansion. As a long-time supporter of the San Joaquin River Parkway, I have seen first-hand how much the public enjoys the preserved and enhanced stretches of the San Joaquin river. Fresno has very few local venues for the enjoyment of nature, and I would assert that the River Parkway is the crown jewel. It's important to preserve the beauty of the river and surrounding area for generations to come. This type of mining not only denigrates the physical beauty of the river area, but also threatens water quality as well as fish and wildlife. I urge that we err on the side of preservation.

Laura Sanford
5654 N Hamlet Ln
Fresno, CA 93711

From:	Justin Semrick
To:	Randall , David A.
Subject:	Cemex and lost lake
Date:	Friday, March 7, 2025 10:08:34 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 344-1

Why would we consider destroying one of our LAST remaining beautiful recreational areas for the sake of gravel, which we have in abundance? This is an unnecessary ecological assault on what little natural earth remains in Fresno county. Do we not have enough of that going on across the United States as the Trump administration has declared war on our National Parks? Can nothing in this world be protected from greed? Lost Lake should be considered a historic landmark and should be protected.

Sincerely, reconsider.
Justin Semrick
Sent from my iPhone

From: Hpojeda
To: Randall , David A.
Subject: CEMEX
Date: Friday, March 7, 2025 11:08:10 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 345-1

CEMEX should ABSOLUTELY NOT BE able to expand or even continue operations at the San Joaquin River location. 100 years, OUT OF THE QUESTION!!! Hard Rock Blasting- - NO. Should not be allowed in the area. What we need to do is eliminate the traffic from their trucks that travel on Friant Road and 41. We, the citizens, pay for their operations in many ways and it should not be allowed! Get CEMEX out of the area. Restore the land.

DO NOT ALLOW CEMEX TO CONTINUE TO RUIN OUR LAND AND AREA.

Sent from the all new AOL app for iOS

From: Jesus Is Lord
To: Randall , David A.
Subject: Cemex expansion
Date: Friday, March 7, 2025 7:36:37 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 346-1

Good morning, sir. I'm sending this email along to ask you, please, don't allow CEMEX to damage the homes of our local wildlife. We have one beautiful wild place left in this city at west river access. It's really a gem. Many people such as myself enjoy morning walks there and kayaking down from Native Park. I beg you to protect it, sir. God bless you and have a lovely day.

From:	TOM UTECHT
To:	Randall , David A.
Cc:	TOM UTECHT; Dawan Utecht
Subject:	CEMEX Rockfield Expansion Project
Date:	Friday, March 7, 2025 6:50:50 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. Comment 347-1

As noted in the DEIR, there are negative impacts on the San Joaquin River Watershed. The dreamed restoration of the San Joaquin river, the longest in central California will be dashed. Our air quality will continue to worsen. The impact on wild life, particularly migratory salmon and the Swainson's hawk will contribute to their decline. Comment 347-2

I have driven on Friant road nearly daily for 30 years. This road is already overused and dangerous. Large trucks degrade road conditions and kick up gravel - constantly damaging cars and windshields. This project will escalate these problems. Comment 347-3 The scenery on this drive is beautiful, until passing the large gravel mining operation and buildings. The view from the sky is worse. Comment 347-4

In my professional career, part of my job is recruiting physicians to the valley. One of Fresno's selling points is the San Joaquin river parkway. This selling point becomes moot with the CEMEX project. Comment 347-5

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. I do not believe the potential small economic benefit comes even close to outweighing all of the negative impacts. Comment 347-6

Thank you for your time and consideration of these comments.

I look forward to your response and further discussions on this important matter.

Sincerely,

Thomas A. Utecht, MD

From: Elizabeth Valdez
To: Randall , David A.
Subject: Concerns on CEMEX expansion
Date: Friday, March 7, 2025 1:06:01 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Subject: Comments on the CEMEX Quarry Expansion DEIR

Dear Mr. Randall,

I am writing to submit my comments on the Draft Environmental Impact Report (DEIR) for the proposed CEMEX quarry expansion. My primary concern is the impact on water quality and supply, particularly for neighboring residents and farmers who rely on groundwater wells. Comment 348-1

1. Water Quality & Groundwater Concerns:
    - The expansion seeks to mine up to 600 feet deep, yet no geological surveys have been conducted at this depth to assess potential impacts on groundwater.
    - Blasting vibrations may disrupt underground aquifers, impacting local wells that provide drinking water and irrigation for farms. Comment 348-2
    - There is a risk of toxic elements being released into the groundwater, threatening the safety of water sources for residents and agriculture. Comment 348-3
2. Agricultural & Residential Water Impact: Comment 348-4
    - Farmers in the surrounding area depend on stable groundwater levels for irrigation. How will the county ensure their water supply is not depleted or contaminated by quarry operations?
    - Homeowners in the area rely on private wells, which could be compromised by changes in water flow and quality due to deep excavation and blasting.
    - There is no clear plan in place for compensating residents and farmers if their water supply is negatively impacted.
3. Do We Need Another Quarry? Comment 348-5
    - According to reports from the State Geologist (published in the Fresno Bee), Fresno County already has permitted quarries producing more than enough sand and gravel for construction needs.
    - If we already have sufficient resources, why approve a 100-year expansion for an industry with a typical 30-year permit limit?
    - The long-term environmental and water risks outweigh the benefits of allowing another century of mining in this area.

Comment 348-6

Given these concerns, I respectfully request:

- A comprehensive study on how the expansion will impact groundwater availability and quality.
- A clear mitigation plan to protect the wells of nearby residents and farms, including compensation for water loss or contamination.
- An extension of the public comment period to allow further review of these critical water issues.

Comment 348-7

I would also like to request an extension of the comment period, as I was only recently informed about this issue. Given its potential impact on so many people, we need additional time to properly inform the public. I appreciate your time and consideration of these concerns. Please confirm receipt of this email, and I look forward to your response.

Sincerely,
Elizabeth Valdez

From: Cindy Williamson
To: Randall , David A.
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Friday, March 7, 2025 1:26:41 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior Planner

County of Fresno Department of Public Works and Planning Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 349-1

Impacts on Water Quality & the San Joaquin River

Comment 349-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

· What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?

Comment 349-3

· Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 349-4

Impacts on the San Joaquin River Parkway & Recreation

Comment 349-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

· The DEIR should identify the timeframe and exact location of the trail to be constructed.

· The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access

· The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 349-6

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 349-7

The DEIR identifies several unavoidable negative impacts, including:

· Scenic Degradation: The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.

· Traffic Congestion: Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on how mitigation takes place is just one example of the inadequacy of the DEIR.

Comment 349-8

· Air Quality: The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 349-9

Threats to Wildlife

Comment 349-10

The DEIR fails to adequately analyze the impact on species like Swainson’s hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 349-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

I live less than 2 miles from this site and am very concerned on how it will impact me personally being in such close proximity to this site.

Thank you for your time and consideration.

Sincerely,

Cynthia L. Williamson

1831 E Katie Brook Ave, Fresno, CA 93730

From:	Thomas Zynda
To:	Randall , David A.
Subject:	Fwd: CEMEX Expansion
Date:	Friday, March 7, 2025 1:43:15 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

-------- Forwarded Message --------
Subject:CEMEX Expansion
Date: Fri, 7 Mar 2025 13:40:18 -0800
From: Thomas Zynda <tzynda@comcast.net>
To:drandall@fresnocountyca.gov

Dear Mr. Randall:

Comment 350-1

I am writing regard the CEMEX proposal to expand its mining operation on the San Joaquin River.

I am opposed to this project for a number of reasons:

1. CEMEX, a Mexican company, is proposing this type of mining on the San Joaquin because it is illegal in Mexico.

2. The project will go to a depth of 600 feet, which will destroy that part of the river both for recreation and wildlife habitat.

Comment 350-2

3. The use of blasting for the mining will create intolerable noise for people within miles of the site, frighten pets and wild animals, and ruin the water quality.

Comment 350-3

4. The mining will further prevent access to the river by Fresno area residents--there is already very little access to the river. We need more access to the river, not less.

Comment 350-4

5. As the mining is proposed to last 100 years, it will inflict its damage for generations to come, which generations will have no opportunity to protect themselves and their environment from the project.

Comment 350-5

Sincerely,

Thomas H. Zynda

1655 W. Tenaya Way

Fresno, CA 93711

(559) 439-5126

From:	Susanjoy
To:	Randall , David A.
Subject:	expansion of the CEMEX project along the Fresno River
Date:	Saturday, March 8, 2025 2:42:11 PM

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Report Suspicious

Good Day Mr. Randall,

Comment 351-1

My name is Susan Aronson, and I am a resident of North Fork, a small town situated along the San Joaquin River, in the foothills of the Sierras, about 45 minutes north of Fresno. I have been a resident here for 29 years.

I am an avid outdoor enthusiast, who enjoys the river for kayaking, swimming, and paddling, as well as the numerous trails along the waterway. I am a member of the Fresno Audubon Society, and relish the abundance of birds and animals that make the river their home.

I am reaching out to ask for your highest and wisest considerations, for what is best for the safety and health of the river now, and for its future protection.

My greatest concern is that the CEMEX project is proposing to dig a 600 foot pit, and will blast and drill into the earth along the river. The possibility of irreparable environmental damage to the waterway, groundwater, air quality, and public safety, is not acceptable, nor worth the risk.

Comment
351-2

Please consider all alternatives to mediate a better solution. There is too much at stake, that can cause harm to residence in the area, and all wildlife around and downstream.

Thank you,

Susan Aronson
59820 Road 225
North Fork, Ca 93643

From:	Greg Basila
To:	Randall , David A.
Cc:	Barbara c Anderson-Basila; Greg Basila; Dan Page; Kurt Smith
Subject:	Comments Regarding Cemex Expansion
Date:	Saturday, March 8, 2025 6:08:28 PM

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Report Suspicious

I oppose the Cemex expansion for the following reasons: Comment 352-1

1. Water issues
+) water table seepage into the pit will need to be pumped into the San Joaquin. River, affecting water quality in the River.
+) underground water flow will be disrupted by the mine likely affecting home and irrigation wells to to west of the mine. Comment 352-2
+) the local water table to the mine will be disrupted, allowing separate water stratas to mix, affecting water quality.
2. Disruption of the river ecosystem in the area of the mine and down stream of the mine. Comment(s) 352-3 352-4
3. Noise and ground tremors from the blasts will affect area residents, wildlife and domestic animals.
4. Dust from blasting will add to poor air quality in the Fresno area Comment(s) 352-5 352-6
5. Inadequate plans for returning the River bottom to it's natural state when mining is complete.
6. Possible additional truck traffic on Friant Road. Comment(s) 352-7 352-8
7. Approval of this type of gravel extraction will give a competitive advantage to Cemex over other sand and gravel companies.
8. This is a open pit mine, no different than to open pit mines in the eastern U.S. and other areas of the country. It will be an eyesore for future generations. Comment 352-9

Thank you,
Greg Basila
559-438-7566

Yahoo Mail - Email Simplified

From:	Roberta Bavin
To:	Randall , David A.
Subject:	CEMEX - Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Saturday, March 8, 2025 9:44:47 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall,
Senior PlannerCounty of Fresno
Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David,I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. Comment 353-1

1. Impacts on the San Joaquin River Watershed- The River Parkway area is beautiful and well maintained and will be destroyed by the CEMEX expansion. Comment 353-2

2. Air Quality and Dust Emissions- Air Quality in the San Joaquin Valley is already impacted by the geography of the area. Allergens are prevalent throughout. This project will be extremely harmful to that air quality in the area, and will impact anyone with respiratory issues. Comment 353-3

3. Traffic and Noise Concerns- The traffic and noise through the area will destroy some of the peacefulness of the River Parkway area. Comment 353-4

4. Cumulative Environmental Effects - Our San Joaquin Valley is the home to many species of wildlife that could be destroyed by this project. Comment 353-5

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Comment 353-6

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Roberta Bavin
Resident, Clovis CA

From: Mark Bozzo
To: Randall , David A.
Subject: Opposition to CEMEX Rockfield Quarry Expansion (CUP Applications 3666 & 3667)
Date: Saturday, March 8, 2025 4:58:09 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Comment 354-1

I am writing to express my strong opposition to the proposed CEMEX Rockfield Quarry Modification Project (CUP Applications 3666 & 3667). This project, which plans to expand mining operations for the next 100 years, poses serious environmental, health, and quality-of-life concerns for Fresno County residents.

Key Concerns:

Comment 354-2

1. Environmental Degradation

   - The project will likely result in significant air pollution from dust and emissions, affecting public health, air quality, and disrupt local natural habitat.
   - Expanded mining operations threaten local wildlife and water resources, including potential groundwater depletion and contamination.
   - The San Joaquin River ecosystem is already at risk due to increased industrial activity. It would be irresponsible for CEMEX to pile on.

Comment 354-3

2. Public Health & Safety Risks

   - The increase in blasting noise, and resulting additional truck traffic will negatively impact nearby residents and businesses and distress local wildlife.
   - Blasting operations may damage nearby structures and create hazardous conditions.

Comment 354-4

3. Limited Economic Benefits

   - The project is expected to create only five (5) long-term jobs. It does not provide substantial job creation or long-term economic growth for the community. It seems the only benefactor is CEMEX.
   - The negative environmental and health costs drastically outweigh any potential financial benefits.

Comment 354-5

4. Land Use & Community Impact

   - The project is inconsistent with the vision of the San Joaquin River Parkway Master Plan, which prioritizes conservation and recreation.
   - The loss of natural habitat and open space will diminish local property values and the quality of life for residents.

Comment
354-6

Request for Action:

I urge Fresno County to reject this project in favor of sustainable development and environmental protection. The long-term consequences of expanded mining far outweigh the short-term benefits.

Thank you for considering my concerns. I request that my opposition be included in the public record.

Sincerely,
Mark Bozzo

Clovis, CA

mark.bozzo@gmail.com

From:	Gloria Brough
To:	Randall , David A.
Subject:	Cemex Project
Date:	Saturday, March 8, 2025 7:44:40 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Please, don’t let this environmental disaster happen!
Sincerely, Gloria Brough, Fresno, CA
Sent from my iPhone

Comment 356-1

From:	Coins1
To:	Randall , David A.
Cc:	fredclark53@hotmail.com
Subject:	Cemex EIR
Date:	Saturday, March 8, 2025 9:36:54 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. Randall, My comment on the proposal is negative. For a century the gravel and deposition surface mining has operated although the land has been zoned for agriculture. It is out of scope of law to permit hard rock mining. It is prudent and sensible to continue the present gravel and surface operations until the material is used up, within the scope of other applicable environmental laws bearing on this work. Thank You for the opportunity to weigh in. L. Dean Clark 4163 W. Los Altos Ave Fresno, CA 93722.

Comment 356-1

From:	DAVID CORDS
To:	Randall , David A.
Subject:	CEMEX vs San Joaquin River
Date:	Saturday, March 8, 2025 2:05:20 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 357-1

Dear Sir
Friends and I used to float down the river. Those times are great memories. Later I ran along the river and biked. The San Joaquin is beautiful and needs to be protected! What CEMEX is proposing would be disastrous.
Please put the San Joaquin River safety ahead of profit and vote against a destructive future.
Thank you for your vote against CEMEX.
David B. Cords
dbcords@comcast.net

From: Carol de Vries
To: Randall , David A.
Subject: CEMEX Rockfield Quarry Modification Project EIR
Date: Saturday, March 8, 2025 4:13:10 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr Randall,

It is difficult for me to understand why our local government would even consider giving Cemex a 100 year extension which would involve blasting a 600 foot pit, to put it to scale the equivalent of the Fremont Center in San Francisco (43 stories) or the length of 2 football fields, adjacent to the San Joaquin River. It seems reckless at best.

Comment 358-1

With the San Joaquin Parkway we have the opportunity to create something comparable to the American River Trail.

Comment 358-2

According to the last updated Aggregate Sustainability in the California Report (2018) we will need 305 million tons of aggregate for the next 50 years. With that I mind, we have 556 million tons of permitted aggregate reserves – nearly double (180%) the projected demand. The majority are permitted for extraction from the Kings River outside Minkler and from the Austin Quarry near Highways 41 and 145 at facilities owned by Vulcan Materials. The bottom line is we do not need more aggregate! So why is a large multinational corporation going to be allowed to blast 600 foot pit by the San Joaquin River for something we don't need?

Comment 358-3

Vulcan materials ceased operations in 2917 in the San Joaquin River because aggregate deposits on the river were almost gone. They left so why doesn't Cemex go. They were suppose to leave in 2005.

4-1-1 To mitigate the substantial adverse effect in the scenic vista CEMEX is going to stain the walls of the pit to match the surrounding area. Do you really think staining the walls of a giant 600 foot pit the size of a 43 story building is going to disguise it and make it more attractive? What is going to prevent kids and/or people from climbing over the fence and falling in it? If the wall of the pit collapses or is

Comment 358-4

Comment(s) 358-5 358-6

breached the impact on the water quality will be devastating. There is even a conflict with the zoning.

Comment(s) 358-6 Cont. 358-7

There is a conflict with the air quality plan with no mitigation measure. Seriously? Fresno's air quality is some of the worst in the nation with one of the highest rates of childhood asthma and there is no mitigation plan. Consider the adverse effect of the constant noise and added traffic, damage and loss of agricultural and forest land, defacement of the beauty of the area, loss of natural habitat. All will impact the environment and those living in the area as well as those who use the river for recreation.

Comment 358-8

Comment 358-9

Comment 358-10

To make matters worse, Cemex has a terrible track record of environmental violations: 43 million dollars in fines for 81 separate violations since 2000 to be exact according to the Good Jobs First, a Washington DC based nonprofit that tracks corporate and government accountability in economic development. It does not sound like Cemex is too trust worthy of cleaning up the messes that they make.

Comment 358-11

In closing we have the beautiful San Joaquin River in our backyard. It is our playground. It is an asset to our community. This is an opportunity for the local government to give the people of Fresno a place to recreate, take families on picnics, camp, bird, fish, kayak and canoe among other things. Please do the right thing for our community. Save our rivers!

Comment 358-12

Carol de Vries
cdvsingin@gmail.com
559-797-5191

Sent from my iPad

From:	Renee Denton
To:	Randall , David A.
Cc:	sweaver@riverparkway.org
Subject:	Comments re DEIR for CEMEX in the the San Joaquin River
Date:	Saturday, March 8, 2025 8:56:42 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior Planner
County of Fresno, Fresno CA

Dear David,

I appreciate the opportunity to comment on the Draft EIR for the CEMEX Rockfield Expansion Project. Comment 359-1

I have lived with my family near the Eaton Trail for over 30 years. I use the Eaten Trail almost every day. I often visit the San Joaquin River Parkway. I love observing wildlife, especially birds. It is unfortunate that this remarkable view shed is marked by mining activity. In my opinion, this trail and parkway are the most valuable recreational and wildlife resource that Fresno has to offer. This puts Fresno on the map as a destination place for living in California. I appreciate the mining reclamation that has been completed. I sincerely believe that the mining should come to a close. Mining should not be further developed into hard rock mining. Comment 359-2 I do not support the increase in noise level, air pollution, adverse effects to wildlife species, and the reduced recreational experience. Comment 359-3 I also do not appreciate the increase in gravel trucks along Friant over the years. Those trucks present a safety concern. I drive the road at least once a week and see this safety hazard first hand.

I do not support rock mining in the San Joaquin River. Comment 359-4

Sincerely,
Renee

Renee Denton
2096 E Rush Avenue
Fresno, CA 93730

Sent from my iPhone

From:	Jeffrey Duncan
To:	Randall , David A.
Subject:	CEMEX Rockfield Expansion Project
Date:	Saturday, March 8, 2025 8:38:39 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall, Senior Planner

My wife and I are long-time residents of the city of Fresno, and have enjoyed raising our family here. We have recreated throughout that time in the Sierras, Millerton Lake, and the San Joaquin River area. We oppose the subject project for the following reasons:

Comment 360-1

(1) CEMEX does not *need* to expand this facility, because as you know there is more than enough capacity in multiple quarries to fulfill the area's need for many years. CEMEX *wants* to expand the plant to increase profits.

Comment 360-2

(2) There are numerous environmental concerns including potential negative effects on the habitat of special-status wildlife species, soil management and groundwater contamination. Much of this requires self monitoring and self enforcement, which I understand has not been a priority of CEMEX. In light of this, why would the County want to assume these risks, as it is almost guaranteed that the County would be made a party to environmental litigation.

Comment 360-3

(3) By many measures, recent development projects in the area - including desirable higher density housing and related services - have been welcomed in expanding housing options for residents.

Comment 360-4

(4) The subject project will undoubtedly negatively impact the quality of life in the area through increased noise and increased industrial trucking congestion. Who will pay for road mitigation measures that would be necessary?

Comment 360-5

To close, I have no issue with the prudent operation of the plant as currently configured and operating. I scratch my head in wonder as to why the supervisors would vote for anything that binds the community for 100 years and allows explosives to blast open a 600 foot hole in the river area.

Comment 360-6

Regards
Jeffrey Duncan
847 E. Country View Circle
Fresno
Sent from my iPhone

Comments Cemex Rockfield DEIR March 8, 2025

Comment 361-1

4.4.9 Use of Explosives
As previously discussed, mining the hard rock at the Quarry Site would require drilling and blasting.

This section is confusing and incomplete. It references the “Blasting Protocols CEMEX-Rockfield Quarry, Fresno, California, September 8, 2021” document. The Project Specific References under the Blasting heading do not show that document available for review. There is a document “Blasting Protocols, CEMEX-Rockfield Quarry, Fresno, California, Vibra-Tech Engineers, Inc., October 27, 2020” under that Blasting heading but that is a completely different report.

This seems confusing and difficult to unravel. How can anyone be expected to understand the information when the source listed in the DEIR and the Project Specific References do not correspond. Where is that document to review that is needed to understand the “unknown” blasting protocol. This is another of many mistakes in this DEIR that makes me question how sloppy and careless the authors involved in the preparation of this document have been.

The fact that those other copies are on file with the Fresno County Department of Public Works and Planning creates another barrier to accessing the information. A series of links could make those documents simple to access and read. It is not reasonable to make the information available only by either driving to the county offices or by requesting it to be mailed or emailed (although those options were not offered).

“CEMEX contracted with Vibra-Tech to prepare blasting protocols for the Quarry Site (Blasting Protocols, CEMEX-Rockfield Quarry, Fresno, California, September 8, 2021). This blasting protocol document outlines the monitoring, control and reporting requirements for ground vibrations and air overpressures emitted from blasting at the Quarry Site. Mining of the hard rock will begin in the center of the site to establish safe blast designs (Exhibit C, Sheet 6). In addition, it provides “Best Practices” for the control and mitigation of flyrock from rock blasting and the mitigation of groundwater and surface water contamination from the use of explosive products as outlined below:”

• Blast Vibration Monitoring and Control Plan including:
• Instrument Requirements
• Instrument Setup Procedures including:
• Ground vibration measurements,
• Air pressure measurements, and
• Air overpressure measurements
• Receptor Locations and Frequency of Monitoring
• Application of Particle Velocity and Air Overpressure Control
• Inspection of San Joaquin River Embankment
• Corrective Action Plan
• Complaint Response Procedure
• Record Keeping
• Annual Reporting
• Annual Blasting Plan
• Flyrock Mitigation Plan
• Groundwater and Surface Water Contamination Mitigation Plan with Best Management Practices for Blasting including:
• General Requirements
• Loading Practices
• Explosive Selection
• Muck Pile Management

This information is in the (Blasting Protocols, CEMEX-Rockfield Quarry, Fresno, California, September 8, 2021) document. This document is not available in this DEIR or from the County

Table 4.3-2 in the Cemex Rockfield Quarry DEIR (Draft Environmental Impact Report) addresses the potential emissions of PM10 (particulate matter with a diameter of 10 micrometers or smaller) and PM2.5 (particulate matter with a diameter of 2.5 micrometers or smaller) from the quarry operations, specifically from activities such as blasting, excavation, material handling, and transportation.

Comment 361-2

From a scientific perspective, here are several problems or concerns related to PM10 and PM2.5 emissions, as highlighted in the DEIR:

1. Health Impacts on Local Population

- PM10 and PM2.5 are both inhalable particles that can deeply penetrate the respiratory system. While PM10 can lodge in the upper respiratory tract, PM2.5 is small enough to reach the lungs and even enter the bloodstream, leading to a wide range of health problems.
    - Respiratory issues: Long-term exposure to PM2.5 is linked to chronic respiratory conditions, including asthma, bronchitis, and chronic obstructive pulmonary disease (COPD).
    - Cardiovascular problems: Scientific studies have shown a direct link between PM2.5 exposure and an increased risk of cardiovascular diseases like heart attacks and strokes.
    - Premature mortality: Higher levels of fine particulate pollution can contribute to premature death from respiratory and cardiovascular diseases.
- Vulnerable populations such as children, the elderly, and individuals with pre-existing respiratory conditions would be most affected by these emissions.

2. Exceeding Ambient Air Quality Standards

- Exceeding the established air quality standards for PM10 and PM2.5 can be a serious issue, particularly if background concentrations are already high. According to Table 4.3-2, if the project contributes to increased PM concentrations above state or federal thresholds, the impact could be classified as significant.
- Scientists' perspective: According to the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB), consistent exposure to PM levels above the standards (e.g., 50 $\mu g/m^3$ for PM10 and 12 $\mu g/m^3$ for PM2.5 annually) is not recommended for long-term public health. The risk of exceeding these standards, especially in an area already prone to air pollution, is a serious concern for public health.

3. Limited Mitigation Effectiveness

- Mitigation measures outlined in the DEIR for controlling dust emissions (such as water spraying, dust suppression systems, etc.) may not be entirely effective in reducing PM10 and PM2.5 to levels that are safe for human health. These measures often address only surface dust, which may not fully control the fine particulate matter that poses the greatest health risks.
- Scientific viewpoint: While dust suppression measures can reduce visible dust and PM10, they are less effective in controlling PM2.5, which can be more difficult to manage. Fine particulate matter can remain suspended in the air for much longer periods, potentially traveling further from the source of emission and affecting a broader area.

4. Cumulative Air Quality Impacts

Comment 361-3

- The DEIR also discusses the cumulative impact of the quarry's activities in the context of existing air pollution levels in the region. Fresno County already experiences elevated levels of air pollution, including high levels of PM10 and PM2.5.
- Scientific concern: When emissions from multiple sources (such as industrial operations, vehicular traffic, and agricultural activities) accumulate, they can exacerbate air quality problems in the region. A comprehensive approach to mitigating these emissions across all sources is needed. Without this, cumulative impacts could lead to significant degradation of air quality, particularly in areas that already exceed ambient air quality standards.

5. Non-Attainment Area Issues

Comment 361-4

- Fresno County is designated as a non-attainment area for both PM10 and PM2.5 under both state and federal air quality standards, meaning that air quality in the region already does not meet the required levels.
- Scientifically: Even modest increases in PM concentrations due to the project could worsen the area's non-attainment status, making it harder for the region to meet air quality goals. This could result in additional regulatory requirements and restrictions on future development, as well as further public health risks.

From a scientific standpoint, elevated levels of PM10 and PM2.5 from the Cemex Rockfield Quarry project present serious health risks, particularly for those living in the nearby. To minimize these impacts, stronger and more effective mitigation strategies are needed, alongside regular monitoring and adaptive management practices to ensure air quality standards are consistently met.

Health Risks Associated with PM 10/ PM 2.5

Comment
361-5

From a medical viewpoint, PM10 (particulate matter with a diameter of 10 micrometers or smaller) and PM2.5(particulate matter with a diameter of 2.5 micrometers or smaller) are considered significant environmental health risks due to their ability to penetrate the respiratory system and affect various organs. Below are the health risks associated with these fine particles:

1. Respiratory Diseases

- Asthma: Long-term exposure to PM10 and PM2.5 has been linked to the development and worsening of asthma, particularly in children. These fine particles can trigger asthma attacks and exacerbate symptoms like wheezing, coughing, and shortness of breath.
- Chronic Obstructive Pulmonary Disease (COPD): Prolonged exposure to particulate matter is associated with a higher risk of developing COPD, a progressive lung disease that includes chronic bronchitis and emphysema. PM2.5, is known to worsen airflow restriction and lung function over time.
- Bronchitis: Both short-term and long-term exposure to elevated levels of particulate matter can lead to chronic inflammation of the bronchial tubes (bronchitis), which causes persistent coughing and difficulty breathing.

2. Cardiovascular Diseases

- Heart Attacks: Studies have shown that long-term exposure to PM2.5 increases the risk of heart attacks (myocardial infarction) and other cardiovascular events. Fine particles contribute to systemic inflammation, which can damage blood vessels, increase blood clotting, and lead to arterial plaque buildup.
- Stroke: Chronic exposure to fine particulate pollution has been linked to an increased risk of stroke. The particles can affect the cardiovascular system, leading to high blood pressure and damage to blood vessels in the brain, increasing the risk of both ischemic and hemorrhagic strokes.
- Arrhythmia: Exposure to PM2.5 has been shown to contribute to heart arrhythmias (irregular heart rhythms), which can increase the risk of sudden cardiac events.

3. Neurological Effects

- Cognitive Decline: Recent research has shown a link between long-term exposure to PM2.5 and cognitive decline, particularly in older adults. Fine particulate matter can cause inflammation in the brain, which may lead to neurodegenerative diseases like Alzheimer's disease and other forms of dementia.
- Developmental Effects in Children: Children are particularly vulnerable to air pollution, as their respiratory and immune systems are still developing. Studies suggest that exposure to PM10 and PM2.5 can interfere with brain development, potentially leading to issues with memory, learning, and behavioral disorders.
- Mental Health Issues: Chronic exposure to air pollution has also been associated with mental health issues, such as anxiety and depression. The physiological stress caused by particulate matter may affect brain function and contribute to mood disorders.

4. Cancer Risks

Comment 361-5 Cont.

- Lung Cancer: There is strong evidence linking long-term exposure to PM2.5 with an increased risk of lung cancer. The fine particles can carry carcinogenic chemicals deep into the lungs, leading to DNA damage and potentially the development of cancerous cells.
- Other Cancers: While the most direct link is to lung cancer, long-term exposure to particulate matter has also been associated with increased risks of other cancers, including bladder cancer and cancers of the upper respiratory tract.

5. Premature Mortality

- Increased Mortality Rates: Long-term exposure to PM10 and PM2.5 is a significant risk factor for premature death. Studies have shown that individuals living in areas with high levels of fine particulate pollution have an increased risk of dying from conditions like heart disease, respiratory illnesses, and cancer.
- Life Expectancy: According to various studies, communities exposed to higher levels of particulate matter have a shorter life expectancy compared to those living in areas with cleaner air.

6. Vulnerable Populations

- Children and Infants: Children are particularly vulnerable to the effects of PM10 and PM2.5, as their respiratory systems are still developing. Chronic exposure can result in impaired lung function, developmental delays, and increased susceptibility to respiratory diseases.
- Elderly: Older adults, particularly those with pre-existing heart or lung conditions, are at higher risk for adverse health effects from particulate matter. Aging bodies are less able to cope with inflammation caused by air pollutants, increasing the risk of heart attacks, strokes, and respiratory infections.
- People with Pre-existing Health Conditions: Individuals with chronic conditions such as asthma, COPD, cardiovascular disease, or diabetes are more likely to suffer from exacerbated symptoms or complications when exposed to high levels of PM10 and PM2.5.

7. Pregnancy and Birth Outcomes

- Premature Birth: Pregnant women exposed to high levels of PM2.5 are at increased risk of premature birth and low birth weight. Fine particles can cause inflammation that affects the placenta and fetal development.
- Developmental Issues: In utero exposure to air pollution is associated with developmental delays and health issues in newborns, including problems with lung development and cognitive function.

8. Immune System Disruption

- Immune System Suppression: Prolonged exposure to particulate matter can impair the body's immune response, making individuals more susceptible to infections, including respiratory infections like pneumonia and influenza. The particles can interfere with immune cell function, making it harder for the body to fight off pathogens.

Conclusion

Comment 361-6

In summary, from a medical perspective, the health risks associated with exposure to PM10 and PM2.5 are extensive and include significant respiratory, cardiovascular, neurological, and cancer-related issues. Particularly vulnerable populations, such as children, the elderly, pregnant women, and individuals with pre-existing health conditions, are at greater risk. The scientific consensus

emphasizes the importance of reducing exposure to fine particulate matter to protect public health, particularly in areas with high pollution levels like those near industrial projects such as the Cemex Rockfield Quarry. As a resident adjacent to the Cemex Rockfield Quarry site I have concerns about the impacts of Blast Hardrock Mining.

Comment 361-6 Cont.

Water Quality and Domestic Wells (Section 4.5)

- Concern: The quarry's operations, particularly excavation, blasting, and water usage, may impact local groundwater resources. This could affect domestic wells, particularly if contamination from manganese, nitrates, or other pollutants occurs, or if the water table is altered due to the project's activities.
- Key Impact: Degradation of water quality and reduced water supply are significant concerns, as they could affect your access to clean, safe water for drinking, irrigation, and other uses.
- Recommendation: Ensure the quarry implements effective mitigation measures for groundwater protection, including baseline water quality testing and monitoring of local wells.

Air Quality and Dust Emissions (Section 4.3)

- Concern: Blasting, drilling, and aggregate processing at the quarry could generate significant amounts of dust, particularly PM10 and PM2.5 particles. These fine particles can have detrimental effects on air quality, human health, and the surrounding environment.
- Key Impact: Exposure to high levels of particulate matter can exacerbate respiratory issues, particularly for children, the elderly, and those with pre-existing conditions like asthma. Long-term exposure can contribute to other health problems.
- Recommendation: Advocate for robust mitigation measures to control dust, such as regular water spraying, dust suppression technologies, and air quality monitoring around residential areas

Noise and Vibration from Blasting and Operations (Section 4.9)

- Concern: The quarry's blasting activities, as well as heavy equipment operations, may generate high levels of noise and ground vibrations. These could disrupt daily life, damage nearby structures, and cause stress or health issues due to persistent noise.
- Key Impact: Noise from the quarry could interfere with sleep, work, and leisure activities. Blasting vibrations could potentially damage nearby homes and infrastructure.
- Recommendation: Push for the implementation of noise and vibration limits and ongoing monitoring to minimize disturbances. It would be beneficial to include a system of alerts for residents before blasting events.

In Summary-

Protection of water resources and domestic wells

Ensuring air quality standards to protect health

Minimizing the impact of noise and vibration from quarry activities

From:	Lon Edwards
To:	Randall , David A.
Subject:	Cemex No
Date:	Saturday, March 8, 2025 1:07:21 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Lonney Edwards
689 E Pintail Cir
Fresno CA 93730

03/07/2025

To Whom It May Concern,

Comment 362-1

I am writing to express my deep concerns regarding the proposed 100-year mining permit for CEMEX by the San Joaquin River in Fresno County in the State of California.

I believe this will have detrimental effects on our local environment. The area in question is vital not only for its natural beauty but also plays a crucial role in maintaining the health of our ecosystem. The mining activities proposed threaten to destroy the landscaping and disturb the delicate balance of our local habitats.

Comment 362-2

Furthermore, the potential for pollution is alarming. If any dust or toxic materials from the mining operations enter the nearby river, we risk contaminating our water supply. The impact on the San Joaquin River
and its tributaries could be catastrophic, affecting not only wildlife but also the health and safety of our community.

Comment 362-3

Given these significant environmental risks, I urge you to consider the long-term consequences of this decision. The effects of such mining activities could last far beyond the duration of the permit, impacting generations to come.

Therefore, I strongly advocate for a NO vote on this proposed mining permit.

Thank you for considering the voices of community members deeply invested in protecting our environment.

Sincerely,
Lonney Edwards

From:	Ingrid Fellows
To:	Randall , David A.
Cc:	sweaver@riverparkway.org
Subject:	Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Saturday, March 8, 2025 7:31:19 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

3-8-25
David Randall, Senior Planner
County of Fresno
Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David,
I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

Comment 363 -1

1) Noise from Blasting which will significantly impact residents daily lives and their property values
- Impacts to area residents have the potential to be significant
- The DEIR doesn't explain what residents would experience with blasting once or twice a day (which would be within the proposed threshold)
- The analysis lists three potential impacts related to damage to surrounding residential/commercial structures and damage to nearby groundwater wells, disturbance of nearby residents, or destabilization of the San Joaquin River embankment. The DEIR analyses damage to structures and wells and destabilization of the river embankment but barely mentions disturbance to residents.

Comment 363 -2

- It appears that they did not evaluate the impacts of blasting to users of the adjacent park"

"- The mitigation measures for noise impacts should be more specifically be required rather than a laundry list for the applicant to choose from.

Comment 363 -3

- The DEIR should have analyzed how much noise reduction each measure would result in and required particular combinations of measures to ensure noise is adequately reduced.

Comment 363 -4

- Because the project would increase nighttime noise for area residents, the DEIR should prohibit nighttime operations that increase noise. See pg. 4.13-60."

2) VOC and SO2 fumes due to new asphalt plant are hazardous to the local residents

Comment 363 -5

Impact 4.3-4: Result in other emissions (such as
those leading to odors) adversely affecting a
substantial number of people
"- The DEIR says that project emissions may exceed cancer risk thresholds. DEIR pg. 4.3-63. The DEIR says that because mitigation measures would reduce emissions, the DEIR did not evaluate population-wide cancer burden. DEIR at pg. 4.3-64. CEQA requires that the analysis be performed before taking into account implementation of mitigation measures."

I have grave concerns about blasting to a depth of 600 ft near several residential communities, not to mention our beloved San Joaquin River. The wildlife impact, the aesthetic impact, the noise, the noxious and carcinogenic fumes generated from the new asphalt plant- these are all items that are going to reduce the local residents quality of life as well as their property values. I strongly urge you not to allow the blasting portion of this project and the implementation of the asphalt plant. We do not wish to pay high property taxes to live in a carcinogenic garbage dump. On a personal level, I truly love the river and hope that we can maintain the few beautiful and wild areas we have in our valley.

Comment 363 -6

Thank you for your time and attention to this matter.
Sincerely, Ingrid Fellows

From:	Andrea Gerton
To:	Randall , David A.
Subject:	Please reconsider this CEMEX Rockfield Expansion Plan
Date:	Saturday, March 8, 2025 6:29:31 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hello,

Please reconsider this CEMEX Rockfield Expansion Plan. I work from home, and hearing explosives and drilling to excavate up to 600 feet below the surface would be extremely disturbing for me.

Comment 364-1

This change could also lead to further strain on our already limited local resources.

Comment 364-2

Thank you for your time and consideration to this matter.

Andrea Gerton

From: Paul Gordon
To: Randall , David A.
Subject: Public comment
Date: Saturday, March 8, 2025 3:40:24 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

=March 7, 2025
David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all. Comment 365-1

Impacts on Water Quality
the San Joaquin River

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions. Comment 365-2

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

â€¢ What is CEMEXâ€™s plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit? Comment 365-3

â€¢ Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites. Comment 365-4

â€*f*

Impacts on the San Joaquin River Parkway
Recreation

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline. Comment 365-5

â€¢ The DEIR should identify the timeframe and exact location of the trail to be constructed.
â€¢ The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Planâ€™s requirement for a 300-foot buffer between mining operations and public access
â€¢ The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are Comment 365-6

not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 365-6 Cont.

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

The DEIR identifies several unavoidable negative impacts, including:

â€¢ Scenic Degradation: The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.

Comment 365-7

â€¢ Traffic Congestion: Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on how mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 365-8

â€¢ Air Quality: The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 365-9

Threats to Wildlife

The DEIR fails to adequately analyze the impact on species like Swainsonâ€™s hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection. Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

Comment 365-10

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Comment 365-11

Thank you for your time and consideration.

Sincerely,

Paul Gordon
1588 E Eclipse Ave
Fresno, CA 93720

From:	Ann Guevara
To:	Randall , David A.
Cc:	Romy Yoshimoto
Subject:	A new take on the CEMEX Rockfield Expansion Project?
Date:	Saturday, March 8, 2025 2:22:51 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hi David Randall,

I'm certain your job isn't easy, though grateful to reach out to you about the CEMEX expansion project.

Comment 366-1

Is this project necessary or beneficial to the long term resiliency of the Fresno area? Sure money is great, and some say makes the world go round. But does it really (if we put short term greed aside)?

Not only do we probably not need this expansion project (if were being honest with ourselves), but it will do nothing to help our County thrive (economically, socially, environmentally...). I think of Butan and all their new economic growth projects, that also maintain a focus on the community and environment. While Butan is a nation smaller than the population of Fresno, they maintain the clean water source for 1/5 of the world's population. (A pretty impressive fact, that illustrates even small can be mighty.) Fresno is an incredible place. When I first moved here 20 years ago, I was told it was the armpit of California. I've found that is not true, though a project like the CEMEX Rockfield Expansion Project would certainly support that belief. Please consider the impacts of this project and any more sustainable alternatives.

Comment 366-2

Thank you for your consideration,
Ann

From:	Shannon Holmes
To:	Randall , David A.
Subject:	Drilling and mining the SJ Riverbed
Date:	Saturday, March 8, 2025 11:33:41 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 367-1

This is a bad idea for the citizens who live nearby the site, as I do, but mostly the environmental impacts this will create is unacceptable !!
NO TO DRILLING, DIGGING AND MINING OF THE SAN JOAQUIN RIVERBED !!

Sent from my iPhone

March 8, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

Comment 368-1

I am writing to express my concerns regarding the Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. I really fear that this project will threaten the San Joaquin River, local water quality, air quality, public recreation, wildlife, and even public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 368-2

Impacts on Water Quality and the San Joaquin River

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows yet fails to provide any solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events. Specifically,

Comment 368-3

- What is CEMEX's plan if major flooding breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Impacts on the San Joaquin River Parkway

Comment 368-4

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or any kind of timeline. At the very least the DEIR should identify the timeframe and exact location of the trail to be constructed. It should also describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access.

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 368-5

The DEIR identifies several unavoidable negative impacts. For instance,

- The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR.

Comment 368-6

- The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 368-7

Threats to Wildlife

Comment 368-8

The DEIR also appears to not adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, it uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Alaska standards? Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River? This section should be completely rewritten and recirculated for public comment.

Overall, given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Comment 368-9

Thank you for your time and consideration.

Sincerely,

Tom Holyoke

729 East Weldon Avenue

Fresno, CA 93704

From:	Valerie Johnson
To:	Randall , David A.
Subject:	Comments on CEMEX Rockfield Expansion Project DEI
Date:	Saturday, March 8, 2025 9:43:52 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall,
Senior Planner County of Fresno
Fresno, CA
Dear Mr. Randall,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have specific concern that I urge you to address prior to moving forward with approval.

Comment 369-1

Air Quality and Dust Emissions: "The DEIR says that project emissions may exceed cancer risk thresholds. DEIR pg. 4.3-63. The DEIR says that because mitigation measures would reduce emissions, the DEIR did not evaluate population-wide cancer burden. DEIR at pg. 4.3-64. CEQA requires that the analysis be performed before taking into account implementation of mitigation measures." This is particularly concerning to me.

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Comment 369-2

Sincerely,[Your Name]

Valerie Johnson

From: chris julian
To: Randall , David A.
Subject: March 8,2025
Date: Saturday, March 8, 2025 10:04:44 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 8,2025

David Randall, Senior PlannerCounty of FresnoFresno, CA Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Comment 370-1

Dear David, I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

Comment 370-2

1. Impacts on the San Joaquin River Watershed. My wife and I have lived directly across from the Cemex plant for the past 25 years in River View Ranch. Our water source is a community well run by Fresno County. We worry about the effect on our water quality and water supply with a 600 foot deep pit being dug between us and the most beautiful natural feature in the San Joaquin Valley, the river. No one can tell us the impact of this with any certainty; expert opinion may be given, but will be an extrapolation of theory and experience limited in accuracy by the complexity of the local environment. In other words, no one can guarantee me that the big pit want hurt our water.

Comment 370-3

2. Air Quality and Dust Emissions. Living across from Cemex, we have seen the dust and air quality issues for years. Expanding the scope and nature of the mining will certainly increase these emissions. I am doubtful of meaningful mitigation can be achieved. How will Cemex accomplish this?

Comment 370-4

3. Biological Resource Impacts. I have great concerns for the environment related to the increased mining. We have a wonderful mix of animals that live in and around are yard including currently an owl. In my yard over the past 25 years, I have seen the tiger salamander, a bobcat, coyotes, an osprey, voles, rabbits, field mice, squirrels, snakes, and, not to mention, many redtail hawks. The main corridor of wildlife in our area is the river. I remember the extreme environmental evaluation related to the widening of Friant Road carried out worrying about many issues but especially the vernal pools and the tiger salamander. Widening the road by ten feet each lane is a minor change to the environment compared to the future destruction of the ecosystem along the side of the river by the expansion of the Cemex mining digging a pit the size of a skyscraper. One wonders if the project could be achieved at a less environmentally sensitive site away from the river-has this been explored or addressed? What about the impact on the tiger salamander and the surrounding vernal pools?

4. Traffic and Noise Concerns. The trucks are noisy and often pull out with a long trailer behind them that require the surrounding traffic to slow down to avoid them. I always worry about the safety of drivers on Friant Road. I understand that blasting may be used in the future with obvious creation of noise and air quality problems. How can this be
achieved without the loud noise and mess? Again, is there a location not as environmentally sensitive as next to the river?

Comment 370-5

Comment 370-6

5. Cumulative Environmental Effects. I am sure there are other issues not already brought up by me that may affect the environment in the long run like leaching of chemicals or release of toxins that will increase over time. What about the fish in the river? The birds of prey that hunt these fields? etc. No human, expert or not, can known the long term damage of the project to me, my wife, our yard and the animals that live in it, the wildlife in and around the river, the air quality and the water quality for decades (10 of them) to come.

Comment 370-7

Comment(s) 370-8 370-9

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Comment 370-10

Sincerely,
Chris and Julie Julian

From: Dr. Kent Karsevar
To: Randall , David A.
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Saturday, March 8, 2025 8:10:06 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 8, 2015,

David Randall, Senior PlannerCounty of FresnoFresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David,I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. Comment 371-1

1. Impacts on the San Joaquin River Watershed are significant and damaging. Comment 371-2

2. Air Quality and Dust Emissions will be horrific for the area. Comment 371-3

3. Biological Resource Impacts will be significant and damaging. Comment 371-4

4. Traffic and Noise Concerns will be significant. Comment 371-5

5. Cumulative Environmental Effects will be significant and damaging. Comment 371-6

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Comment 371-7

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,

Kent Karsevar, Ed.D.

From:	David Kawano
To:	Randall , David A.
Subject:	CeMex Fresno
Date:	Saturday, March 8, 2025 12:25:32 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 372-1

I support CeMex enlarging their operation here in Fresno. The industry knows how to take care of the environment as well as setting explosives in their mining operation. The Fresno management actively takes part in taking care of their land and helping the community in times unexpected issues for the county arise.They
provide employment and keep the cost lower for industry. Please support their operation.

From:	Deborah
To:	Randall , David A.
Cc:	sweaver@riverparkway.org
Subject:	CEMEX Rockfield Expansion Project DEIR
Date:	Saturday, March 8, 2025 2:18:25 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David,

Thank you for the opportunity to comment on the Draft Environmental Impact Report. I strongly object to the proposed project because of the significant environmental damage and community impact which would result.
The San Joaquin River is our local waterway and it is important both for public recreation and as a habitat for wildlife.

Comment 373-1

Extending the mining for another hundred years and changing the depth of the mining as well as blasting hard rock will alter the environment significantly. Water and air quality will deteriorate. The San Joaquin Valley already struggles with these issues and this project will greatly worsen the situation. I live near Friant Road and the huge increase in truck traffic will create more noise, pollution and traffic hazards.

Comment 373-2

Comment 373-3

CEMEX borders on the San Joaquin River Conservancy and other public lands. The proposed mining will harm these environmental preserves. At a time in the history of the earth when we face unprecedented global warming, we must do everything we can to protect the climate, resources and environment .

Comment 373-4
373-5

Given these concerns, I ask the agency to require CEMEX to find less harmful alternatives. In the Fresno area we already have more than enough rock available for construction. It is essential that we protect the health of the San Joaquin River watershed and the local environment.

Comment 373-6
373-7
373-8

Thank you for your time and support!

Deborah Ledford
Sent from my iPhone

From:	Annabelle Lowndes
To:	Randall , David A.
Subject:	Opposition to CEMEX DIER Extension in Fresno, CA
Date:	Saturday, March 8, 2025 11:09:33 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall and Whomever else it may concern,

I am writing to express my strong opposition to the proposed extension of the CEMEX DIER mining operations in Fresno, CA. This extension poses significant risks to public health, the local environment, and the overall well-being of our community. I urge you to deny this extension and prioritize the safety and quality of life for Fresno County residents.

Comment 374-1

The continuation of CEMEX's operations would exacerbate air and water pollution, contributing to Fresno County's already poor air quality. The release of particulate matter and other pollutants from mining activities is linked to respiratory illnesses, cardiovascular disease, and other serious health conditions. Extending this project will disproportionately affect vulnerable populations, including children, the elderly, and low-income communities who already experience environmental burdens. I am a mother with an infant. Living in the Central Valley is already burdensome on our lungs and health, this plan would greatly exacerbate that.

Comment 374-2

The proposed extension threatens local ecosystems and wildlife. Mining operations consume substantial water resources, further straining our region's limited water supply during a time of ongoing drought and climate change. Additionally, the destruction of natural habitats disrupts local biodiversity and undermines efforts to protect our environment for future generations.

Comment 374-3

Noise pollution, increased traffic from heavy trucks, and the degradation of open spaces reduce the quality of life for nearby residents. The long-term social and economic costs of this extension outweigh any short-term financial gains. Our community deserves sustainable development that prioritizes environmental justice and public health. I live nearby this quarry and often utilize the outdoor public spaces with my family. I, like many other residents of North Fresno, believe I deserve a life of peace and good health.

Comment 374-4

I respectfully urge the Fresno County Board of Supervisors to reject the CEMEX DIER extension. Instead, I encourage you to pursue policies that protect our natural resources, promote public health, and invest in sustainable economic alternatives that benefit all residents. Our collective future depends on decisions that value people over profit and prioritize long-term community well-being.

Comment 374-5

Thank you for your time and consideration. I trust that you will act in the best interest of Fresno County residents and the environment by opposing this harmful extension.

Sincerely,
Annabelle Lowndes

From: Kyle Lyman
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Saturday, March 8, 2025 9:06:56 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

3/8/2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 375-1

Impacts on Water Quality & the San Joaquin River

Comment 375-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?

Comment 375-3

- Who will be responsible for cleanup and long-term damage if the

pit becomes part of the river system?

Comment 375-3 Cont.

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 375-4

Impacts on the San Joaquin River Parkway & Recreation

Comment 375-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trailsmeet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 375-6

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 375-7

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 375-8

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 375-9

Threats to Wildlife

Comment 375-10

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 375-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Living near the San Joaquin River most of my life, it would be devastating to our future generations to not receive the same benefits of having this vital resource. I hope the county takes all this into consideration and chooses our people over profits. We need our river to

keep Fresno strong.

Thank you for your time and consideration.

Sincerely,

Kyle Lyman
1205 E. Perrin Ave, Apt.207
Fresno, CA 93720

From: marie meade
To: Randall , David A.
Subject: CEMEX
Date: Saturday, March 8, 2025 9:28:51 AM

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Report Suspicious

Comment 376-1

Kindly stop ruining the environment by allowing blasting rights to bleed gravel at the cost of beauty, birds, trees snd plants, much less the river in their natural home. Let the earth breathe so we can breathe as well. Thank you, Marie Meade
Sent from my iPhon

From: Norell Naoe
To: Randall , David A.
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Saturday, March 8, 2025 8:54:40 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 8, 2025

David Randall, Senior Planner County of Fresno

Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear Mr. Randall,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

Comment 377-1

1. Impacts on the San Joaquin River Watershed: The San Joaquin River is an important natural resource beloved by Fresno County residents. Generations of Fresnans have spent many a hot summer along the banks of the river during River Camp, learning about the ecology of our environment and learning to appreciate the beauty of Fresno! The CEMEX Rockfield Expansion Project may damage the river preventing future generations from the opportunity to enjoy all that the San Joaquin River has to offer.

Comment 377-2

2. Air Quality and Dust Emissions: As a resident of the Woodward Lake Community, excessive dust is already an issue from the farming fields across the river in Madera. Explosive mining would create additional airborne particulate matter and add to Fresno's already poor air quality.

Comment 377-3

3. Biological Resource Impacts: Lost Lake is also another recreational area that would be greatly impacted by the CEMEX expansion. I can't imagine picnicking or camping at Lost Lake with heavy explosives detonating nearby!

Comment 377-4

4. Traffic and Noise Concerns: Friant Road is busy and dangerous with many heavy construction and cement trucks. Additional heavy trucks along Friant are the last thing this community needs. As a resident, I'm extremely concerned about the potential noise from the explosives being proposed at the CEMEX site. It would be extremely unnerving to hear continual blasting, it would feel like we were living in a war zone!

Comment(s) 377-5 377-6

5. Cumulative Environmental Effects: All around, expanding CEMEX with blasting at Lost Lake for the next 100 years would be a tragedy and would end the potential neighborhood expansion in Northeast Fresno and Madera.

Comment 377-7

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this

Comment 377-8

review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

Comment 377-8 Cont.

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,

Norell Naoe

From:	Jack Roberts
To:	Randall , David A.
Subject:	CEMEX
Date:	Saturday, March 8, 2025 1:10:40 PM
Importance:	High

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

> Dear Mr. Randall,
>
> I am writing to oppose the approval of CEMEX 100-year lease. The DEIR is inadequate. Comment 378-1
>
> 1. Toxic chemicals will leach into the San Joaquin River and affect wildlife and human health. The dig pit is too close to the river Comment 378-2
>
> 2. Explosions will be heard by cyclists, hikers, boaters, and all other visitors to the San Joaquin River. This will make for quite an unpleasant experience for those hoping to enjoy the river and its wildlife. Comment 378-3
>
> 3. A 600 ft deep pit will not be a pleasant site. I do not want to look over the San Joaquin River and see such destruction. The San Joaquin River is the jewel of Fresno. Don't destroy it!!! Comment 378-4
>
> 4. The number of jobs this mine created is nothing compared to the amount of money brought by visitors to the region who recreate along the San Joaquin River. Comment 378-5
>
> Jack Roberts
> 642 East Griffith Way, Fresno CA 93704
> (559) 709-8702

From: bonnadon@comcast.net
To: Randall , David A.; Bredefeld, Garry
Subject: CEMEX project
Date: Saturday, March 8, 2025 3:42:16 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I am writing to express my opposition to the Cemex project. Comment 379-1

First of all, the length of the project, 100 years, is way too long for any contract or project. We do not know the environmental or economic impacts of things that may be 10 years down the line, much less 100.

This project threatens water quality, impacts fish and wildlife and will lead to noise, air, water and environmental pollution. Comment 379-2

Digging down 600 feet could adversely affect water tables. Comment 379-3

Sincerely yours,

Bonna Rogers-Neufeld, M. D.

From:	Erika San Roman
To:	Randall , David A.
Subject:	Public Comment on CEMEX Rockfield Quarry Modification Project (EIR 7763)
Date:	Saturday, March 8, 2025 1:48:49 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

As a Fresno County resident and mother who cares deeply about our environment and community, I'm very concerned about the impacts of the proposed CEMEX Rockfield Quarry Modification Project (EIR 7763). Comment 380-1

There are serious issues with the project's Draft Environmental Impact Report (DEIR) that I believe need immediate attention:

1. Water Quality Concerns: Comment 380-2
The DEIR downplays the risk of major water contamination if the barrier between the San Joaquin River and the mining pit is breached. Given CEMEX's troubling record of environmental violations (over $43 million in fines since 2000), it is alarming that there are no mandatory financial safeguards in place. The DEIR needs stronger protections, including guaranteed funding set aside for cleanup if a disaster occurs.

2. Lack of Need for the Project: Comment 380-3
According to the Aggregate Sustainability in California report (2018), Fresno County already has nearly double the aggregate resources needed for the next 50 years. It makes no sense to cause further environmental harm along the San Joaquin River when there's already plenty of supply elsewhere.

3. Air Quality and Community Health: Comment 380-4
Blasting, drilling, and increased truck traffic will worsen Fresno's air quality and could harm residents' health, especially children and elderly people in nearby communities. The DEIR needs much stronger measures to limit these harmful impacts on air quality.

4. Traffic Problems: Comment 380-5
The DEIR admits that traffic congestion at key intersections will significantly increase but does not require CEMEX to fully pay for necessary improvements. Given CEMEX's profits, it's unfair for residents to bear these traffic issues. The company should fully fund intersection improvements and new traffic signals.

5. Environmental and Visual Impacts: Comment 380-6
The DEIR recognizes the permanent damage this project will cause to our landscape but

fails to offer meaningful solutions. We risk losing wildlife habitats, recreational spaces, and the natural beauty of our river parkway.

Comment 380-6 Cont.

I urge the county to require better alternatives, including reduced mining depths, greater setbacks from the river, stronger air quality measures, guaranteed cleanup funds, and fully funded traffic improvements by CEMEX.

Comment 380-7

Thank you for taking our community's concerns seriously. We must prioritize long-term environmental health and the safety and quality of life of all Fresno County residents.

Sincerely,
Erika San Roman
Fresno County Resident

From: caitlyn@r-bproperties.com
To: Randall , David A.
Cc: sweaver@riverparkway.org
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Saturday, March 8, 2025 11:09:02 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

Comment 381-1

Quarrying activities have a negative effect on the surrounding towns, the environment, and the health and safety of the workers and residents of the quarries such as landscape degradation, habitat destruction, air and water pollution, and noise pollution. Furthermore, the fumes and others residues of the blasted explosives have caused biodegradation and hazardous impacts on the ecosystem survival in a quarry environment. Most of the blasted explosives are stable in soil due to their chemical structures and easily binding to the soil organic matter, which making soil remediation difficult. Take for example, Winfield et al (2004), wherein he states the has been presence of 2,4,6-trinitrotoluene (TNT), hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX, hexogen) and octahydro-1,3,5,7-tetranitro-1,3,5,7tetrazocine (HMX, Octogen) in soil, surface water and groundwater in locations where these explosives are being used. Hexogen and Octogen have resulted to decrease in terrestrial plant biomass, abnormality growth in terrestrial plants and decrease in biomass and fertility of earthworm (Best et al., 2006, Rocheleauet al., 2008, Winfieledet al., 2004; Vila et al., 2007, Lachanceet al., 2004, Krishnan et al., 2000).

Comment 381-2

The direct contamination effects of residual explosive on living inhabitants of an ecosystem include eye irritation, health deterioration, air, water and land pollutions, and the indirect influences are on inanimate living creatures upon which man and animal depend. The plants and vegetation that are responsible for photosynthesis and oxygen production are suffering undergrowth and development which in return have effects on animate creatures that depend upon them. The study therefore suggested that quarry operators should ensure appropriate and proper selection, application and detonation of explosives during quarry operations.

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

Comment 381-3

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,

Cat Sanders-Smith

Leasing Consultant
Terrace View Apartments
344 West Nees, Fresno, CA 93711
T (559) 432-0334
F (559) 435- 5015

From:	Susan Sanford
To:	Randall , David A.; sweaver@riverparkway.org
Subject:	Comment on CEMEX Rockfield Expansion Project DEIR
Date:	Saturday, March 8, 2025 9:28:41 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 382-1

Dear Mr Randall,

I know I'm supposed to be specific with my comments, but my obligations as a family caregiver, and much more, preclude my having sufficient time to do so.

I would simply offer that it would be wise to consider all that has transpired in the world since 1925...environmentally, technologically, socio-politically. With the astonishing rate at which all those things continue to change, it makes no sense to grant CEMEX permission for any further extraction of resources for a century.

Children alive now may live to see 2125. I humbly suggest that the decision-makers of today cannot fathom what their world will be like, but need to make the life-affirming choice to deny further extraction activities by CEMEX.

Sincerely,
Susan Sanford

Susan Sanford
susan.tgbg@gmail.com
The Great Big Gift
mobile: 530-446-1342

From:	Laura Silberman
To:	Randall , David A.
Cc:	Laura Silberman
Subject:	CEMEX Rockfield Quarry Modification Project EIR
Date:	Saturday, March 8, 2025 1:17:01 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am opposed to the renewal of the CEMEX mining operation. Comment 383-1

I am particularly concerned about air pollution as a result of increased truck traffic. The DEIR says that project emissions may exceed cancer risk thresholds. Refer to DEIR pages 4.3–63. I understand that the DEIR did not evaluate the population-wide cancer burden. Refer to pages 4.3–64. CEQA requires that the evaluation be performed before taking into account implementation of mitigation measures. Comment 383-2

Will CEMEX be following these CEQA requirements ?

In addition, will the DEIR analyze the impacts of blasting on wildlife ? Comment 383-3

Thank you for your attention
to these matters.

Laura Silberman
Fresno. 93711

Sent from my iPhone

From: Message Center
To: Randall , David A.
Subject: CEMEX Rockfield Project
Date: Saturday, March 8, 2025 4:32:10 PM

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Report Suspicious

Comment 384-1

Hello, I'm wanted to send an email to state my disapproval of this project. This project is bound to destroy the San Joaquin River and we don't need another river or ecosystem destroyed. Please don't let this project happen.

Get Outlook for Android

From:	John Watkins
To:	Randall , David A.
Subject:	CMEX Expansion Protest
Date:	Saturday, March 8, 2025 12:06:28 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall:

I live in the Copper River area and I oppose the CMEX expansion on the San Joaquin River. It will have a significant negative impact on the environment.

Comment 385-1

Sincerely,

John Watkins
1525 E. Mirasol Lane
Fresno. CA 93730
559-313-1580

From:	AnaTom W
To:	Randall , David A.
Cc:	District 2
Subject:	Stop CEMEX from operating at our neighborhood
Date:	Saturday, March 8, 2025 4:24:32 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. David Randall

Fresno County Public Works and Planning Department

Dear Mr. Randall,

I have been a resident of Fresno Bluffs for the last 30 years and had numerous close calls while driving on Friant Road due to the heavy truck traffic generated by the CEMEX company in the middle of residential area.

Comment 386-1

Vast majority of Fernans believe that a city at our location needs to pivot from polluting heavy industry to a service economy. Why don't you guys?

Comment 386-2

I can tell you that extension of operating permits for CEMEX will make many of my neighbors in the Bluffs REALLY angry and we will not hesitate to show it.

Please, make a smart decision that is aligned with the will and interest of your constituency and stop CEMEX from operating in our neighborhood.

Sincerely,

Tom and Anna Wielicki

From:	Carolyn Yale
To:	Randall , David A.
Subject:	comments on Cemex project EIR
Date:	Saturday, March 8, 2025 11:29:09 AM
Attachments:	yale_commentsRockfieldproject.pdf

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 387-1

Greetings,
Below are my comments on the proposed project. Also in the form of an attached file.

FYI: I am retired, and do not live in Fresno, but I have kept up an interest in the SJR and restoration efforts.
At USEPA I worked on SJ RIver issues for several decades, starting with the legal challenge to renewal of Bureau of Rec.water contracts and continuing through water-related plans and projects in the SJ region. Before EPA , I worked in CA as a planner (land use) at the local land and county levels .

Carolyn Yale

My comments:

March 8, 2025

to: David Randall, Fresno Co. Public Works and Planning Dept.
from: Carolyn Yale, Oakland, CA. 510=325-5005
RE: Proposed Cemex Rockfield project

Comment 387-2

I am writing to oppose the Cemex Rockfield proposal to continue and expand mining and processing at sites immediately adjacent to the San Joaquin River. The proposed project would substantially expand these activities under a permit lasting 100 years. Although the site has been used for mining and processing for over a century, these operations are incompatible with the surrounding natural and human environment as it exists today. Expanding the project exacerbates the conflict between an industrial use and a reach of the San Joaquin River corridor that is designated for public use as a Parkway. Rather than approving a new permit, plans should be made to close out the mining and processing operations out at the end of the current 2026 permit.

Comment 387-3

Times change: If the mining/processing was acceptable years ago, it is now within an area that is valued for its recreational and natural resource values. This fact is barely mentioned in the EIR section on existing conditions, which instead focuses on the project site. There is almost no substantive information about conditions “in the vicinity” of the project (to quote CEQA). The EIR overlooks the fact that there has been major investment of time, effort and funds on the part of many agencies, citizens and various organizations to reestablish more natural conditions in the river (flows) and on functionally connected lands for the benefit of recreation, fish, riverine habitat and floodplains. The vision for river restoration and subsequent planning and projects date from the last century, following passage of the federal Central Valley Project Improvement Act (1992).

Comment 387-4

In terms of policy, the EIR cites a policy overlay relating to the Parkway, suggesting intent of conforming County land use decisions to the San Joaquin River Conservancy plan for the Parkway., but this is qualified. Overall, treatment of state and local policies, standards, County zoning, and the limited impact analysis itself, seem designed to make the case that approval of this project would be perfectly defensible from a legal standpoint. There may well be concerns about project impacts – for example, on base flow in the River resulting from a 600-foot deep, dewatered pit, or how blasting affects fish, birds, people. But the County's decision on the proposal should not revolve around technical details of project operations.

The main question is a matter of policy. Whether or not to permit continuation and expansion of an industrial land use that conflicts with the Parkway river corridor. The County has the discretionary authority to say no to Cemex. I would remind you that the possibility of restoring the San Joaquin River started with a challenge to renewing 40-year water contracts that had dried up reaches below Friant Dam. From a larger, societal perspective, there are other options for gravels mining and processing--but only one San Joaquin River.

From:	Thomas Zynda
To:	Randall , David A.
Subject:	CEMEX Proposal for River Mining
Date:	Saturday, March 8, 2025 10:17:35 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Dranall,

Comment 388-1

This follows up on my message to you of March 8, in which I voiced my opposition to the CEMEX proposal to use blasting to mine our local area of the San Joaquin River , which project would entail extreme destruction of the river as well as other environmental degredation.

It appears that the current Enivorment Impact Study has severely underestemated or simply ignored the extreme deleterious effects of this project on Fresno Air Quality.

In this follow-up message I wish to add my concern about the extremely serious degradation of our Fresno air quality that this project would cause. The use of explosives to mine rock sends an enormous amount of rock duct into our air, as well as the airborne chemical products of the explosives used. There is no way to mitigate that result, so the blasting must not allow to occur.

Fresno already has some of the worst air quality in the United States. I already have to use multiple prescrition medications to attempt to deal with it. And my neighborhood has families with young children, and it's very well known that poor air quality has negative effects on the brain development of children such that it lowers their IQ's.

So I respectfully that you all in your power to reject any proposal of CEMEX to continue its mining of the San Joaquin River in order to protect the lives of those of us who live in the wide Fresno Area.

I thank you for your attention to this message.

Sincerey,

Thomas H. Zynda

--
This email has been checked for viruses by Avast antivirus software.

From:	Jacinta Amaral
To:	Randall , David A.
Cc:	Jacinta Amaral; Tom Breen
Subject:	Cemex expansion
Date:	Sunday, March 9, 2025 11:44:02 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. David Randall, Senior Planner Fresno County Public Works

I am deeply concerned that your office and the Fresno County Board of Supervisors is considering this request for a 100 year lease to continue and expand the company's operations near the San Joaquin River. I am against the expansion of the Cemex project. Comment 389-1

It is my understanding that the p[lan to extract rock which will then be ground to gravel by blasting a 600 foot deep and half a mile wide pit. Many concerned citizens now know that the pit would be twice as deep as Millerton Lake and that the half mile wide which would be similar to the distance from, say, West Avenue to Fruit Avenue. I find it very difficult to imagine a hole of this size. I find it more difficult to come up with sane reasons to blast a hole this size right next to the San Joaquin River and in the flood plain of the San Joaquin River. For Cemex the sane reason for this incredible excavation is profit. Comment 389-2

The size of the hole is stunning. The length of the lease is mindboggling. The destruction of the beauty of the San Joaquin River environment is sickening. And there is no such thing as a one hundred year guarantee that river an its environs will be adequately cared for and protected for all those one hundred years. Comment 389-3

Thank you for your attention in this matter.

--
Jacinta Amaral, Ph.D.
Jacintaa@mail.fresnostate.edu

From:	Marc Ament
To:	Randall , David A.
Subject:	our Comments are NO! on Cemex project proposal on SJ River
Date:	Sunday, March 9, 2025 1:58:40 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

We say NO! to the Cemex blast mine project! We strongly OPPOSE this project. — Comment 390-1

Thank you for bringing this egregious proposal to our attention and giving us a chance to make our voices heard. We live a stones throw from the beautiful river parkway and wish to preserve the natural beauty and resources of the San Joaquin River. The existing gravel quarry is more than enough already. The idea of expanding that and bringing more destruction to the environment, pollution of the river and the air, noise pollution, heavy and dangerous truck traffic on Friant Road, where families are trying to cross the intersection to enjoy Woodward Park and the river trails. Friant Road is currently one of the most dangerous streets in Fresno, with a higher than average number of collisions at several intersections along the park and river trails area. With increased gravel and cement truck traffic there, it is a statistical fact that there will be more and more serious, even fatal, accidents along that corridor. Also, I am not a civil engineer but I even worry that the impacts of heavy explosives near Friant Dam could bring a high risk of dam collapse. The project is not viable from a benefit/risk calculation. Who benefits? just Cemex, not our community! — Comment(s) 390-2, 390-3, 390-4, 390-5, 390-6, 390-7

Please deny this destructive project. It will do nothing to the betterment of our community and the natural resources of the San Joaquin River parkway and surrounding area.

Let us know if there is anything else we can do to keep this project from going forward.

Sincerely yours,
Marc Ament and Mary-Elin Kelly
559-706-5437

From:	Katurah Andrews
To:	Randall , David A.
Subject:	Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report
Date:	Sunday, March 9, 2025 10:13:29 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

The CEMEX Rockfield Project is an irresponsible project that will do unnecessary lasting damage to the San Joaquin River and surrounding areas.

I request that the Planning Department reconsider this permit in light of the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.

Thank you for your time and consideration.

Comment 391-1

From:	Saeed Attar
To:	Randall , David A.
Cc:	Saeed Attar
Subject:	Letter of Concern
Date:	Sunday, March 9, 2025 4:33:11 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. David Randall, Senior Planner
Fresno County Public Works & Planning Department
Division of Development Services & Capital Projects
2220 Tulare St., 6th Floor
Fresno, CA 93721

Dear Mr. Randall:

I am writing to formally express my strong opposition to the proposed **CEMEX Rockfield Expansion Project in Fresno.** This project, if allowed to proceed, will pose serious and irreversible environmental health hazards to our community, jeopardizing the well-being of residents and the ecological integrity of our region.

Comment 392-1

The detrimental impacts of this project are extensive and deeply concerning. Scientific evidence and similar case studies have shown that projects of this nature significantly contribute to air and water pollution, increase the risk of respiratory illnesses, and degrade natural ecosystems. Specifically, the chemical runoff and toxic emissions will expose our community to hazardous substances, leading to increased health risks such as asthma, lung disease, and other long-term medical conditions.

Comment 392-2

Furthermore, the disruption of the San Joaquin River and increased noise and traffic pollution will not only threaten our natural habitat but also negatively impact property values and the quality of life of thousands of residents. The proposed project neither adequately addresses these risks, nor does it offer substantial measures to mitigate the foreseeable damage.

Comment 392-3

Given the magnitude of these risks, I urge the agency to reject this project and instead advocate for environmentally sustainable alternatives that prioritize public health and safety and to ensure that the long-term health of the San Joaquin River watershed and surrounding communities is protected. The residents of Fresno County deserve to live in an environment that fosters health, security, and sustainability, rather than one threatened by pollution and industrial hazards.

Comment 392-4

The well-being of our families, children, and future generations must take precedence over industrial interests. I strongly encourage the agency to reconsider this project's approval and take proactive steps toward more sustainable and community-friendly developments.

Thank you for your attention to this urgent matter. I look forward to your prompt response and action in safeguarding our community.

Sincerely,

Saeed Attar

From:	Amy Barron
To:	Randall , David A.
Subject:	Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Sunday, March 9, 2025 11:40:17 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. Comment 393-1

Drilling in the river for mining purposes is highly problematic for several reasons. Extending mining operations for another 100 years significantly amplifies the environmental impact over time, causing long-term harm to the river's ecosystem. Comment 393-2

The change in technique from mechanical digging to blasting hard rock and crushing it into gravel increases the potential for habitat destruction and water pollution, as this method creates more disturbance to the surrounding environment and releases harmful sediments into the water. Comment 393-3

Additionally, increasing the mining depth to 600 feet below the ground surface risks destabilizing the riverbed, possibly leading to changes in water flow and threatening aquatic life. These activities not only jeopardize the river’s health but also the livelihoods that depend on its natural resources. Comment 393-4

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

Thank you for your time and consideration of these comments.

Sincerely,
Amy Barron

From:	Sharon Benes
To:	Randall , David A.
Subject:	CEMEX Rockfield Expansion Project
Date:	Sunday, March 9, 2025 11:36:54 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

This proposed expansion project by CEMEX Rockfield is a project that needs to be STOPPED. The San Joaquin River Conservancy Trust over the last 30 years or so, has done a remarkable job of preserving land along the SJ River, making it accessible to the public for recreational and educational opportunities. Comment 394-1

I work in agriculture and fully appreciate its importance and the role of farmers in land stewardship. But along with that agriculture comes a massively transformed landscape in the San Joaquin Valley from Tule marshes, grasslands and trees to orchards, homes and shopping malls and a great loss of vegetation and wildlife. Comment 394-2

The San Joaquin River represents the last truly natural place within the city and surrounding area and it is of tremendous value to the quality of living in Fresno.
I recently went on a canoe trip at Sycamore Island with the SJ River Parkway group to see bald eagles. I arrived within 20 minutes of leaving my home and was on the water and we did see two bald eagles, along with their nest. I also try to do a canoe trip every summer. I do not have to travel far and I have a few hours of tranquility on the river and then I return to my busy life.

Gravel mining has always been done along the river and the Parkway has worked to reverse some of this damage. Rock mining and a 600 ft. pit is a whole other level of disruption to the river and its hydrology and biology. This will unravel what the work of so many volunteers has achieved along the river such as removal of invasive species, restablishment of native plants, trash removal and flow restoration. The CEMEX Expansion Project represents a huge blow to these conservation efforts and I fail to see how jobs and tax revenue can compensate for this damage. It represents short term gain for long term loss. Comment 394-3
Please have the courage to stop the project.

Thank you for your consideration.

--Sharon Benes

--
Sharon E. Benes, Ph.D.
Professor and J.G. Boswell Endowed Chair in Plant Science
Department of Plant Science
California State University, Fresno
2415 E. San Ramon Ave., M/S AS72
Fresno, CA 93740-8033
(559) 278-2255

From:	PERMINDER BHATIA
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR
Date:	Sunday, March 9, 2025 4:41:37 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David
I appreciate the opportunity to submit comments on DEIR for the Cemex Rockfield Expansion project. This project causes significant dust and environment impact. The dust it produces causes lot of allergies and lung diseases. As living in the neighbor hood close to it (Monte Verdi), We suffer from a lot of allergies due to dust. Fresno Clovis area is always full of allergies and has the largest number of people suffering from chronic allergies. I would ask the County Supervisors to vote against the project.
Thanks

Comment 395-1

Perminder Bhatia
12382 Via Il Prato
Clovis,CA,93619

From:	ShayWraithQueen
To:	Randall , David A.
Subject:	Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report
Date:	Sunday, March 9, 2025 9:23:40 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Veronika Carrillo
Fresno, CA, 93704
shaywraithqueen@gmail.com
559-475-4648
3/9/25

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Mr. Randall,

I am writing to formally express my opposition to the proposed 100-year permit for the CEMEX mining operation and to challenge the adequacy of the Draft Environmental Impact Report (EIR) prepared for this project. The EIR, as currently drafted, does not sufficiently or accurately assess the environmental, ecological, and community impacts that this long-term operation will have on the San Joaquin River and surrounding areas.

Comment 396-1

As someone with experience in Anthropology, I find that the EIR fails to adequately address the following concerns:

Comment 396-2

The San Joaquin River is an important staple in the valley and is rich with natural and historical resources. It's the life's blood of much of the valley and must be cared for. As an anthropologist, I am concerned with the ramifications of what blast mining could have on the surrounding area. In order to avoid possible destruction of Native cultural sites, the area that CEMEX wishes to blast in needs to have a sanctioned archaeological survey done to ensure that the work being done will not damage or disrupt sites of cultural significance. If this step is ignored, it could result in legal ramifications.

Comment 396-3

I am a citizen of the valley. I was born here and as such I have heard my family and doctors speak of the poor air quality in the valley. My family and I have asthma from the pollution in the valley's air. As do many other citizens. If blast mining takes place, the air quality of the valley will grow worse and many people will become sicker. There is also the concerns of

Valley Fever. People here already contract the sickness from the fungus in the earth. If there is any of the fungus in the soil along the river, it could feel the air and infect countless citizens. The health risks need to be considered. A survey of that area for the fungus should be done before any blasting takes place.

Comment 396-4

A project of this scale and duration requires a far more comprehensive environmental review that includes thorough scientific analysis, long-term cumulative impact assessments, and meaningful mitigation strategies. The EIR, as it stands, does not meet these standards, and I urge Fresno County to require revisions that fully account for the long-term consequences of extending CEMEX's mining operations.

Comment 396-5

I request that the Planning Department reconsider this permit in light of the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.

Thank you for your time and consideration.

Sincerely,
Veronika Carrillo

From: Robin Cassinerio
To: Randall , David A.
Subject: DIR for Cemex Expansion -- HELL NO
Date: Sunday, March 9, 2025 9:01:33 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

This is not acceptable and I just received notice this week! Comment 397-1

Comments are due tomorrow March 10, 2025??? What the heck??? I can see what they are trying to get away with and it makes no sense based on the environmental impact on the water quality, the entire San Joaquin river bottom, public recreation, fish and wildlife and current housing, ranching or other businesses in the area. As a lifelong Fresnan I am completely against this project. It needs to stop. NO NO NO to rock blasting. Comment 397-2 Comment 397-3

Even the current CEMEX business is a hazard to the surrounding area traffic and noise pollution. Comment 397-4

Robin Cassinerio
1441 East Cromwell
Fresno Ca. 93720

559-284-8337

Sent from my iPhone

From: Allyson Chun
To: Randall , David A.
Subject: CEMEX Rockfield Expansion Project DEIR comments + questions
Date: Sunday, March 9, 2025 10:51:36 PM

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Report Suspicious

9 March 2025

David Randall, Senior Planner
County of Fresno
Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear Mr. Randall,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. Comment 398-1

1. Impacts on the San Joaquin River Watershed

Further drilling and excavation will deplete resources of an already fragile ecosystem in a changing climate where wildfires, landslides, and floods are more common than before. Comment 398-2 There are multiple studies linking mental health benefits to spending time outdoors. This project will impact scenic views and make it challenging for people to unplug and enjoy being outside. Comment 398-3 How will the landscape change under this current proposal? Will mining cause erosion and weaken foundations to nearby topography, roadways, and buildings? Comment 398-4

2. Air Quality and Dust Emissions

The Valley already has some of the poorest air quality in the U.S. due to geographical location and dust from agriculture, not to mention the risk of asthma and Valley Fever. This 100-year project will further degrade air quality with particulates and dust in one of Fresno's most popular areas for outdoor activities. What are the air quality impacts and long-term ramifications of having rock crushing, blasting, and drilling so close to where people commonly recreate? Comment 398-5

3. Biological Resource Impacts

This project will likely impact nesting and migration for hawks, owls, and bats. The area is also host to many four-legged wildlife such as rabbits, foxes, coyote, and deer, all of which will likely have their habitats fragmented. Comment 398-6 Drilling, blasting and excavation can also damage local water quality which has negative marine life, farming, and potable water impacts. Have studies been done to ensure that wildlife and water quality are not affected? Comment 398-7

4. Traffic and Noise Concerns

Comment 398-8

Construction trucks for this project will further congest roadways that have already had the speed limits lowered within the last year due to traffic. Increased traffic will lower air and road quality and amplify noise in those areas. Furthermore, blasting is a noise concern for local residents, especially for those with pets and people suffering from PTSD. What precautions will be taken to mitigate the increased traffic and noise levels from this project?

Comment 398-9

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,
Allyson Chun

From:	Holly Clinard
To:	Randall , David A.
Subject:	Comment on CEMEX's DEIR
Date:	Sunday, March 9, 2025 11:58:45 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hello, Mr. Randall—

I am writing to express my strong opposition to the proposed CEMEX Rockfield Expansion Project, which threatens to irreversibly damage the San Joaquin River and the surrounding environment for generations to come. As a parent, I have spent countless hours with my children enjoying the natural beauty of the river, and I am deeply concerned that this project will destroy a cherished local resource.

Comment 399-1

The proposed expansion, which includes blasting hard rock instead of traditional sand and gravel mining, represents a significant escalation in environmental harm. The impact of a 600-foot-deep mine—equivalent in scale to a 43-story high-rise—will permanently alter the river bottom, disrupt wildlife habitats, and degrade water quality. The project description fails to adequately address the long-term consequences of such a massive excavation, including how it will affect groundwater levels, sediment transport, and the delicate ecological balance of the region.

Comment 399-2

Additionally, the need for this expansion is highly questionable. The project proponents have not provided sufficient evidence that additional aggregate resources are necessary at this scale, nor have they justified the supposed economic benefits in terms of jobs. Any short-term economic gain is vastly outweighed by the permanent destruction of an irreplaceable natural area.

Comment 399-3

Furthermore, the Environmental Impact Report (EIR) lacks sufficient mitigation measures to protect local communities from the noise, dust, and vibrations associated with blasting. The transition from mechanical excavation to blasting introduces new hazards, yet the project documents fail to fully account for the risks of airborne particulate matter, potential seismic effects, and the broader environmental footprint.

Comment(s) 399-4 399-5

The San Joaquin River is a vital resource for our community, providing recreation, wildlife habitat, and ecological benefits that cannot be replaced. I urge you to reject this proposal and protect the river for future generations.

Comment 399-6

Sincerely,

H O L L Y C L I N A R D
art educator | master's student in art education
RESIDENT OF CLOVIS

From:	Priscilla Craft
To:	Randall , David A.
Cc:	Priscilla Craft
Subject:	CEMEX Expansion Protest
Date:	Sunday, March 9, 2025 2:56:30 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division

Dear Mr. Randall,

I have lived in Fresno since 1967. I have enjoyed many years along the San Joaquin River hiking, cycling and canoeing. We are so fortunate to have such a beautiful river so close to Fresno. Why do we want to ruin the Lost Lake area with such a horrendous mining project? — Comment 400-1

The CEMEX proposal for the Rockfield Expansion Project along the San Joaquin River threatens so much. This proposal location is surrounded by popular picnic areas, hiking trails, biking, and fishing. This project is highly unusual and like no other local project in the past because of two main unacceptable factors: — Comment 400-2

1. 600 Foot Depth over 100 years: Other quarries have typically been only 30 to 50 feet deep and permitted for only 30 to 50 years. No one knows the effects to the river and environment with a 600-foot hole 100 years from now. What sediment is that deep? What potential toxins will seep into the river? How will restoration look with such a deep hole? What assurance do we even have that restoration will ever be enforced and followed through, since none of us will be alive by then?

2. Drilling and Blasting: This has NEVER been permitted on the river. While nonprofits are preserving more and more public trust properties all around this proposed site for the purpose of outdoor recreational use, and building more and more trails, CEMEX wants to blast this area with explosives. This is ABSOLUTELY UNACCEPTABLE and makes no sense. The peaceful enjoyment for recreationists will be ruined by the continued blasting. Lost Lake will no longer be a peaceful getaway. Canoeing down the river will no longer be peaceful. Walking the Eaton Trail or exploring Ledger Island will no longer be peace and quiet. Have you seen the numbers of people that come out to enjoy these popular trails every day? — Comment 400-3

Additionally, the fish will be affected by water vibrations, and birds will be misguided by air vibrations. How far will blasting be heard due to the capacity for water to carry sound? Valley Children's Hosptial? City of Friant? The Parkway River Center? Woodward Park? Will the blasting vibrations affect the integrity of Friant Dam itself? — Comment(s) 400-4 400-5

In addition to my two main points, there is also the heavy truck traffic along Friant Road and Willow Avenue, creating noise and safety issues in nearby neighborhoods. — Comment 400-6

Yes, I understand our local construction companies need gravel. However, the Fresno area already has 180% of the gravel it needs for the next 50 years. Need for more local gravel is not a valid argument. — Comment(s) 400-7 400-8

Please vote against this absurd project. It is too deep, too many years, too noisy and too destructive. This popular recreational area along the San Joaquin River is not the proper location for such a massive project.

Sincerely,

Priscilla Craft
1122 E Woodhaven Lane
Fresno, CA 93720
epcraft@comcast.net

From:	james crane
To:	Randall , David A.
Subject:	Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date:	Sunday, March 9, 2025 6:00:45 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I understand that monied interests and politics have an influence on how cities and counties regulate business expansion. However, occasionally such influence will attempt to downplay concerns for potential harm to people, neighborhoods, and the environment.

Comment 401-1

I have briefly reviewed the Draft EIR 7763 and agree with the San Joaquin River Parkway and Conservation Trust's assessment as well as with Marek Warszawski's Op Ed (Fresno Bee 2/18/25), that the CEMEX Corporation should be required to provide additional analysis, stronger mitigation measures, and financial guarantees. All of these issues should be addressed and presented for public review BEFORE the EIR is finalized.

Thank you for your consideration.

Sincerely,

James M.

Crane

264 E. Moody

Ave.

Fresno, CA

93720

Catherine McNally
15310 Bluff View Ave.
Friant, CA 93626
catcurrydesign@gmail.com
559-978-1816
March 7, 2025

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development s Sixth Floor
Fresno, CA 93721

Subject: **Protect Our Community: Oppose CEMEX Mining Operation & Its Misleading EIR**

Dear Mr. Randall,

I am writing to express my strong opposition to the proposed CEMEX mining operation, as outlined in the draft Environmental Impact Report (EIR). My concerns revolve around the severe visual, environmental, and noise-related impacts this project would impose—particularly given its proximity to the San Joaquin River, nearby groundwater wells, and residential communities. I also want to emphasize the critical role you and other decision-makers hold in safeguarding our region's future.

Comment 402-1

As a graphic designer with extensive experience in designing layouts and assisting clients in putting together comprehensive business proposals, I understand that every element included—or omitted—in a presentation carries significant weight. Over the years, I have worked with clients across various industries, which has honed my ability to scrutinize the details that truly matter. That is why I am particularly troubled by the images included in the EIR. **These photos fail to show any evidence of heavy machinery, debris, or transport trucks—essential elements of a large-scale mining operation**. Instead, they depict a pristine, recreational landscape that is entirely unrepresentative of industrial mining. This discrepancy raises serious doubts about the transparency and credibility of the entire report. To highlight the stark contrast between the EIR's portrayal and reality, I plan to submit both actual photos from existing mining sites and photo-shopped images showing what this site would truly look like under CEMEX's proposal.

Comment 402-2

The EIR's claims regarding noise and other environmental impacts are similarly unconvincing. Suggesting that large-scale mining equipment—such as grinders, front loaders, and hydraulic machinery—will produce only a minimal increase in decibel levels is akin to expecting a lion to meow like a house cat. Such assertions only serve to obscure the real consequences of this operation.

Comment 402-3

Furthermore, the proposal's emphasis on operating for 100 years and creating a 600-foot deep pit appears to be a calculated distraction. Rather than addressing these long-term figures, we must confront the undeniable fact that, from day one, this project will unleash immediate devastation upon our environment and community.

Comment 402-4

I am also deeply concerned that the operating hours proposed in the EIR contradict Fresno County's own noise ordinance (8.40.040), signed on December 17, 2024. This ordinance was enacted specifically to protect our community from excessive noise and disturbance. By proposing operating hours that violate these

Comment 402-5

standards, the EIR not only undermines local regulations but also calls into question the commitment of those overseeing this project to uphold the community's well-being.

Comment 402-5 Cont.

I urge you to recognize the significant responsibility that comes with your position. You and your colleagues are fortunate enough to be the decision-makers who can protect our most cherished resources—including the San Joaquin River—from potentially irreversible harm. Approving a project of this nature would not only degrade the environment but also erode public trust in those elected and appointed to serve the best interests of the community.

This project is neither necessary nor beneficial when weighed against its potential damage. If CEMEX or the county truly believes more aggregate is needed, they should seek a more suitable location—one that is not adjacent to critical waterways, residential areas, or treasured open space.

Comment 402-6

I respectfully request that the Planning Department reject this permit. The EIR is inadequate, misleading, and fails to address the true scope of this project's environmental and community impacts. A decision to green-light the mining operation would be a disservice to the people of Fresno County, now and for generations to come.

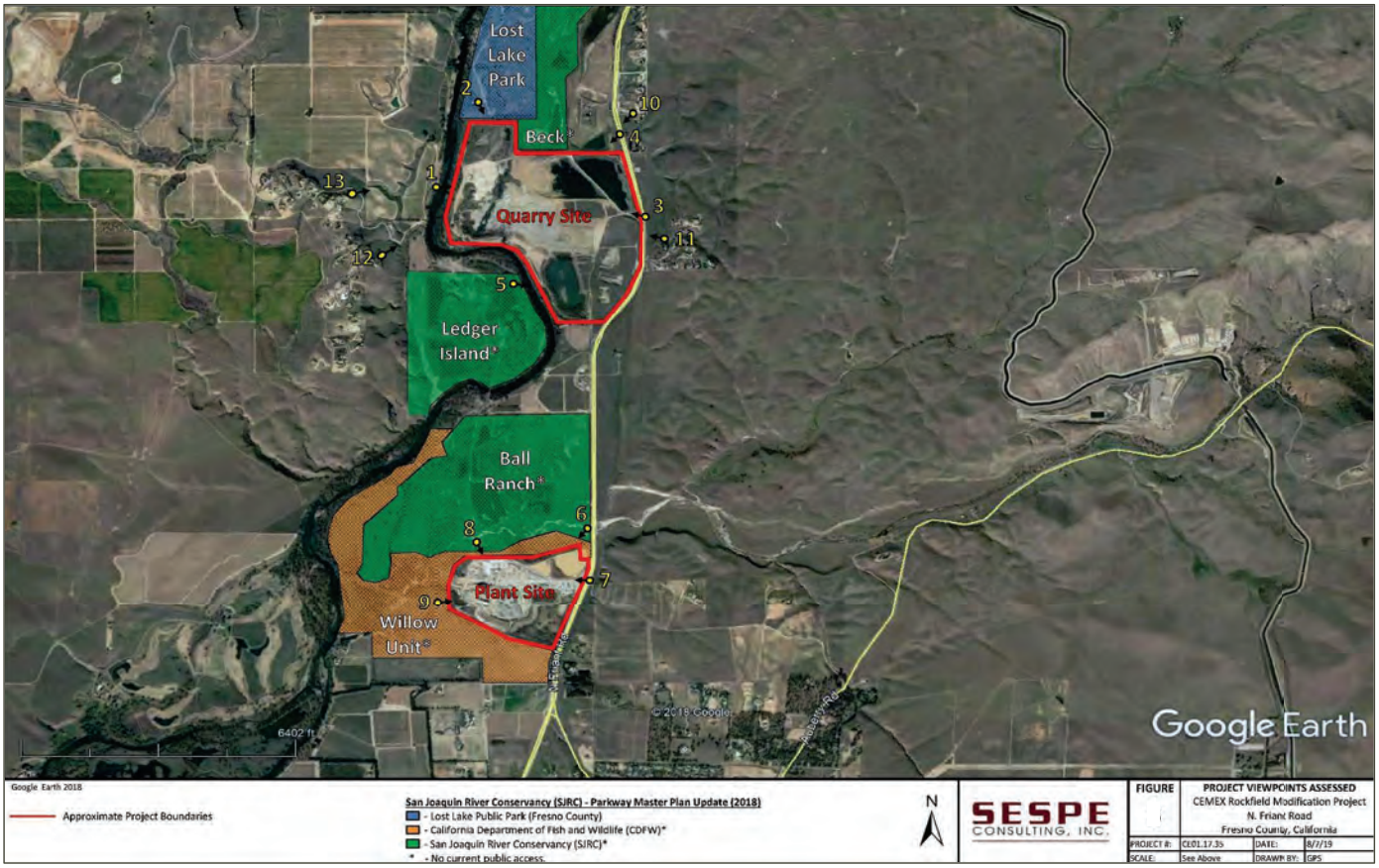
Thank you for your time and consideration. I implore you to uphold your commitment to serving the public interest by rejecting this proposal. Let us protect and preserve our region's natural beauty, rather than surrender it to a mining operation that is out of place and out of touch with our community's needs.

Thank you for your time and consideration.

Sincerely,

Catherine C. McNally

Photos provided within the EIR *(scaled down since you already have a copy)*

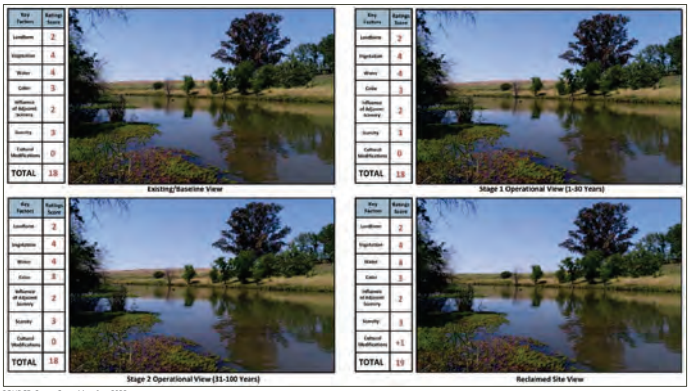


SOURCE: Sespe Consulting, Inc. 2022
NOTES: Table 4.1-3 summarizes the project impact ratings from each viewpoint.

Potentially Sensitive Viewpoint Locations
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 4.1-1

BENCHMARK RESOURCES

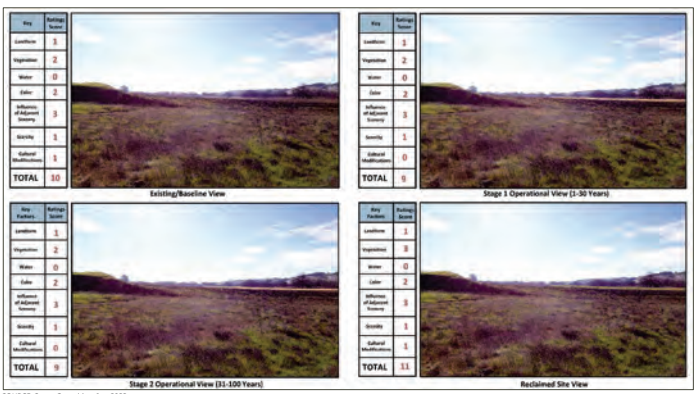
Location 1 - 6:
The photographs claim an unchanging landscape from Year 1 to 100.



SOURCE: Sespe Consulting, Inc. 2022
NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Quarry Site Public Viewpoint—Location #1
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 4.1-2

BENCHMARK RESOURCES

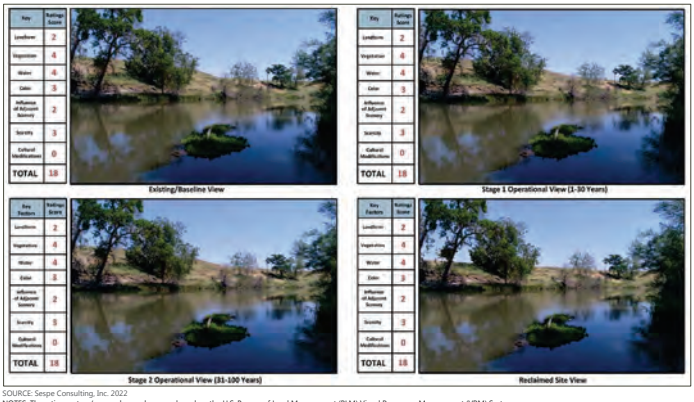


SOURCE: Sespe Consulting, Inc. 2022
NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Quarry Site Public Viewpoint—Location #2
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 4.1-3

BENCHMARK RESOURCES

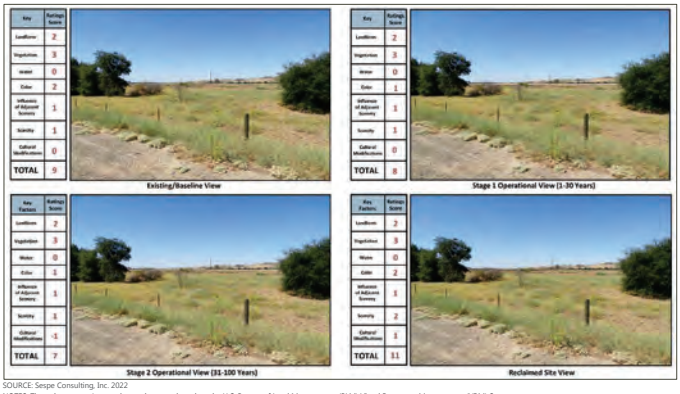
Location 1 - 6:
The photographs claim an unchanging landscape from Year 1 to 100.



SOURCE: Despe Consulting, Inc. 2022
NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Quarry Site Public Viewpoint—Location #5
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 4.1-6

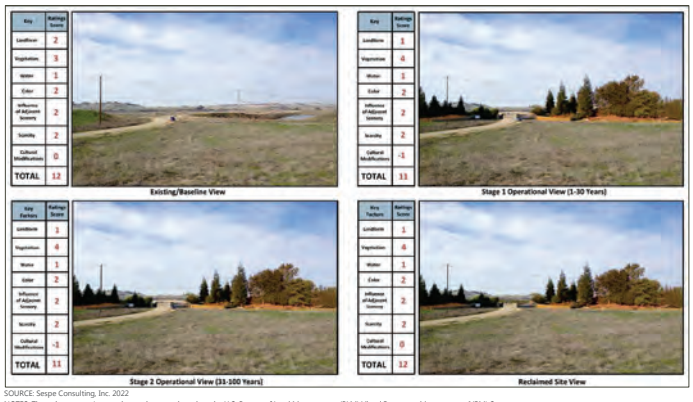
BENCHMARK RESOURCES



SOURCE: Despe Consulting, Inc. 2022
NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Quarry Site Public Viewpoint—Location #4
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 4.1-5

BENCHMARK RESOURCES



SOURCE: Despe Consulting, Inc. 2022
NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

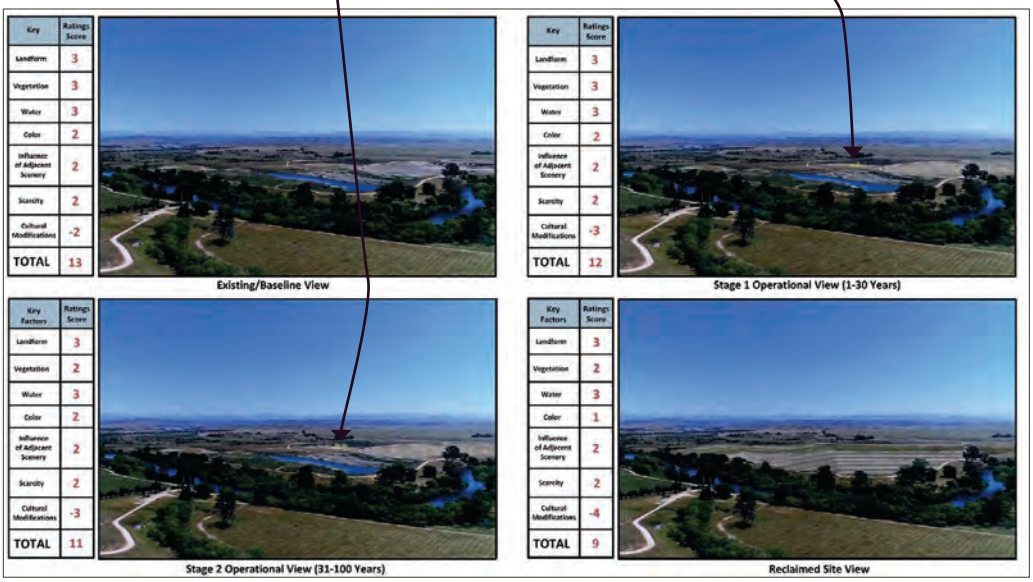
Quarry Site Public Viewpoint—Location #3
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 4.1-4

BENCHMARK RESOURCES

Location 3:
CEMEX has made no effort to improve the landscape or entryway in the last 100 years. More importantly, these images lack evidence of an active mining operation.

Presenting a project in its best possible light is the easy part. If **CEMEX can't even manage to depict a realistic or honest representation** in their own EIR visuals, what confidence do we have that they will follow through with their promises in real life?

Location 12
This image includes some mining equipment, such as a stacker-reclaimer or conveyor belt system, but the angle appears carefully chosen to downplay the actual scale of the machinery. Strangely, the same massive structure is completely absent from Location #11, where it should logically be visible. It should also be represented on all of the following locations
Locations: 1, 2, 3, 4, 10, 11, & 13



SOURCE: Sespe Consulting, Inc. 2021; ratings scores modified by Benchmark Resources 2022.
NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Quarry Site Private Viewpoint—Location #12
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 4.1-13

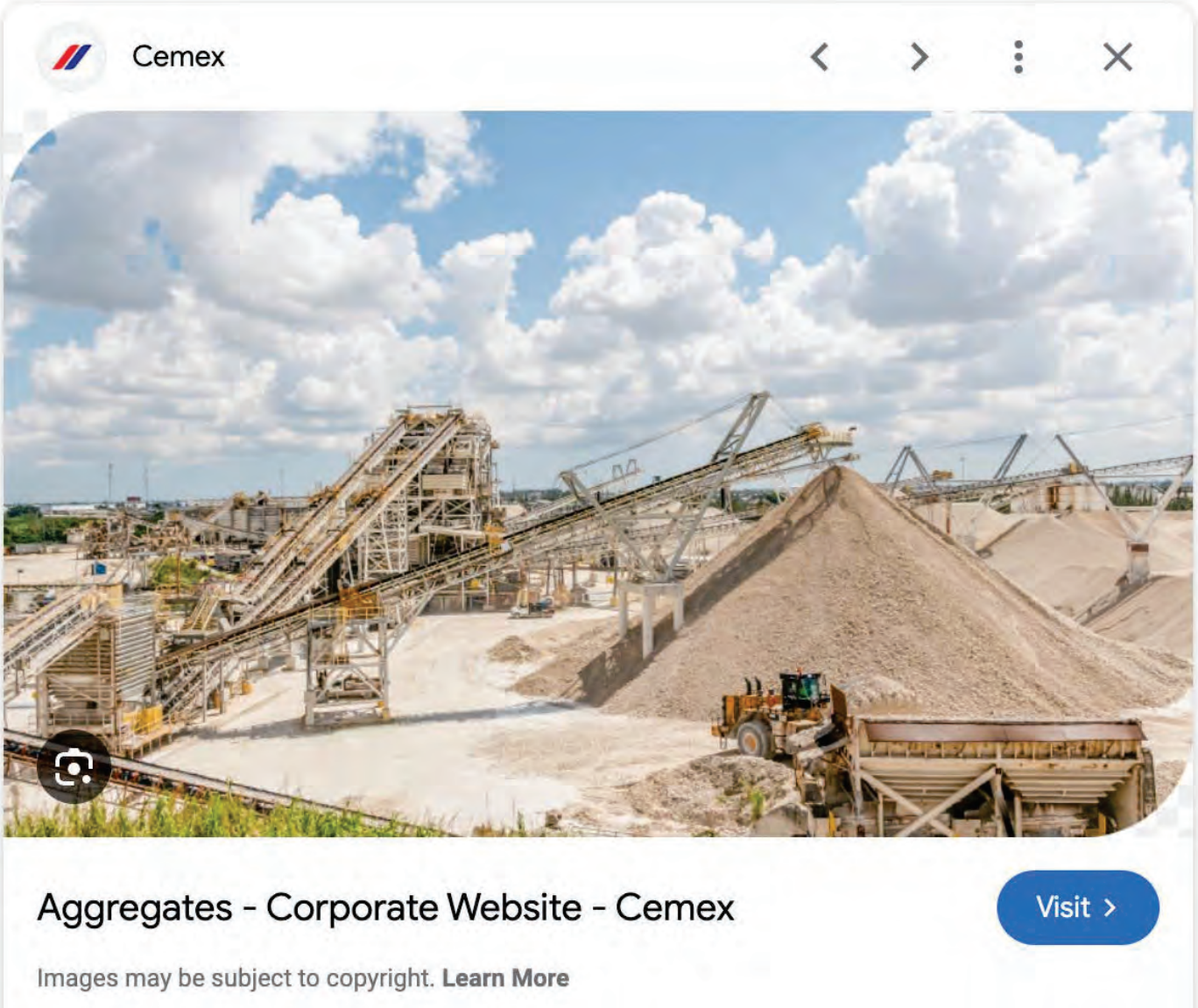
BENCHMARK RESOURCES

This selective representation raises serious questions about the transparency of CEMEX's visual depictions.

There is more

Let's shine a light on what a realistic mining operation actually looks like from the perspective of the surrounding community. Below are images of actual mining facilities and equipment—large-scale operations that bear no resemblance to the misleading, sanitized depictions provided in the EIR. These photos illustrate the true visual and environmental impact that this project would impose on our region.

The following images are not hypothetical—they are from actual CEMEX mining operations found online. **These real-world examples stand in stark contrast to the misleading, idealized visuals presented in the EIR.** This is the true scale of impact our community would face.



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The Business Journals

Tour of Cemex FEC Quarry in Miami-Dade County - South Florida Business Journal

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A Look at the Machinery Used in Aggregate Mining

While the mining operation shown in this video is on a larger scale, the types of machinery and industrial processes used are the same. This video provides a clear example of the heavy-duty equipment required for blasting, excavation, material transport, and on-site processing in aggregate mining.

CEMEX's proposal will require blasting operations, crushing plants, massive conveyor systems, and an extensive fleet of mining equipment. The EIR fails to accurately depict these realities, instead presenting an idealized and misleading vision of the project. This video serves as a reminder of the industrial scale that aggregate mining inherently requires.

Watch the video here: https://www.youtube.com/watch?v=lTwbDQMAnDc

Minute 2:02

This blast was approx. 70,000 tons. The description of the process is also vaguely explained in section 2-42 of the EIR.

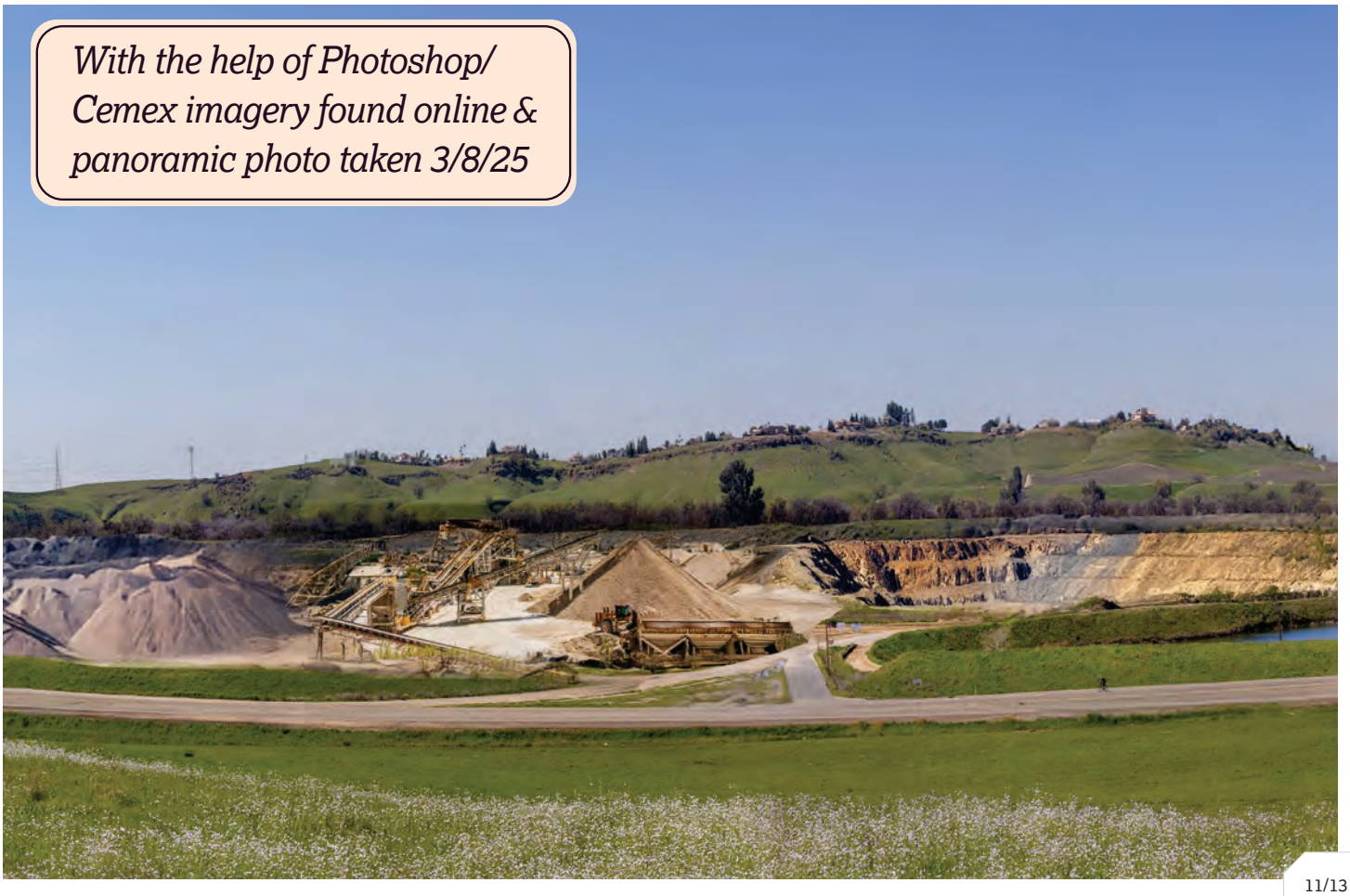
This destruction is visible from afar

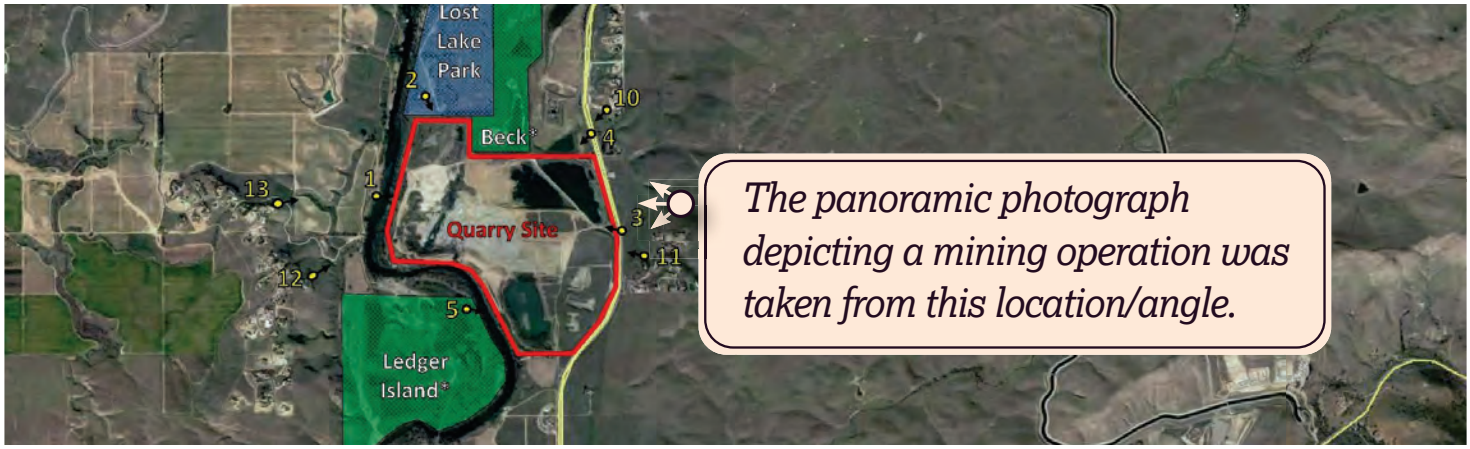
Cont. “A Look at the Machinery Used in Aggregate Mining”

A Realistic Vision of the CEMEX Mining Site

The EIR's carefully curated images fail to capture the true scale of disruption that this project would impose on our community. Below is a more accurate representation of what this landscape would look like once mining operations begin—complete with the massive equipment, heavy transport vehicles, and industrial infrastructure required for a 352.4-acre quarry.

This is the reality CEMEX isn't showing you.
This is what we will begin to see, starting on day one.




Lost
Lake
Park
2
10
Beck*
4
13
1
Quarry Site
3
11
12
5
Ledger
Island*
The panoramic photograph depicting a mining operation was taken from this location/angle.

Ultimately, this will become the landscape future generations will be left with.

Mitigation Suggestion: A Transparent and Unbiased Review

Given the clear omissions and misleading representations within the current EIR, I strongly urge Fresno County to require a new Environmental Impact Report to be conducted by a third-party contractor that is not selected by CEMEX. This is the only way to ensure a truly independent and unbiased assessment of the project's real impact.

Additionally, any revised EIR should be required to include accurate, unaltered visual representations of what this project would actually look like, including the images provided within this letter. The current EIR relies on carefully selected imagery and angles that fail to depict the full reality of the site's transformation and omits any visual representation of the true operational impact. The community deserves to see a truthful depiction of what is being proposed, not a presentation that conveniently avoids the difficult realities.

I urge you to take these necessary steps to protect the integrity of this review process and the well-being of the people you serve.

From: Melissa Dearing
To: Randall , David A.
Subject: CEMEX
Date: Sunday, March 9, 2025 7:22:40 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 9, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 403-1

Impacts on Water Quality & the San Joaquin River

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

Comment 403-2

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 403-3

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 403-4

Impacts on the San Joaquin River Parkway & Recreation

Comment 403-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 403-6

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 403-7

Comment 403-7 Cont.

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how*mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 403-8

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 403-9

Threats to Wildlife

Comment 403-10

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, andtherefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 403-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,
Melissa Dearing
504 W Morris Ave.
Fresno, CA 93704

From: Kory Donati
To: Randall , David A.
Subject: CEMEX rockfield
Date: Sunday, March 9, 2025 8:52:36 AM

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Report Suspicious

David,

I am an avid fisherman. The San Joaquin is a wonderful place to go fishing with my kids. We have many memories there. I am worried the cemex proposal will pollute/damage our favorite water way. Please reject the plans to expand. I want my kids to be able to make their own memories there some day.

Comment 404-1

Thank you,
Kory Donati
Clovis resident
559-500-9863

From: downinger
To: Randall , David A.
Subject: Opposition to CEMEX Expansion – Protect the San Joaquin River
Date: Sunday, March 9, 2025 10:03:26 PM

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Report Suspicious

Dear Mr. Randall,

I am writing to strongly oppose the proposed CEMEX Rockfield Expansion Project, which poses significant and irreversible harm to the San Joaquin River and surrounding environment. Comment 405-1

If approved, this project will:

- **Allow mining operations for 100 more years**, permanently altering the landscape and impacting local communities.
- **Create a massive 600-foot-deep mining pit**, deeper than Millerton Lake, drastically changing the region's natural topography.
- **Introduce hard rock blasting near the river**, increasing the risk of water contamination, habitat destruction, and harm to fish and wildlife. Comment 405-2

The San Joaquin River is a vital resource for our community, providing water, recreation, and crucial habitat for countless species. Allowing this expansion would prioritize corporate profit over environmental responsibility and long-term sustainability. I urge Fresno County to reject this proposal and prioritize the health of our natural resources. Comment 405-3

Please ensure that community voices are heard and that environmental protections remain a top priority.

Thank you,

Eric Downing

From:	ja Rava
To:	Randall , David A.
Subject:	CEMEX Expansion
Date:	Sunday, March 9, 2025 8:32:20 PM

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Dear David Randall,

My name is Jesus, I'm a resident of the Central Valley and interested in preserving and caring for it, especially the San Joaquin river. What this CEMEX expansion will do is allow for many more years of mining, affecting not only the youth and people of today, but generations to come. We now and the people to come will see the loss of more natural habitats, in a state where many are already in danger of being lost. It will lead to a 600 ft deep mining pit, nearly double the depth of Millerton Lake. If all of that isn't enough, hard rock blasting will become increasingly more common. Leading to impacted water quality, as if near yearly droughts aren't enough, and nearby wildlife will be affected as well. Overall, this expansion will only cause harm to local people and the environment. Disallow this expansion, prevent harm to the San Joaquin River and its local people.

Sincerely,

A concerned resident

Comment 406-1

Comment 406-2

Comment(s) 406-3 406-4

From: Dennis Foley
To: Randall , David A.
Subject: Comments on Cemex Rockfield Modification Project DEIR
Date: Sunday, March 9, 2025 8:52:53 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 9, 2025

Dear David Randall,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. Comment 407-1

1. Impacts on the San Joaquin River Watershed.
My wife and I are both recreational kayakers and enjoy the San Joaquin River from Lost Lake to Fort Washington beach. Our concern is how is Cemex going to mitigate the water quality of the Quarry pit water seepage that will now include new increased sediment, chemical, and mineral levels as Cemex returns this water back into Dry Creek and eventually the San Joaquin River? Why does Cemex need to dig a 600ft. deep gravel pit anyway?

2. Air Quality and Dust Emissions. Comment 407-2
How is Cemex planning to mitigate their negative impact on our local Air Quality and Dust Emissions with the implementation of "Blasting" in their mining operations and the increased rock trucks transporting more aggregate on a larger scale in uncovered trailers on Friant, Highway 41, Copper Ave, and other County roads?

3. Biological Resource Impacts Comment 407-3
How will Cemex's open pit gravel mine expansion request "not" add to further impact in many negative ways; our local and migratory bird populations, river fisheries and native mammal wildlife in and around this mining project along our beautiful San Joaquin River?

4. Traffic and Noise Concerns Comment 407-4
The city and county of Fresno are expanding housing and commercial business development in a northeast direction along the Friant road corridor. Along with this occurrence, the community of Friant is increasing their housing foot print as well.
How is Cemex's increase in gravel truck trip hours on Friant road not going to have many negative impacts with local traffic safety; regarding commuters, Millerton Lake & Lost Lake recreational users day travels, and bicyclists? The increase in gravel trucks will also further degrade our roads, create more auto windshield repairs, and add to overall negative background noise levels to nearby homes.

5. Cumulative Environmental Efforts Comment 407-5
My wife and I have personally witnessed since 2001, the expansive housing growth that has occurred in Woodward Lake, Copper River, North Willow Ave., and Friant areas that will

Comment(s)
407-5 Cont.
407-6

all be impacted in at least one or more negative ways should Cemex be allowed their request! The Cemex's Aggregate Extraction business can be successfully accomplished in other available and less imposing locations as is evident in the Vulcan Aggregate mining operations near the Kings River, east of Centervillle, CA.

My wife and I, as Woodward Lake homeowners, who are very concerned with this Cemex Rockfield Modification Project DEIR look forward to your response to our questions.

Sincerely,

Dennis and Valarie Foley

From:	Linda Garcia
To:	Randall , David A.
Subject:	OPPOSITION to the CEMEX 100-Year Permit
Date:	Sunday, March 9, 2025 8:44:09 PM

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Dear Mr. Randall,

I am writing to formally express my opposition to the proposed 100-year permit for the CEMEX mining operation
I request that the Planning Department reconsider this permit.

Comment 408-1

Thank you for your time and consideration.

Sincerely,

Linda Garcia
Fresno Resident & Social Worker

From:	Acsa
To:	Randall , David A.
Subject:	CMEX Expansion Public Comment
Date:	Sunday, March 9, 2025 8:51:26 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David Randall,

My name is Acsa Garcia-Aceves. As a resident of the Central Valley, I am very interested in preserving and caring for it, especially the San Joaquin river. What this CEMEX expansion will do is allow for many more years of mining, affecting us and generations to come.

Comment 409-1

This project will cause the loss of more natural habitats, in a state where many are already in danger of being lost. It will lead to a 600 ft deep mining pit, nearly double the depth of Millerton Lake. If all of that isn't enough, hard rock blasting will become increasingly more common. This will impact water quality, which will in turn negatively impact wildlife.

Comment(s) 409-2 409-3

Overall, this expansion will only cause harm to local people and the environment.

Comment 409-4

Disallow this expansion, prevent harm to the San Joaquin River and its local people.

Sincerely,
Acsa Garcia-Aceves

From: Paul Gibson
To: Randall , David A.
Cc: Sharon Weaver
Subject: CEMEX DEIR No. 7763
Date: Sunday, March 9, 2025 10:43:40 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 9, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

Comment 410-1

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. As a former board member of the San Joaquin River Conservancy, appointed by Governor Brown, I am concerned how often the DEIR inadequately recognizes critical dangers to the San Joaquin River and the State owned San Joaquin Conservancy lands that surround the project.

The conservation and restoration of the San Joaquin River, its flows, its habitat, and its use by the public have been supported by taxpayers for nearly 40 years. For decades, public use of the land has been exponentially increasing. A project that will greatly impact the River and surrounding land use for the next 100 years needs to carefully detail the mitigation measures necessary to protect hundreds of thousands of citizens visiting their public lands each year. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 410-2

Lack of Mitigation for Rapidly Increasing Public Visitation, Visual, Traffic, and Air Quality Impacts

The DEIR identifies several unavoidable negative impacts, including:

- **Contradictions to Master Plan for the San Joaquin River Parkway:** The DEIR does not address the harm the project will do to public access to the San Joaquin River. The Master Plan for the San Joaquin River Parkway calls for dramatic increase in the public access points to the River. The DEIR does not address increased public use of areas surrounding the project. Currently, public visitation to State owned Conservancy lands is increasing by the thousands every year. A 100 year project in the middle of one of the State's fastest growing regions needs to consider that visitors to the River Parkway will likely be in excess of 1 million people per year in the near future.

Comment 410-2 Cont.

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.

Comment 410-3

- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR.

Comment 410-4

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining? In the region with some of the nation's highest rates of child asthma, it is imperative that CEMEX's current operations be seen as a contributor to current health outcomes. The public has a right to see the project's emissions as compared to a no-project scenario.

Comment 410-5

Impacts on Water Quality & the San Joaquin River

Comment 410-6

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX’s plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?

Comment 410-7

- Who will be responsible for cleanup and long-term damage if the pit

becomes part of the river system?

Comment 410-7 Cont.

- The San Joaquin River Conservancy has spent millions of dollars fixing breached quarry ponds downstream from the project. More public funds have been spent on the restoration of habitat and water flow by the San Joaquin Salmon Restoration project. The DEIR should identify impacts to these projects.

Comment 410-8

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 410-9

Impacts on the San Joaquin River Parkway & Recreation

Comment 410-10

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 410-11

Threats to Wildlife

Comment 410-12

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection

instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

Comment 410-12 Cont.

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 410-13

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,

Paul M. Gibson

1660 W. Alluvial Avenue

Fresno, CA 93711

From: Finicky Sickle
To: Randall , David A.
Subject: CEMEX Opposition, DEI Report
Date: Sunday, March 9, 2025 8:34:54 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Brandon Gonzalez
9395 N Rowell
Fresno, CA, 93720
nahn8038@gmail.com
559-290-3677
3-9-2025

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Mr. Randall,

I am writing to formally document my dissent as a citizen of Fresno towards the proposed 100-year permit for the CEMEX mining operation. Having look through the applicable sections of the EIR, I want to strongly express my concern for the soundness of the EIR. Comment 411-1

I have lived my whole life near the San Joaquin River, and make frequent birdwatching trips along its expanse, as I have since I was a child. As I am certain you're aware of, our location in the Central Valley provides prime habitat for many endemic, and often endangered, species. One threatened species that I can personally vouch has been present very near the proposed mining site is the Swainson's hawk (*Buteo swainsoni*). A nest has been observed as recently as 2022-2023 along the San Joaquin, in Woodward Park.

I am not an expert and merely a lifelong hobbyist, but I am certain that others with more specific areas of expertise could provide similar contradictions to the current EIR findings. Additionally, the survey states that Osprey were detected as far back as 2017, another species which I can firsthand attest still nests along the San Joaquin. It is my firm belief that a survey from nearly 8 years ago is completely insufficient in determining the status of vulnerable species. Furthermore, whether a particular species is sighted directly on either of the proposed sites is an incredibly short-sighted plan of approach, as actions as drastic as blast mining the riverbed would obviously have much further reaching effects than those that may be observed directly in their borders. Comment 411-2

According to publicly accessible records (such as https://www.conservation.ca.gov/cgs/Documents/Publications/Map- Comment 411-3

Sheets/MS_052_California_Aggregates_Report_201807.pdf), Fresno has no need for this project and already has more than adequate access to locally sourced gravel. Attempts to frame this operation as empowering our community with locally sourced materials are a blatant exaggeration of the truth.

Comment 411-4

The San Joaquin River has sustained sever damage already, and it is my firm belief that this operation would set any conservation efforts back immensely as well as desecrate the natural beauty that all in our community should have access to. The current EIR is not nearly comprehensive enough in its studies of the local impact of this project. As a citizen of Fresno and lifelong admirer of the river habitat we are lucky enough to still have, I implore the Planning Department to reconsider this hasty proposal.

Comment 411-5

Thank you.

From: carolghansen@comcast.net
To: Randall , David A.
Subject: Hello, Mr. Randall,
Date: Sunday, March 9, 2025 4:56:29 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 412-1

I would like to express my concern regarding CEMEX Rockfield Quarry site northeast of Fresno seeking an extension of its sand and gravel mining operations. My husband and I have a home in the subdivision of Copper River Country Club and are alarmed that this expansion will cause new harm to the San Joaquin River, not to mention to the health of our community and the environmental impact that it has on those living and working in the area.

Comment(s) 412-2 412-3

The California Geological Survey Report clearly shows that there are other local sources available to CEMEX that will provide aggregates. All along Friant Road and Copper Avenue continuing north, the city population has grown tremendously. The impact of CEMEX's continuing to mine and blast in this area negatively impacts the environment. It is a negative impact to air quality, water quality, fish and wildlife, the San Joaquin River, traffic, recreation, land use and planning, and visual aesthetics.

Comment 412-4

In addition, in this proposal, CEMEX wants to dynamite hundreds of feet below ground in close proximity to one of the country's endangered rivers. We oppose this project and hope that the Fresno County Board of Supervisors does not grant an extension to CEMEX. Thank you for the opportunity to respond to this proposal.

Carol Hansen
11890 N. Champions Dr.
Fresno 93730
559 2615566

From:	Keith Hawkyard
To:	Randall , David A.
Subject:	CEMEX Expansion on the San Joaquin River
Date:	Sunday, March 9, 2025 10:26:39 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall, help us preserve the beauty and serenity of the San Joaquin river. Every natural resource does not need to be exploited to depletion we have already reduced the water flow such that the river no longer flowed to the delta and only does now seasonally because of law suits. Let's not destroy the natural beauty of the riparian environment around the river by further expanding the gravel mining operation. Fresno County consistently misses opportunities to enhance the quality of life of its residents by neglecting to create and maintain public spaces for recreation do not turn the river bottom into a desolate polluted and cratered mess.

Comment 413-1

Keith Hawkyard.

Sent from my iPad

From:	Lori Hawkyard
To:	Randall , David A.
Subject:	Cemex
Date:	Sunday, March 9, 2025 10:07:50 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 414-1

Hello Mr. Randall,
Please stop the Cemex expansion to retain the beauty of the San Joaquin River corridor.
Lori Hawkyard

From:	Pam Hays
To:	Randall , David A.
Subject:	Cemex Rockfield Expansion
Date:	Sunday, March 9, 2025 5:26:06 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Sent from my iPad

I am writing to express my deepest condolences about Cemex Rockfield's expansion project in the San Joaquin Riverbed. Comment 415-1

I have many concerns, not the least of which is the very lengthy proposed life of this permit for 100 years. This is totally unprecedented and should not be allowed!

Ten years be a far more reasonable time frame. A lot happen during this period. It is best to be cautious and evaluate their performance, in addition, new regulations may be adopted that should be applied to their permit, as well.

The other major concern is the depth that they propose to mine, 600 feet deep into the riverbed! That has never been done before and what environmental damage can be done with digging 600 feet deep below the surface. I'm sure they don't, they just assume that they be able to deal with if it happens. We can't trust them. It could be a monument disaster and they just walk away do nothing! There is a very real risk and there will be no accountability on their part. Comment 415-2

What they want is a blank permit to do their thing and trust they will do the right thing. No way they have a history of failure!

The mining industry within the San Joaquin River has a poor history of mining responsibly and restoring the land to an environmentally responsible condition. Comment 415-3

It would be completely appropriate and necessary to require a BOND to assure They comply with all conditions and do not abandon the site when they are completed.

Please give serious consideration to these issues and comments as the San Joaquin River should not be destroyed but preserved.

Thank you,

Harris and Pam Hays

From: Clay Howell
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Sunday, March 9, 2025 10:55:07 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

9 March 2025
David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all. Comment 416-1

Impacts on Water Quality & the San Joaquin River

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions. Comment 416-2

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit? Comment 416-3

Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites. Comment 416-4

Impacts on the San Joaquin River Parkway & Recreation

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline. Comment 416-5

The DEIR should identify the timeframe and exact location of the trail to be constructed.

The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access

The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts. Comment 416-6

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts Comment 416-7

The DEIR identifies several unavoidable negative impacts, including:
Scenic Degradation: The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.

Comment 416-7 Cont.

Traffic Congestion: Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on how mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 416-8

Air Quality: The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 416-9

Threats to Wildlife
The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection. Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

Comment 416-10

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Comment 416-11

Conclusion
Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.
Thank you for your time and consideration.
Sincerely,
Clay Howell
8701 N Highway 41, #68
Fresno, CA 93720

From:	Blue Kalmbach
To:	Randall , David A.
Subject:	Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Sunday, March 9, 2025 6:46:50 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David,I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. 1. Impacts on the San Joaquin River WatershedThe San Joaquin River Watershed provides a lot of water to crops and people, as well as a space to learn, explore and recreate. The CEMEX Rockfield Expansions Project will impede upon the river and leave lasting damage for futures to come. 2. Biological Resource Impacts

The project would damage the waterway and surrounding riparian zones. Not enough analysis has been done on the project's impacts to the Swainson's Hawk. Great progress has been made on increasing and restoring Chinook Salmon to the river but the project would set that back and increase harm and pollution.Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter. Sincerely,Blue Kalmbach

Comment 417-1

Comment 417-2

Comment(s) 417-3 417-4

From:	Pamela
To:	Randall , David A.
Subject:	CEMEX expansion
Date:	Sunday, March 9, 2025 4:19:31 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Sent from my iPhone

I am writing to express my strong objection to the proposed expansion of CEMEX. Allowing expansion would very likely threaten the river, fish, wildlife, air quality, and the quality of life for the people, including myself, who live close to the CEMEX concrete plant. As a long time Fresno resident I urge (and plead) you to vote no on this project.

Comment 418-1

Thank you

Pamela Kammen
9447 N Woodmont Dr
Fresno. 93720

From: ckershaw@me.com
To: Randall , David A.
Subject: CEMEX
Date: Sunday, March 9, 2025 7:58:08 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David Randall,

My husband and I are long time residents of Sanger. We respectively have worked for the Community College District and CSUFresno with expertise in ecology.. We oppose the 100 year permit for the CEMEX mining operation particuilarly on grounds of the long term impact of wildlife habitat and community impacts. The San Joaquin river is an important recreational resources our Fresno and Madera community. A project of this scale requires a thorough analysis of the long term impact for our community.

Comment 419-1

Comment 419-2

Therefore we request that the Planning Department reconsider this permit so that a more thorough EIR is conducted.

Sincerely,

Cheryl and Terry Kershaw

2006 S Newmark Ave
Sanger, CA 93657
559 875-6231

From: r.n.kline@gmail.com
To: Randall , David A.
Subject: CEMEX's blast mine proposal
Date: Sunday, March 9, 2025 4:22:04 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Ricky Kline
1553 N. College Ave
Fresno, CA 93728
r.n.kline@gmail.com
310-686-0204

3/9/25

Dear David Randell,

I am writing to express my strong opposition to the proposed Cemex company plan to blast a 600-foot deep pit near the San Joaquin River. As a concerned citizen, I am deeply troubled by the potential environmental, social, and economic impacts this project could have on the river and surrounding communities. Comment 420-1

The San Joaquin River is a critical waterway that supports local ecosystems, agriculture, and provides vital resources for thousands of residents. Blasting such a large pit near its banks threatens the integrity of this invaluable resource. The resulting disruption to the river's natural flow, along with the risk of contamination, could have long-term consequences on water quality and the health of local wildlife. Additionally, this excavation poses an increased risk of soil erosion and landslides, which would further compromise the land and water surrounding the area. Comment 420-2 Comment 420-3

Furthermore, the environmental degradation caused by noise, air pollution, and dust from the blasting could negatively affect local communities and the health of residents living near the project site. The disruption to the environment would likely impact property values, the livelihoods of those who depend on the river for farming and fishing, and could even harm the local tourism industry that benefits from the river's natural beauty and resources. Comment 420-4 420-5

I urge you to reconsider this project and explore more sustainable alternatives. It is critical that we prioritize the long-term health of the San Joaquin River and the surrounding communities. Our collective responsibility is to preserve and protect these natural resources, ensuring they remain accessible and viable for generations to come. Comment 420-6

Thank you for considering my concerns. I look forward to your response and hope for a more sustainable solution to the needs of the Cemex company and the well-being of our environment.

Sincerely,
Ricky Kline

From: Kathy Klitz
To: Randall , David A.
Subject: My opposition to CeMex expansion
Date: Sunday, March 9, 2025 5:08:53 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Comment 421-1

I am a 40 yr resident of Woodward Lake who is horrified by the prospect of the expansion of these companies on the river bottom expanding. This is not the area to have blasting that can potentially affect the river environment. I'm very concerned not only of the noise and dust toxins but what this will surely do to the river's water table affecting wildlife and flora that we as residents have tried very hard to not disturb as we enjoy the beautiful trails. I see a future of expensive litigation by these communities surrounding the precious river. We hope that future generations can continue to enjoy a healthy lifestyle in nature I disturbed by expansion for profit.

Comment(s) 421-2 421-3

Thank you,
Kathleen Klitz
513 E Mallard Cir
Fresno 93730
Sent from my iPhone

From: Sarah Knight
To: Randall , David A.
Cc: Sharon Weaver
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Sunday, March 9, 2025 9:41:36 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

Comment 422-1

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all. I am also concerned about the time of this project which goes 100 years into the future. This seems like too long of a time commitment when so many things can change in the next 100 years.

Comment 422-2

Impacts on Water Quality & the San Joaquin River

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

Comment 422-3

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 422-4

Impacts on the San Joaquin River Parkway & Recreation

Comment 422-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

Comment 422-6

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The Noise from the rock crushing, blasting, and drilling will carry beyond the recreational areas to suburban housing areas. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 422-7

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA. The view of a 600 foot deep open pit mine will be a blight on the landscape near the proposed project area.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR.

Comment 422-8

CEMEX is not being held accountable for the road damage, gravel hitting windshields, and traffic congestion from its current operations before any new projects are added. Friant Road is already a dangerous road without adding any additional gravel trucks.

Comment 422-8 Cont.

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 422-9

Threats to Wildlife

Comment 422-10

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 422-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,
Sarah Knight
8735 N Cedar Ave #126
Fresno, CA 93720

From:	Sandra Knudson
To:	Randall , David A.
Subject:	CEMEX expansion
Date:	Sunday, March 9, 2025 7:55:18 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 423-1

Please do not approve CEMEX expansion. It will harm the San Joaquin River.

Sincerely,

Sandra Knudson

908 E Green Acres Drive
Fresno, CA 93720

From: Asgy Lame
To: Randall , David A.
Subject: CEMEX Expansion
Date: Sunday, March 9, 2025 8:34:27 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David Randall,

My name is James, I'm a resident of the Central Valley and interested in preserving and caring for it, especially the San Joaquin river. What this CEMEX expansion will do is allow for many more years of mining, affecting not only the youth and people of today, but generations to come. We now and the people to come will see the loss of more natural habitats, in a state where many are already in danger of being lost. It will lead to a 600 ft deep mining pit, nearly double the depth of Millerton Lake. If all of that isn't enough, hard rock blasting will become increasingly more common. Leading to impacted water quality, as if near yearly droughts aren't enough, and nearby wildlife will be affected as well. Overall, this expansion will only cause harm to local people and the environment. Disallow this expansion, prevent harm to the San Joaquin River and its local people.

Sincerely,

A worried student and citizen

Comment 424-1

Comment 424-2

Comment(s) 424-3 424-4

From: Patricia Libby
To: Randall , David A.
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Sunday, March 9, 2025 5:58:05 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior Planner
Fresno County Public Works & Planning

Dear Mr. Randall:

Thank you for the opportunity to submit comments on the CEMEX Rockfield Expansion Project EIR. Comment 425-1

Fresno and Fresno County are at a crossroads and it is critical that we take the right path.

In the last few days I have done quite a bit of study and have learned that:

- Fresno was founded several miles from the San Joaquin River in 1872 by the California Pacific Railroad.

- Cemex, a Mexican multinational company, began mining the San Joaquin in 1913.

- According to online journalist Gregory Weaver, *Fresnoland*, March 7, 2025, "The San Joaquin River, one of California's most beleaguered waterways, has endured over a century of exploitation. The river's flow reduced by 97%, its salmon runs were erased by dams, its wetlands stripped by decades of mining, and its floodplain in the heart of Freno carved into barren pits."

- Since my birth family moved to Fresno in 1965, Fresno growth has now reached the River, so the negative impact of Cemex on the River and our citizenry is too great for Cemex to continue at all.

- The San Joaquin River is our most precious resource for both nature and people. A DEIR is a distraction from what we really must do - end Cemex's operations on our River!

- There are stockpiles from previous mining which will provide aggregate for decades to come. For their next 100 years, CEMEX proposes an even more dangerous and destructive type of mining than they have done in their past 112 years - going from mechanical digging of sand and gravel to blasting and crushing hard rock from a pit that goes 600 feet deep (2 football fields stacked vertically). "CEMEX has been fined more than $43 million for 81 separate environmental violations since 2000, according to Good Jobs First, a Washington, D.C.-based nonprofit that tracks corporate and government accountability in economic development," stated Marek Warszawski in an opinion article in the *Fresno Bee*, February 16, 2025. Comment 425-2 425-3 Comment 425-4

- We should not be committing future generations to another 100 years of River destruction, along with visual, air and noise pollution; harm to wildlife and vegetation; decreased water quality; and, among others, traffic congestion and damage to vehicles from Cemex trucks. Comment 425-5

Over the years, we citizens of Fresno and Fresno County have developed pride in our community. A Comment 425-6

lot of that pride is connected to the San Joaquin River. Let's take the steps needed to restore the River and adjacent areas. Let's fulfill our dreams for the San Joaquin River Parkway and Conservation Trust. Let's end mining along the river!

Comment 425-6 Cont.

Sincerely,

Patricia B. Libby
Member of the San Joaquin River Parkway & Conservation Trust, Fresno Audubon Society and League of Women Voters

Sent from my iPhone

From:	Alana Little
To:	Randall , David A.
Subject:	CEMEX DEIR
Date:	Sunday, March 9, 2025 9:18:57 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hi Mr. Randall!

I want to express my strong dislike for the CEMEX Expansion Project. I am a kayaker and small business owner here in Fresno. I take my kids to the waterways in our county and j cannot express to you how meaningful they are to me. I implore you to decline this proposal and keep our river clean!

Comment 426-1

Thank you!
Alana Little
Makepie.net
559.905.2545

From: Alycia M
To: Randall , David A.
Subject: Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report
Date: Sunday, March 9, 2025 9:06:02 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Randall,

I am writing to formally and clearly express my disgust with the proposed 100-year permit for the CEMEX mining operation and to challenge the adequacy of the Draft Environmental Impact Report prepared for this project. The EIR, as currently drafted, does not sufficiently or accurately assess the environmental, ecological, and community impacts that this long-term operation will have on the San Juaquin Reiver and surrounding areas.

Comment 427-1

As someone with familiarity with the location, I find that the EIR fails to adequately address the following concerns:

Comment 427-2

1. **Impacts on wildlife habitat**
2. **Water quality for the wildlife and humans that enjoy the river's water.**
3. **Noise pollution for the wildlife, humans, and surrounding areas**
4. **Community health concerns, not just for those of us that enjoy the waters that flow down river but for the wildlife that lives in and around the river.**
5. **Future impacts on the next generations that will live and benefit from the great San Juaquin River and surrounding areas.**

Comment(s) 427-3 427-4 427-5 427-6

A project of this scale and duration requires a far more comprehensive environmental review that includes thorough scientific analysis, long-term cumulative impact assessmentsm and meaningful mitigation strategies. The EIR, as it stands, does not meet these standards, and I strongly urge Fresno County to require revisions that fully account for the long0term consequences of textending CEMEX's mining operations.

Comment 427-7

I request that the Planning Department reconsider this permit in light of the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.

Thank you for your time and consideration.

Alycia Mariano
Clovis, CA 93612
559-712-1429

From:	Julie Marlow
To:	Randall , David A.
Subject:	Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Sunday, March 9, 2025 3:39:05 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr Randall

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Comment 428-1

The San Joaquin River Parkway Trust has been working to restore the San Joaquin River for many years. This would take away from that effort.

Given the significant potential environmental and community impacts associated with this project,
I urge you to strongly consider not moving forward with approval.

I'm very concerned about the impact of blasting so close to the San Joaquin River Parkway. It appears there will be adverse effects such as noise, air and water quality, and the physical landscape itself. Comment 428-2

To avoid the impact on the land, and human and animal residents, is there an alternative site to continue mining? Ideally one that that is not so detrimental to the environment, air quality and the surrounding areas? What has already been researched? Comment 428-3

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Comment 428-4

Thank you for your time and consideration of these comments.

Sincerely,
Julie Marlow

From:	Janice Marshall
To:	Randall , David A.
Subject:	CEMEX Rockfield Expansion Project
Date:	Sunday, March 9, 2025 5:10:58 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Comment 429-1

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

First of all, I am greatly concerned about a negative impact on air quality in the region. The DEIR states project emissions may exceed cancer risk thresholds (pg. 4.3-63). The surrounding public lands are used by outdoor enthusiasts for hiking, canoeing, walking on the many trails adjacent to the River, and by school children on outings to Ball Ranch, Lost Lake, and the Madera side of the River on educational and recreational trips. As I am sure you are aware, Fresno County struggles with air quality for much of the year. The impact of the CEMEX expansion project may shorten the window of opportunity for students to enjoy these outings simply due to the fact the air is not safe to breathe.

Comment 429-2

Secondly, I am having difficulty reconciling the great opportunities for recreation, wine tasting, outdoor events and live music, Respite by the River events with the possibility that within a distance of less than 2-3 miles CEMEX could simultaneously be blowing a massive pit nearly twice as deep as Millerton Lake. I want to continue to enjoy events at Solitary Cellars, take friends hiking at Ball Ranch, and attend events at the River Center knowing that CEMEX is required to employ enhanced mitigation measures while ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

Thank you for your time and consideration of these comments. I look forward to your response and further discussions of this important matter.

Sincerely,
Janice Marshall

From:	ivory maxwell
To:	Randall , David A.
Subject:	SAN JOAQUIN DOES NOT NEED A 600ft deep hole pit
Date:	Sunday, March 9, 2025 8:59:42 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 430-1

Hello , my name truly doesn't matter in these battles but one thing is for sure I AM APART OF THE COMMUNITY OF SAN JOAQUIN BORN AND RAISE . I DO NOT AGREE WITH THE PROJECT OF BLOWING A **600ft deep hole pit** , what are you trying to find that deep that's not above? I consistently question the TRUE PURPOSE of using explosives . In physics Explosive =heat+ energy = vibration = motion , binding , bending =creating chaos/pressure to the tonic plates . EVERY ACTION HAS A REACTION THATS LAW! So It's truly upsetting to see 2 male adolescents (CEO's) having horrible imaginations and lazy ideas that potential leave a hazardous situation for the community that devotes time and energy blood sweat and tears for San Joaquin to be . I bet the 2 billionaire ceos don't live in San Joaquin so why would they care about the reaction from their actions ? They leave when disaster hits but natives stay to
Rebuild . Last but not least say if the hole is exploded and nothing is to be found 600ft deep . Then what does San Joaquin do with a 600ft deep hole?? I HIGHLY SUSPECT THIS PROJECT HAS A SECRET AGENDA it's to many red flags to not have a concern and the ones who don't have a concern are the ones doing ZERO labor work just pointing fingers and giving quotas . Boo this world sucks :(

From:	Laura Menendez
To:	Randall , David A.
Subject:	Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Sunday, March 9, 2025 11:20:40 PM

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Report Suspicious

Dear David,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

Comment 431-1

Mining processes release large amounts of dust and particulate matter into the air, which can significantly deteriorate air quality and contribute to respiratory issues for those living in nearby areas. Furthermore, mining waste often finds its way into water systems, contaminating drinking water, agricultural land, and aquatic ecosystems. This pollution could result in an increase in diseases and health problems within our community, further straining public health resources.

Comment 431-2

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

Comment 431-3

Thank you for your time and consideration of these comments.

Sincerely,
Laura Menendez

From: Inga Minton
To: Randall , David A.
Subject: CEMEX
Date: Sunday, March 9, 2025 7:08:37 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior Planner
County of Fresno
Fresno, CA

Dear David,
I am a 40 year resident of Clovis, California and I appreciate the opportunity to submit comments on the Draft Environmental Impact Report for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with this project approval.

Comment 432-1

1) Impacts on the San Joaquin River Watershed
Our residence is reasonably close to the Cemex plant. We have drilled 4 wells on our rural property, chasing an ever declining water table. What will be the impact of continuously pumping water out of a 600' hole near the river? Will all that water pumping further deplete an already impacted water table? An environmental impact statement for CEMEX needs to address impacts to our limited underground water supply.

2) Air quality and dust emissions
Working as an RN in this highly polluted air basin, I have seen first hand the impacts of air pollution. One in 4 children in our county have asthma and numerous studies link proximity to busy streets and freeways with asthma severity. 3 of oir grandchildren growing up in Clovis have asthma. The emissions of diesel trucks and dust contribute enormously to the disease burden of our children. The Cemex plant is a major contributor of these emissions.

Comment 432-2

3) Biological Resource impacts
Clear cold water is essential to fish habitat, including restoring Salmon to the San Joaquin River. Loss of the fishery impacts the entire riparian ecosystem, including the birds and even river otters that rely on fish. We kayak the San Joaquin river almost weekly and see these beautiful birds including Bald Eagles, Swainson's hawks and Osprey on a regular basis. What a tragedy it would be for these birds to disappear from our area due to noise pollution and water quality degradation.

Comment 432-3

4) Traffic and noise concerns

Comment 432-4

We live on Behymer Ave which is a busy and narrow 2 lane road. As Clovis subdivisions are rapidly approaching Behymer, this congestion will increase markedly. I already see numerous CEMEX trucks traveling this road, adding to the noise and congestion. The limited infrastructure in this area does not support expansion of the CEMEX plant.

5) Cumulative Environmental Effects

Comment 432-5

In addition to air and noise pollution and impacts to local traffic, there is an even more important reason to not grant CEMEX a 100 year lease extension. This has to do with the limited opportunity for outdoor recreation in Fresno. The San Joaquin River is the only natural green space for our City. Having lived in areas such as Boulder Colorado, with extensive open spaces around the city, I have seen how access to natural areas impacts quality of life as well as improves property values. The Parkway trust should be allowed to expand the only natural area adjacent to our city for all to enjoy. Hearing the blasts and machinery noise from an expanded CEMEX plant is not compatible with creating a natural area space for all of our area residents to enjoy!

Comment 432-6

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long term health of the San Joaquin River watershed and surrounding communities is protected.

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,

Ingeborg M Minton BSRN
5192 E Behymer Ave,
Clovis, CA 93619
559-281-8781

From: B Nelson
To: Randall , David A.
Subject: DEIR Cemex blasting project comment
Date: Sunday, March 9, 2025 11:53:08 AM

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Report Suspicious

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Mr. Randall,

I write to you as a resident of North Fresno who frequently travels Friant Road and as someone who values our native fauna and flora in the San Joaquin River floodplain.

Comment 433-1

I am writing in regard to the DEIR for the Cemex Rockfield proposed expansion. I urge you to deny this project because the applicant has failed to provide answers for mitigating for blasting, noise and water pollution and habitat destruction on native species, such as the Swanson's hawk, bald eagle and salmon, and has failed to provide answers for other impacts, such as increased traffic and potential flooding in the river bottom encroaching into the site.

Comment 433-2

I am still shocked that the county would entertain the thought of an expansion of this dirty, polluting, destructive project. We need to rehabilitate the river for recreational and environmental purposes, not further destroy it.

Comment 433-3

As a former board member of Tree Fresno and of the local chapter of the California Native Plant Society, I am deeply concerned that yet

more quarry activity on the river will further degrade the water quality, air quality and ecology of the surrounding areas.

Comment 433-3 Cont.

Separately, I have nearly been run off the road by gravel trucks on Friant Road multiple times. A family friend was almost killed last year on Highway 41 in Madera County when a John Lawson Rock and Oil gravel truck failed to stop at a red light, crushing multiple vehicles and killing an elderly man. A few weeks later, another person was killed by one of the same company's semis in the same area. An expansion of the Cemex operation would only worsen this traffic hazard.

Comment 433-4

We have enjoyed orange picking with our child at Sumner Peck Ranch, exploring the interpretive trail at the fish hatchery, the River Center trail and museum, and the Lewis Eaton Trail north of Woodward Park.

Comment 433-5

The river bottom viewshed is already a disgrace, with numerous pits and blasting scars, inadequate tree cover and native plant restoration and few public access points. Handing over more of this precious natural resource to an extractive foreign mining company for 100 years beggars belief.

Comment 433-6

I have suffered with asthma for many years in a city with nation-leading air pollution scores, and it is clear that a blast pit the depth of a skyscraper will only exacerbate air quality hazards.

Comment 433-7

Cemex's reporting is lacking in scope, fails to address multiple areas of impact, including soil quality, air quality, wildlife, traffic and noise impacts.

Comment 433-8

Open-pit blasting should be a relic of the past for a growing city like Fresno, and should be entirely phased out.

Thank you,
Brooke Nelson
(559) 351-6642
Fresno 93711

From:	Jesse
To:	Randall , David A.
Subject:	I DO NOT SUPPORT CEMEX EXPANSION
Date:	Sunday, March 9, 2025 11:17:17 AM

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Report Suspicious

Dear Mr. Randall,

My name is Jesse Nieves. I own the home at 461 E. Pebble Beach Dr. in the Woodward Lakes community. I do not support any mining or other activity by CEMEX or any other similar company in area. Please do not allow their plans to go forward. I am sure you want what is best for the health and wellbeing of the community and environment over corporate profits.

Comment 434-1

Thank you,
Jesse Nieves

From: Carolyn Nolan
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Sunday, March 9, 2025 11:00:21 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 7, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

Comment 435-1

My husband and I moved to the San Joaquin Valley from San Francisco in May, 1970. We owned and operated Central Coating Co Inc., a licensed contracting business working for wineries in northern California and specializing in industrial coatings, insulation and roofing. We had contracts with Gallo, Constellation Wines and other large wineries in the area. We settled in Madera County and raised two children there. I was the Chief Financial Officer of this business. In addition, I became active in the local community and was elected to the Madera Unified School District Board of Trustees.

We fell in love with the San Joaquin Valley and particularly the San Joaquin River. My husband's hobby was fishing and we spent lots of time on the river in the headwaters of the river as well as canoeing in the area below Millerton Dam. We consider the river to be the soul of the San Joaquin Valley as it is the lifeblood of the region, supporting agriculture, providing water, and shaping the landscape, making it a vital resource for the valley's economy and ecosystem. I served as a board trustee of the San Joaquin River Parkway Trust for 19 years and also represented Madera County on the San Joaquin River Conservancy for a time.

My husband passed away unexpectedly in 2009. I became a resident of Fresno in 2014.

I am writing to express my deep concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 435-1 Cont.

Impacts on Water Quality & the San Joaquin River

Comment 435-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 435-3

Impacts on the San Joaquin River Parkway & Recreation

Comment 435-4

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. **The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch**, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 435-5

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 435-6

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR.

Comment 435-7

- **Air Quality:** I am particularly concerned about how this blast mining project with resulting dust will affect our area's air quality. How will the impact of increased dust be mitigated?

Comment 435-8

Threats to Wildlife

Comment 435-9

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 435-10

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,

Carolyn E Nolan

482 W San Ramon Ave unit 102

Fresno, CA 93704

cnolan41@gmail.com (559)706-6009

Carolyn E Nolan

482 W San Ramon Ave unit 102

Fresno, CA 93704 cnolan41@gmail.com (559)706-6009

From:	Rebecca Patel
To:	Randall , David A.
Subject:	CEMEX Expansion project
Date:	Sunday, March 9, 2025 11:36:52 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. Randall,

I am writing as an active community member of Fresno, asking you to deny the CEMEX proposal for expansion. I have been following the proposal process through news articles over the past few years, and am frankly surprised it has made it this far. The environmental impact to our green spaces would be substantially negative. Why are we considering any project that could so negatively impact our water and air quality, as well as the future of the San Joaquin River? More than ever, it is our duty to be good stewards to the land and to the health and public safety of the residents of Fresno County.

Comment 436-1

Part of the proposal offers alternatives to their initial request. Most of those alternatives are offering essentially the same plan, with varying depths for their giant hole. My personal opinion is the first alternative is the only appropriate option: No project. Despite arguments to the contrary, this is not a necessary project for our community.

Comment 436-2

I appreciate the great responsibility you and your team have in determining how to move forward. Please put the health and well-being of our residents and our land first.

Thank you,

Rebecca Patel
Fresno County Resident
Concerned Citizen

Keving and Marisa Ploog
15150 Mesa View Avenue
Friant, CA 93626

Mr. David Randall
County of Fresno, Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Road, Sixth Floor
Freno, CA 93721

RE: Opposition to Draft EIR (DEIR) for the Proposed CEMEX Rockfield Quarry Modification Project

The proposed CEMEX Rockfield Quarry Modification Project (EIR No. 7763 and Unclassified Conditional Use Permit Application Nos. 3666 and 3667) has raised significant concern among residents of the River View Ranch community and those dependent on the CSA 44c wells.

Comment 437-1

In 2012, my husband and I purchased our property to build our home in the River View Ranch community. At that time, the existing mining efforts conducted by CEMEX at the Rockfield Quarry were set to expire. We felt comfortable knowing that those operations would be concluded within a short period of time after we built and moved into our new home.

We have many concerns about continued mining, its expansion, and impacts on water, noise, air quality, property values, and community well-being. The DEIR increases our concerns with its vague identification of issues and lack of detailed mitigation recommendations.

Relocation of Existing Aggregate Plant Location

Comment 437-2

The DEIR states that CEMEX plans to relocate its plant to the Rockfield Quarry within 30 years, starting with "Stage 1." Figure 2-8 of the DEIR shows the mining divided into five stages over the proposed contract. Phases one and two are directly in front of the River View Ranch community. If the project lasts 100 years in five phases, Phases one and two would span the next forty years. This means CEMEX would blast, drill, mine, crush, and transport directly across from the River View Ranch community for the next forty years. The proposed relocation of the CEMEX processing activities will have a significant negative impact on the environment of River View Ranch.

The DEIR reveals that CEMEX plans to immediately relocate most of its processing activities to the Rockfield Quarry and use portable and temporary equipment in the first phase of Stage 1. The *current* mining activities by CEMEX have already significantly impacted our daily lives. The noise from excavation and transport equipment alone is so loud that we cannot have a conversation in our backyard without significantly raising our voices. The sound levels drop considerably during the weekends and the days CEMEX is not operational. The proposed modification project will significantly increase noise levels in the surrounding areas. CEMEX projects to more than double its activity from that currently being performed; immediately increasing its activity from 1.4 MT/year to 2.0 MT/year within the first five years and an additional 1 MT/year beginning in year ten. The unavoidable increased noise from blasting, drilling, and the operation of heavy machinery used to

transport and crush materials will not only further disturb the peace of the River View Ranch community but also potentially impact the health and well-being of its residents.

Comment 437-2 Cont.

Increased Noise

The DEIR lacks a thorough analysis of how blasting may impact residents, families, and pets. It insufficiently addresses the concern about vibrations and fails to provide adequate monitoring or mitigation measures for neighboring properties and occupants.

Comment 437-3

Dust, Diesel Fumes, Air Pollution and Other Airborne Particulate Materials

Comment 437-4

The project is expected to generate substantial amounts of dust and diesel fumes, which will adversely affect the air quality in the vicinity of the quarry. While CEMEX currently tries to reduce the amount of dust generated by ongoing mining and excavation activities, we experience an unreasonable amount of residual dust released into our community. Currently, we battle high levels of dust and silt that cover interior and exterior surfaces alike. We believe the particulate matter released by CEMEX's current activities presents risks to our respiratory health. We expect that the proposed increased mining activities will exacerbate these issues.

- The DEIR says that project emissions may exceed cancer risk thresholds. What analysis has been conducted to determine the risk of cancer-causing exposure to those residing directly across from the quarry site?
- What specific monitoring procedures will be implemented to ensure homeowners are protected from any identifiable increased risk?
- If the risks cannot be mitigated, who will be responsible for the impact on resident health?

Comment 437-5

Over the years, we have submitted multiple complaints to the San Joaquin Valley Air Pollution Control District (SJVAPCD). Unfortunately, these reports have historically yielded no resolution. We have repeatedly submitted complaints to the San Joaquin Valley Air Pollution Control District (SJVAPCD) without success. Despite providing photos and videos, SJVAPCD requires their representatives to witness the issues firsthand. By the time they arrive, the dust has settled, so no violations are observed. As a result, CEMEX only receives verbal warnings. (A sample of photo's are attached at the end of this letter and videos accompany this email).

Comment 437-6

- Current dust mitigation efforts are ineffective. What measures will be implemented to address this under the proposed contract?
- Who will be responsible for monitoring? It should not be the public's responsibility to oversee this matter.

Strong winds in the Friant corridor often raise dust from the quarry site, even without mining activities. The dust and fine silt coat our windows, solar panels and interior areas of our home at an unreasonable level.

Comment 437-7

- How will dust and other air pollutants from blasting and mining be monitored?
- How will dust and other air pollutants from blasting and mining be mitigated?

Diesel exhaust fumes on some days are overwhelming in the River View Ranch neighborhood across Friant Rd. SJVAPCD has been called out for this and stated that they do not address exhaust fumes coming from "Construction Sites" and do not know who to contact that does.

Comment 437-8

- What measures will be implemented to monitor the emissions of all equipment used by CEMEX?
- What will be the procedure for reporting air pollution issues?
- What steps will be taken to ensure tractors, scrapers and other equipment have appropriate emission controls?
- How will the levels of diesel exhaust fumes be controlled to avoid interfering with the enjoyment of neighboring residential outdoor environment?

Proposed Hours of Operation

Comment 437-9

CEMEX is proposing to increase the hours of operation at the quarry location. Existing permitted hours of operation for excavation activities at the Quarry site currently run from 7:00 am to 6:00 pm, Monday through Friday. Maintenance of equipment has slightly expanded hours to 8:00 pm, including weekends. CEMEX proposes expanding its excavation operations at the Quarry location by two hours each weekday, starting at 6:00 am and ceasing at 7:00 pm. Further, CEMEX proposes adding recycle processing during that timeframe, which can be expected to increase the level of noise interference. CEMEX also seeks to extend hours of operation for loading and unloading and aggregate trucking, beginning at 4:00 am and extending until 9:00 pm. The proposed introduction of new lighting at the quarry's proposed plant location will destroy the beauty of our evening and nighttime skies. These proposed extended hours and activities virtually eliminate any weekday peace in our neighborhood. CEMEX operates at the limits of the current hours of operation. Although excavation may not commence until 7:00 am, dirt haulers are often positioned and ready as early as 6:30 am.

CEMEX's scrapers emit exhaust fumes while moving soil in the quarry, negatively affecting our neighborhood. Some days, the fumes are so strong that we can't enjoy our backyard until the wind direction changes or the scrapers end their days work.

- WE do not feel sufficient analysis was done to determine the need for effective noise reduction measures.
- We do not believe the impact of increased noise from quarry activities, such as blasting, drilling, crushing, and excavating, on nearby residential neighborhoods was adequately studied and/or mitigated.
- We do not believe the impact of diesel emissions on nearby residential neighborhoods was adequately studied and/or mitigated.

Risks Associated With Proposed Blasting

Comment 437-10

The proposed location for the new plant at the CEMEX Rockfield Quarry is in close proximity to the River View Ranch community and the CSA 44c wells. These wells are crucial for supplying water to the residents. The modification project includes plans for increased mining, including blasting and drilling activities, which poses a direct threat to the stability and quality of the water tables and infrastructure that serve CSA 44c.

Blasting and drilling activities are known to cause significant vibrations and disturbances to the surrounding geological formations. We are very concerned that CEMEX's expanded mining activities could negatively impact the water tables and potentially fracture the aquifers. Furthermore, the proposed drilling activities could introduce pollutants into the water tables, leading to contamination of the water supply. This is particularly concerning given the reliance of our community on these wells for their daily water needs. This would directly impact our community by disrupting the water supply to CSA 44c wells. The DEIR does not adequately addresses these concerns. The DEIR states that monitoring will occur during the blasting cycle and operations will cease if any damage is detected. This means that blasting activities will stop only **after** damage is observed. This is unacceptable.

Comment 437-10 Cont.

- How will the quality of our water be assured?
- What measures will be taken to ensure our water remains safe?
- How will CEMEX be held accountable if the wells, pumps or other related infrastructure become compromised as a result of vibrations, disturbances or any other operations.

Our neighborhood is situated on land with very sandy soil. There is great concern relative to the vibrations caused from blasting and the potential for land shift causing damage to our private roads, residential foundations, driveways and pools.

Comment 437-11

- We do not feel the DEIR considers the impact on residential neighborhoods adjacent to the Quarry in any meaningful way.
- How will community members be assured that CEMEX will be held financially accountable for any damages resulting from their activities.

Visual Aesthetics and Risk of Property Value Loss

Comment 437-12

It is clear that the proposed mining expansion will have a significant negative impact on the immediate visual aesthetics of the quarry location. The mitigation outlined in the DEIR are inadequate. Staining the walls of a hole six times deeper than CEMEX's past mining activities over 100+ years will not be sufficient to mitigate the negative impact. This is laughable! We do not feel the DEIR adequately addresses the negative impact of the visual aesthetics of their proposal.

Increased noise, air quality issues, water contamination, and light pollution will likely lower property values in River View Ranch. Prospective buyers will be put off by these environmental concerns. The neighborhood's amazing views have already been impacted by historical mining. Despite nearing the end of their contract after 100+ years of mining, CEMEX was expected to implement restorative measures. Instead, CEMEX proposes another 100 years of more aggressive mining. This will destroy the natural beauty of the Friant corridor and will likely decrease property demand in the area. This can significantly impact residents' ability to sell their properties at fair market values.

Comment 437-13

- How will the impact of residential property value loss be mitigated?

We strongly oppose CEMEX's continued mining efforts at the quarry and have concerns relative to many findings and recommended mitigations in the DEIR. While reviewing the DEIR, we found that the mitigation recommendations only appear to move the needle from "Significant" to "Potentially

Significant", rather than mitigate issues to a more conservative extent of "Less than Significant" or "No Impact". This indicates that the mitigation recommendations focus on meeting the minimum acceptable range rather than prioritizing the best interests of those directly affected by those activities.

Comment 437-13 Cont.

The opposition to the DEIR for the proposed CEMEX Rockfield Quarry Modification Project is rooted in legitimate concerns about the potential risks and adverse effects on the River View Ranch community and the CSA 44c wells. It is imperative that these issues are thoroughly addressed and mitigated to protect the health, safety, and quality of life of the local residents. We urge the relevant authorities to reconsider the findings in the DEIR and explore more significant mitigation solutions that do not compromise the well-being of the community and the environment.

Comment 437-14

Comment
437-15

From: Georgia Porcella
To: Randall , David A.
Cc: sweaver@riverparkway.org
Subject: San Joaquin River - Rockfield Expansion Project DEIR
Date: Sunday, March 9, 2025 10:07:27 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior PlannerCounty of FresnoFresno, CA Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David,I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project, I have several concerns that I urge you to address prior to moving forward with approval. 1. Impacts on the San Joaquin River Watershed

Comment 438-1

2. Biological Resource
3. Transportation and traffic impact
4. Cumulative Environmental Effects

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter. Sincerely,

Comment 438-2

Georgia Porcella
Clovis

From:	Carole Putnam
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project Comment
Date:	Sunday, March 9, 2025 7:29:58 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am writing to express my concerns re. DEIR No. 773 for the proposed CEMEX Rockfield Expansion Project. It is astonishing to me that this project is even being considered, especially factoring in the negative impacts it will have on the land and surrounding the area. Comment 439-1

Having grown up and lived in Fresno for most of my 50+ years, outdoor space has not always been easily accessible. Yes, I am fortunate to have a car so that I am able to drive to the many beautiful spaces we have along the river. In particular Sumner Peck Ranch, Ball Ranch and Lost Lake (and the nearby fishery) are all gifts to the community and spaces I have enjoyed over the year. It has been encouraging to see this space expand and available for public use. Taking walks, viewing wildlife, and getting away from the "busy" city has been a blessing.

Yet I can only imagine what a nightmare the noise will be, along with all of the other negative impacts that will ensue. Threats to wildlife, traffic congestion, air quality issues and impacts on water quality and the San Joaquin River are real concerns. Blasting a 600-foot deep open pit along this area is truly a nightmare. I don't understand how there could be any positive benefits, besides financial aspects. Even the promises of "jobs" is tainted by the cost to our beautiful river and surrounding community. Who is really making the profits from this project? Comment 439-2

Because of these concerns, consider rejecting this proposal altogether. At the very least, I urge you to do further research and think about less harmful alternatives.

Thank you for your time and consideration.

Sincerely,

Carole D. Putnam
Fresno, CA

From: louise richardson
To: Randall , David A.
Subject: CMEX
Date: Sunday, March 9, 2025 11:55:59 PM

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Report Suspicious

Dear Friends,

Comment 440-1

Please do all you can to keep from letting CEMEX acquire additional aggregate mining rights along the beleaguered San Joaquin River and its environs. More than enough aggregate mining rights have been granted to CEMEX and other companies such at Vulcan Materials to satisfy Fresno County needs.

Comment 440-2

Trucks using County roads to get the aggregate to where needed will greatly contribute to damage of these roads. And who will be responsible for repairing these roads? Why Fresno County, of course, This County does need this added responsibility.

Thank you for your time and consideration.

Sincerely, Louise Richardson
1674 W. Bullard Ave.
Fresno, Ca 93711

From: Donnie Ross
To: Randall , David A.
Cc: sweaver@riverparkway.org
Subject: Comments on CEMEX Rockfield Expansion Project DEIR- Donnie Ross
Date: Sunday, March 9, 2025 9:50:46 PM

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Report Suspicious

9 March 2025

David Randall, Senior Planner

County of Fresno

Fresno, CA

Dear David,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

Comment 441-1

The Friant dam was found in violation of California law (CA Fish& Game Code Section 5937) , and a settlement was reached to restore the San Joaquin River. How will this project impact that restoration?

Only 5% of California's riparian habitat is left of what is once was. The river's flow has been reduced by 97%. The proposed sites are adjacent and encroaching on that vital habitat, which will only further its decline. The San Joaquin river is already one of the most polluted rivers in the United States.

Comment 441-2

The residents of Fresno will be left with this mine and it's 600-foot pit forever. When CEMEX moves on, we will be left in the wake. We must protect our natural resources.

Comment 441-3

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

Comment 441-4

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Respectfully,

Donnie Ross

From: Tance Salafia
To: Randall , David A.
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Sunday, March 9, 2025 2:42:22 PM

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Report Suspicious

Dear Mr. Randall ,

First off, we would like to thank you for your work and service on the Fresno County Planning Commission. It surely is a demanding job with much to consider.

Comment 442-1

We moved to Woodward Lake in November of 2020 and absolutely love the area. Having grown up in Fresno (Old Fig Garden area) and leaving for college in 1984, this part of the city was considered "way north of town" the boondocks! Hasn't that all changed. Though only living here for 4 short years, we have seen tremendous growth North and East of Copper and Friant. Because of this, the traffic is terrible and there have been at least 6 fatalities on Friant between Copper and Audubon. One was directly caused by a commercial truck speeding thru a light and killing a young woman. Very sad, and tragic to say the least.

When CEMEX first began their mining practice in the area, the population was smaller . Since that time it has exploded. Which causes concern for the various impacts a 600 foot mine dug out by explosives would have.
As mentioned: the **traffic** would obviously increase with more trucks traveling along Friant and other roads . How would adjacent neighbors **wells** be affected by the deep pit? What about the San Joaquin River? This area is deemed an environmental reserve. There is a **chemical** that is released, when hitting hard rock similar to the microplastics, which can be absorbed thru the bloodstream. The DEIR mentions an increased cancer risk ---NO ONE wants this.

Comment(s) 442-2 442-3 442-4

This is not the area to do a deep mine, there are too many people who live in the area , who would be affected by changes in air quality, possible noise issues , aesthetics, etc. Due to the tremendous residential growth in both Madera and Fresno counties, it is time for CEMEX to move operations.

Comment 442-5

Thank you for your consideration,

Anthony and Frances Salafia
646 E Teal Circle
Fresno

From:	Ileana Santos-Gonzalez
To:	Randall , David A.
Cc:	sweaver@riverparkway.org
Subject:	Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date:	Sunday, March 9, 2025 9:24:48 PM

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Report Suspicious

Dear Mr. David Randall,

My name is Ileana Santos-Gonzalez and I am a member of our Fresno community. I grew up here in Fresno and returned 5 years ago after moving away for college and work. The San Joaquin River has been a critical part of my childhood memories with family at Lost Lake, as a student with River Camp, and now for peaceful walks and bike rides. As a community member, I have serious concerns about the long term impacts of the CEMEX Rockfield Quarry Modification Project on the San Joaquin River, the water quality, and air quality to name a few.

Comment 443-1

Impacts on the San Joaquin River Parkway & Recreation

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

Comment 443-2

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 443-3

Impacts on Water Quality & the San Joaquin River

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

Comment 443-4

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 443-5

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the

Comment 443-6

document identifies the fact that there is groundwater/surface water interaction at both sites. Comment 443-6 Cont.

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project. Comment 443-7

Thank you for your time in reviewing these concerns.

Best,
Ileana Santos-Gonzalez

From:	Joan Schoettler
To:	Randall , David A.
Subject:	CEMAX
Date:	Sunday, March 9, 2025 6:25:14 AM

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Report Suspicious

Dear David,

Comment 444-1

I applaud Fresno County Board of Supervisors for rejecting the CEMEX Jesse Morrow Mountain Proposal and hope they have the same insight to reject the current CEMEX proposal for the San Joaquin River. Already the mine is an eyesore in the San Joaquin River. The River Conservancy continues to develop the San Joaquin River as a place of recreation, a beautiful waterway, and a place where nature can be enjoyed by all. The people of Fresno deserve to have their river to enjoy.

Joan Schoettler

From:	MICHAEL SMITH
To:	Randall , David A.
Subject:	Comment re Draft EIR on CEMEX rock mine in River bottom
Date:	Sunday, March 9, 2025 7:18:53 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

This project should be rejected. The River is an essential part of Fresno County's environment and future. To establish a 100 year (!) right to continue to damage the environment in this sensitive location is an absurd violation of the public trust and public interest, for generations to come.
I regularly use the River area for recreation and access to nature. It is a vital asset to fresno and Fresno County.

Comment 445-1

The noise dust and pollution from gravel mining already has scarred this precious part of our environment, and CEMEX plan to expand and continue the damage must be stopped.

Comment 445-2

I'll leave the technical details to others, but I can say that the peace quiet and beauty of this river must be preserved!

Best regards,

Michael J.F. Smith
1659 West Stuart Avenue
Fresno, CA 93711

Sent from my iPhone

From: Ar Suda
To: Randall , David A.
Subject: Form Post from Firefox
Date: Sunday, March 9, 2025 6:03:55 PM

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Report Suspicious

Arl Suda
Kensington CA 94707
asuda@email.com

March 9, 2025

David Randall Planner
City of Fresno
2600 Fresno Street
Fresno, CA 93721

Dear City Planner,

My name is Arl Suda, and I am a concerned citizen who deeply cares about the wildlife and natural environment surrounding the San Joaquin River. I am writing to express my concerns regarding the proposed expansion of the CEMEX-Commerce Group's mining operations near this precious area. Comment 446-1

As you know, the San Joaquin River is home to diverse ecosystems and provides vital resources for both wildlife and human communities alike. The health and sustainability of this river system are critical not only for the flora and fauna that depend on it but also for the long-term well-being of our environment.

I respectfully request that CEMEX be required to conduct and submit a thorough Environmental Impact Report that specifically addresses the potential harm their proposed expansion might have on the San Joaquin River. This report should carefully evaluate, at a minimum, the following aspects: Comment 446-2

1. Air Quality: How will the expansion of the mining operations affect the air quality in and around the San Joaquin River area? Will dust and emissions from machinery and transportation increase, potentially harming both human health and local wildlife?

2. Water Quality: The mining project should be evaluated for its potential impact on the water quality of the San Joaquin River. Will the expansion contribute to runoff or contaminants that could harm the river's delicate ecosystem and the species that depend on it? Comment 446-3

3. Wildlife: Finally, I urge you to ensure that the report includes an analysis of the impact on local wildlife. This includes both the direct harm that might come from habitat destruction and the indirect consequences of air and water pollution on the health of animals that inhabit the Comment 446-4

area, including the Swainson's Hawk.

Comment 446-4 Cont.

Given the rich biodiversity that relies on the San Joaquin River, it is critical that any development near it be held to the highest environmental standards to ensure that wildlife and the river's ecological balance are not compromised.

Comment 446-5

I trust that, as stewards of our city's natural resources, the City of Fresno will prioritize the protection of our environment and ensure that CEMEX provides the necessary data to demonstrate that their operations will not harm the San Joaquin River area that I love.

Sincerely,
ARl Suda

From: lucy Tecorral
To: Randall , David A.
Cc: sweaver@riverparkway.org
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Sunday, March 9, 2025 9:25:08 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. Comment 447-1

1. Impacts on the San Joaquin River Watershed

Do they have a history of beneficial reuse of their former mining sites? What assurance do we have that CEMEX, a foreign corporation will have the resources and commitment to meet proposed restoration efforts at the end of the project?"

2. Air Quality and Dust Emissions

The DEIR says that project emissions may exceed cancer risk thresholds. DEIR pg. 4.3-63. The DEIR says that because mitigation measures would reduce emissions, the DEIR did not evaluate population-wide cancer burden. DEIR at pg. 4.3-64. CEQA requires that the analysis be performed before taking into account implementation of mitigation measures The central valley has one of the worst air qualities this will affect our health negatively. Comment 447-2

3. Biological Resource Impacts Comment 447-3

Inadequate analysis of the potential effects of the project on the state listed as threatened Swainson's hawk. *With more than four dozen breeding season occurrence records of this species within 2 miles of the project site (eBird 2025) and numerous potential nest trees within 0.5 mile, the project could impact Swainson's hawk. Construction activities such as blasting, excavating, trenching, or using other heavy equipment that disturbs or harms a Swainson's hawk or substantially modifies its habitat could constitute a significant impact. To meet California Department of Fish and Wildlife (CDFW) recommendations for mitigation and protection of this species, protocol surveys would need to be conducted within a 0.5-mile radius around all project activities. If active nesting is identified within the 0.5-mile radius, consultation with that agency would be required.*

4. Traffic and Noise Concerns Comment 447-4

Cemex states that they will not mitigate the traffic congestion. That is ludicrous, This very wealthy company needs to mitigate the traffic congestion on Willow to Friant Road. There is precedent in this county for this requirement. Table Mountain helped finance turning Friant Road into a four lane highway. Vulcan at the Austin quarry on road 145 and 41 has been required to make modifications on Road 145. They are required to finance Highway 41to a four lane road when the county is ready to begin construction. 1) At the Friant Willow junction there should be two left lanes made for turning onto Willow from Friant. The trucks should only be allowed to

use one lane. 2) A requirement that the entire Willow Road between Friant and Copper be expanded to 4 lanes. 3) A requirement that the north direction on Willow be expanded to two lanes from International to Copper. 4) There is a concern with increased heavy truck traffic effecting the traffic safety near the schools on International and Willow. If Cemex cannot afford this they have no business mining on the river. What happens if there is a catastrophe at the mining site? Will they say we don't have money to repair?
This will make traffic even worse.

Comment 447-4 Cont.

5. Cumulative Environmental Effects

The issue pertains to the public safety hazard that the quarry will represent after the project is complete 100 years or so from now (and maybe before). With the stepped but vertical walls and a surface water elevation more than 400 below the trail elevation, the open quarry will not be suitable for fishing, swimming, boating, kayaking, canoeing, floating or anything else. But it will be ATTRACTIVE, especially to preteens and teenagers. There is not a fence that will keep them out. What will happen if one or more of the public falls into the pit? They won't fall all the way down - just 50 feet. That is a sure death.

Comment 447-5

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Comment 447-6

Sincerely,
Lucy Tecorral

Venus Warner
15264 Mesa View Ave
Friant, CA 93626

03/09/2025

David Randall, Senior Planner
Fresno County Public Works & Planning Department Development
2220 Tulare St, 6th Floor
Fresno, CA 93721

Dear Mr. Randall,

This letter is in response to the public comment period relating to the CEMEX Rockfield Quarry:

Comment 448-1

Rockfield Modification Project (EIR 7763) and Unclassified Conditional Use Permit Applications Nos. 3666 and 3667
Draft Environmental Impact Report
Volume 1: Executive Summary-Chapter 10
State Clearinghouse No. 2020060123

My name is Venus Warner, I live with my husband, and my mom in the River View Ranch community that is directly across from the CEMEX Quarry site alongside Friant Road, in Fresno County. **We are all absolutely opposed to the proposed 4-year extension of this quarry site and mine, as well as the 100-year extension or what is being called the "CEMEX Rockfield Expansion"!**

When my husband and I bought our home 5 years ago we were told by the old homeowners and our realtor that that all "mining" operations at the Quarry Site would cease in July 2023. We have yet to see this happen! Had we known that such ludicrous proposals by CEMEX and then to be voted on by our Fresno City and County Officials that would allow the Rockfield Quarry a continuation and modification of its current aggregate (rock, sand, and gravel) mining and processing operations that is literally directly across from our "new home" would be entertained, we would have never bought our home nor in this part of the Fresno City or County area.

Since moving to this community 5 years ago, my family and I as well as our neighborhood friends have repeatedly shared the following concerns regarding the Quarry Site adjacent to our homes via phone calls, emails and Zoom call/meetings when asked to do so, though our chance to respond is always given last minute and the timeframe to respond is very limited, only about a month or so to respond. I'll do my best to address the Quarry Sites Project Objectives as well as so of my own concerns on how deep quarry mining could impact the following:

Comment 448-1 Cont.

Comment 448-2

1. Provide a reliable and sustainable, local source of high-quality aggregate to help meet the current and long-term demand (100yrs) for construction materials in the Fresno region.
    a. Vulcan Materials Company is the nation's largest producer of construction aggregates—primarily crushed stone, sand and gravel—and a major producer of aggregates-based construction materials, including asphalt and ready-mixed concrete. Their coast-to-coast footprint and strategic distribution network align with and serve the nation's growth centers.
2. Continue to utilize known aggregate reserves from existing partially mined properties, including those designated by the state and county as Mineral Resource Zone 2 (MRZ-2) (Mineral Resource Zone areas where adequate information indicates that significant mineral resources are present, i.e., sand and gravel).
    a. Yes, for the next couple of years there will be enough sand and gravel to mine without having to blast and then crushing the rocks that were blasted. I am against the use of explosives/blasting in order for CEMEX to extract the raw material.
3. Continue to utilize high quality aggregate resources that meet the California Department of Transportation's specifications for use in Portland Cement Concrete (PCC) and Asphaltic Concrete (AC), which aggregate is important for quality infrastructure growth and maintenance because of its versatility, value, and relative scarcity.
    a. No one can deny the high quality aggregate resources that come from the Quarry Site, but this raw material can be sourced in other areas that are not so close to a major river and communities of people that rely on well water for their everyday living. The deep mining can put hundreds if not thousands of people at great health risks if the river water or any well waters are contaminated by the work being done by CEMEX at the Quarry Site.
    b. Who will be responsible for the river water quality contamination checks?
    c. How often will the river water quality checks happen, every three months, six months or yearly. I think it should be every three months.

Comment 448-3

Comment 448-4

Comment 448-4 Cont.

   d. Can we request that a third-party company test the river water every three months?
   e. Can we request that a third-party company test our well water every three months?
   f. If there is water contamination, will we be notified, how quickly. Will work stop at the Quarry Site until everything is resolved.

4. Maintain a local source of construction aggregate with enough annual sales capacity (3.0 MT) to encourage a healthy, competitive market. Comment 448-5
   a. The blasting should not start, because the aggregate (rock, sand and gravel) can be sourced by Vulcan Materials Company.
5. Continue to provide aggregate resources with access to an efficient local road network.
   a. The Quarry Site on Friant Road is an efficient local road, but within the last 5 years of living in our home we have noticed the traffic has jumped significantly upwards due to all the homes near Millerton Lake and Table Mountain Casino. Traffic is a huge issue! Comment 448-6
6. Continue to provide an environmentally sound project that would balance the recovery of the aggregate resource with the protection of other resources including wildlife habitat, groundwater, surface water, and air quality. Comment 448-7
   a. Using explosives in quarry mining can pose significant environmental risks, including gas and dust emissions, noise pollution, and the potential for flyrock, which can harm local wildlife and human populations. Look up recent deaths due to flyrock.
   b. What type of explosives will be used to break the rock away from the ground surface.
   c. How often will the explosions happen? Will we be notified before they happen?
   d. If our homes or property are damaged due to the explosions, what is our recourse of action to make our claim against CEMEX?
7. Continue local quality jobs, while also benefiting local downstream businesses and creating an enhanced tax revenue to the county. Comment 448-8
   a. Yes, jobs are created by CEMEX all the while benefiting local downstream businesses which in turn enhances tax revenue to the county, but it could be at great health and safety risks to local residents up and down the area near the Quarry Site.
   b. How will those health and safety risks be abated?
8. Maintain consistency with the San Joaquin River Parkway Master Plan. Comment 448-9

Comment 448-9 Cont.

a. In no way will the Quarry Site or the Plant Site ever be able to maintain consistency with the San Joaquin River Parkway Master Plan, that is just a flat out lie of a statement.

9. Reclaim both sites to wildlife habitat in a manner similar to the reclaimed mine sites that make up the majority of the San Joaquin River Parkway Properties.

Comment 448-10

   a. CEMEX hasn't done a good job of reclaiming any of the old mine sites. Any wildlife habitation on those sites is null and void. From north Fresno, take a drive on Friant Road into the town of Friant then turn around and head back the same way you came to look at the awful views of their so-called reclamation for the wildlife habitation.
   b. An actual Landscape Architect and local Environmental Clubs should be hired now to reclaim the old mine sites as well as draw up plans for the Quarry Site when it is no longer in use.
   c. For the current Quarry Site, monies should be put aside now into a safe investment, under the representation of a third party, so when the time comes the monies within those investments can be used to help reclaim the area for wildlife. The starting amount should be $250,000.00. The initial investment should grow at a reasonable rate a year and the monies can only be used for the reclamation of the current Quarry Site.

10. Provide potential Parkway trail easements.

Comment 448-11

   a. When will the potential Parkway trail easements come into fruition?
   b. How long will the potential Parkway easements last?
   c. If the easements are given, who will maintain the easement portion of land from the CEMEX area to the Parkway?

1. **We oppose the 4-year extension, due to CEMEX not being able to provide a current EIR.** Comment 448-12
    1. This vital document, the EIR, should be current and available for us to review before the 4-year extension is passed, so we can know how our quality of life may be affected, due to the drastic eradication CEMEX is proposing for our environment. All work should cease at this site until an EIR is completed!
2. **We oppose the 100-year extension, due to CEMEX not being able to provide a current EIR.**
    1. All work should cease at this site until an actual EIR is completed!
3. **What are Cemex's specific guidelines for Hard Rock Mining for this specific quarry site?** Comment 448-13
    1. How can I receive a copy of these guidelines?
    2. When can I receive a copy of these guidelines?
4. **Water Quality** Comment 448-14
    1. Since my family and I moved to this neighborhood 5 years ago, we have already experienced significant water issues, low pressure to no pressure (no water), significant amounts of sand and tiny pebbles in the water lines. Fresno County is aware of these issues because they are who we are to call when something goes wrong, which it has many many times!
    2. There has never been deep quarry mining near any part of the San Joaquin River, per a recent article in The Fresno Bee.
    3. How is Cemex going to assure us that the aquifer water levels will not be significantly reduced or depleted altogether for my neighborhood, the surrounding homes and housing developments within a few miles away (Friant, Fresno & Madera), due to quarry dewatering and rock removal at the Quarry site?
        i. **Note:** The only homes that were notified of the possible CUP for the deep quarry mining were only within 1 mile from the quarry site, and only on Fresno County's side, not Madera County. This is appalling, because the homes and agricultural businesses on the Madera County side also rely on water and good water at that!
    4. How is Cemex going to assure my neighborhood, the surrounding homes and housing developments within a few miles that our water quality will not be contaminated?

i. Note: See above note.

Comment 448-14 Cont.

5. Does Cemex have a plan to provide an alternative water supply to property owners in the surrounding communities (Friant, Fresno and Madera) whose wells will be significantly impacted, due to Cemex blasting a 600-foot deep mine?
6. Does Cemex know if there will be Temperature Changes in the ground water?

i. How often will Cemex or a third party be monitoring the Temperature Changes in the ground water?

Comment 448-15

ii. Has Cemex conducted research (EIR) on the effects of Temperature Changes to the ecosystem and aquatic life in and around the San Joaquin River? Is Cemex prepared financially to continue the use of the thermal impact monitoring at the quarry site after the project ends in 100 years? Will the surrounding communities (Friant, Fresno and Madera) be notified if Temperature Changes occur? Who will be notified if Temperature Changes occur? How will the surrounding communities (Friant, Fresno and Madera) be notified if Temperature Changes do occur?

7. Does Cemex know what the possible affects deep quarry mining might have on the ground-water flow paths for the San Joaquin River. How do they plan to monitor any possible changes in the ground-water flow path? How often will they monitor any possible changes in the ground-water flow path? Will they use Dye Tracing to monitor any changes? Is Dye Tracing safe or unsafe for humans, the ecosystem, aquatic life, and other wildlife such as deer, birds, coyotes, foxes, rabbits, squirrels, lizards, and snakes? Will the surrounding communities (Friant, Fresno and Madera) be notified if Dye Tracing needs to be used to monitor the ground-water flow path? Who will be notified if there are changes to the ground-water flow path? How will the surrounding communities (Friant, Fresno and Madera) be notified?
8. How is Cemex already handling stagnation on ground water in the “reclaimed ponds”?

Comment 448-16

i. Is stagnated ground water good for wildlife because we know it’s not for humans?

9. Blasting at the quarry site could cause increases in turbidity levels. Is Cemex going to monitor the turbidity levels and how often? Will the surrounding communities (Friant, Fresno and Madera) be notified if the turbidity levels increase or decrease? What Turbidity Levels are considered safe by the State and local governments? What Turbidity Levels are considered unsafe by the

Comment 448-17

State and local governments? How will the surrounding communities (Friant, Fresno and Madera) be notified of the safe or unsafe Turbidity Levels?

Comment 448-17 Cont.

5.Air Quality

Comment 448-18

1. What are safe and unsafe air quality measurements for Fresno and Madera Counties?

    i. Can we receive information on the safe and unsafe air quality measurements for Fresno and Madera Counties?

2. Good Safe air quality is important no matter who you are or where you live, but especially to those that live with severe respiratory diseases.
3. Nine out of ten people now breathe polluted air, which kills 7 million people every year, per the World Health Organization (WHO)*.

    i. *The health effects of air pollution are serious – one third of deaths from stroke, lung cancer and heart disease are due to air pollution.

4. The winds in our area typically come in on a southwesterly route, so any dust, dirt, or debris will typically be pushed into the path of our neighborhood (homes). How is Cemex going to mitigate the air pollution that could be caused by this quarry site?
5. Has Cemex completed a neutral study on air quality for this area and the adverse impacts on humans near the proposed quarry and for the type of work they are proposing to do such as; deep mine blasting, an asphalt plant, crushing of large rocks into smaller gravel or pebbles, bringing in reclaimed cement to break it up, and all transportation vehicles and heavy equipment that might be used to bring the material to the surface?

Comment 448-19

    i. If Cemex did complete a neutral study on air quality for this area for the type of work they are proposing, then who reviewed this possible report? What were their findings? Were/will any of the surrounding communities (Friant, Fresno & Madera) be notified of this possible air quality report?

6. There is a proposed residential Retirement Community for 5,000 residents called Friant Ranch that will be within a mile or two of this proposed quarry site, they are currently being challenged, due to questions of impact to air quality in this area?

Comment 448-20

    i. Since the proposed Friant Ranch Retirement Community is being challenged due to their possible impacts on this areas air quality, the County of

Fresno and Cemex both need to take serious looks at the potential impacts that the deep mining quarry will have on our areas air quality. Comment 448-20 Cont.

7. If health issues do arise for people that live in the surrounding communities (Friant, Fresno & Madera) from the proposed deep mining quarry, then how does Cemex plan to compensate those people and within what time frame? Comment 448-21

8. Does Cemex have any proposed plans to monitor the air quality that might cause unwanted air pollution from the type of work they are proposing such as deep mine blasting, an asphalt plant, crushing of large rocks into smaller gravel or pebbles, bringing in reclaimed cement to break it up, and all transportation vehicles and heavy equipment that might be used to bring the material to the surface? Comment 448-22

9. Does Cemex plan to monitor the air quality at this quarry site and the surrounding communities (Friant, Fresno & Madera)?

    i. How long will Cemex have the air quality monitored for?

    ii. How many proposed monitoring locations will there be?

    iii. Where are the proposed locations for the air quality monitoring?

    iv. Will the surrounding communities (Friant, Fresno & Madera) be notified of the air quality monitoring by Cemex or a neutral party, the proposed monitoring locations and how many locations there will possibly be?

10. Has Comex conducted a study on how air quality might affect and wildlife, either aquatic or on land? Comment 448-23

    i. If the wildlife, aquatic or on land, is affected by the air quality due to the deep mining quarry, what is Cemex's proposal to help the wildlife that has been affected? And how do they plan to prevent health defects to any live beings in the future?

6.Aesthetics Comment 448-24

1. There will be significant negative aesthetic to my neighborhood, my home, my neighbor's homes and let us not forget the San Joaquin River if this quarry site is able to dig a 600-foot-deep hole! Talk about a devastating scar that will never go away.

2. Due to a significant number of houses in and around, meaning high on the hills that can already see the proposed quarry site,

3. The terrain, topography, wildlife, vegetation, and ecosystem will all be drastically changed if there is a 600-foot-deep hole in the ground.

Comment 448-24 Cont.

4. The wind in our area typically impacts come in on a Southwesterly route, so any dust, dirt, or debris will typically be pushed in the path of our neighborhood. How is Cemex going to mitigate the air pollution that could be caused by this quarry site?

Comment 448-25

5. There is no barrier of large enough trees to stop the view of a possible 600-foot-deep hole.

Comment 448-26

7.Property Values

Comment 448-27

1. How will deep quarry mining impact the surrounding communities (Friant, Fresno & Madera) property values?
2. Is Cemex willing to make the property owners of all the surrounding communities (Friant, Fresno and Madera) whole, if their property values drop below a certain percent in a reasonable Real Estate Market, due to the deep quarry mining?
3. We live in an HOA Community, our home prices are all independent of one another, but they are closely related in upkeep and value, our home prices could significantly drop in value, due to this possible deep quarry mining site.

8.Noise Pollution

Comment 448-28

1. We can hear the dumping of gravel into the large gravel trucks from at least 3 of four bedrooms (Master bedroom, our daughter's room, and our son's room) in our home.
    1. How does Cemex plan to mitigate this noise.
2. We can hear the dumping of gravel into the large gravel trucks from our back yard and our front yard.
    1. How does Cemex plan to mitigate this noise.
3. What are the Typical Sound Levels Measured in the Environment and for this type of Industry that will be blasting, transportation of the "materials" from one site or area to the next, idling of trucks before "work actually starts"?
4. How load will the blasting be at the quarry site?

Comment 448-29

5. How is Cemex going to mitigate the Noise Levels at nighttime, since the quarry site will be in operation 17 hours a day and people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Comment 448-30

6. How will Cemex mitigate the noise from blasting, heavy equipment and additional gravel trucks that is being used at the quarry site or coming to and from the quarry site?

7. Has Cemex conducted a study on how noise pollution might affect and wildlife, either aquatic or on land? Comment 448-31

8. Some people are sensitive to Vibration Noise, how will Cemex address this issue for any of the people in the surrounding communities (Friant, Fresno and Madera)? Comment 448-32

9.Recreation

Comment 448-33

1. What types of environmental impacts could this deep quarry mining have on Recreation along the San Joaquin River, Lost Lake, Millerton Lake, and let us not forget the front and back yards of all the surrounding communities (Friant, Fresno and Madera)?

2. Has anyone from Cemex talked to anyone with the San Joaquin River Parkway about Cemex wanting to blast a 600-foot-deep hole next to the river and two lakes?

3. Could possible blasting at the quarry site cause any or significant damage to Friant Dam? Comment 448-34

4. Will Cemex pay for a third-party inspection of Friant Dam, due to possible blasting?

5. How often will Friant Dam need to be inspected, due to possible blasting?

6. Will the surrounding communities (Friant, Fresno and Madera) be notified of the third-party inspection of Friant Dam?

7. How will the surrounding communities (Friant, Fresno and Madera) be notified of the third-party inspections and how often?

8. What would be considered safe or unsafe damage to Friant Dam, due to possible blasting?

9. What possible impacts could ground-water flow paths have on the San Joaquin River?

10. Could the blasting at the quarry site cause Headward erosion in the San Joaquin River?

11. If Headward erosion is a possibility for the San Joaquin River, how does Cemex plan to stop this? Comment 448-35

10.Wildlife Preservation Comment 448-36

9. What possible impacts could changes to ground-water flow paths have on the wildlife?
10. Has Cemex conducted a study on how air quality might affect and wildlife, either aquatic or on land?
    1. If the wildlife, aquatic or on land, is affected by the air quality due to the deep mining quarry, what is Cemex's proposal to help the wildlife that has been affected? And how do they plan to prevent health defects to any live beings in the future?
11. Has Cemex conducted a study on how noise pollution might affect and wildlife, either aquatic or on land?
12. He is Cemex already handling stagnation on ground water in the "reclaimed ponds"?
    1. Is stagnated ground water good for wildlife?

11. Transportation/Heavy Equipment

1. Has Cemex conducted a study on how air quality might be affected, due to additional transportation and the added heavy equipment used to source the materials. Comment 448-37
2. How will Cemex mitigate additional gravel truck noises and heavy equipment noises that they will make at the quarry site or bring to and from the quarry site? Comment 448-38
3. There will be extra wear and tear on at least a 2 mile stretch of Friant Road from all the additional hauls from the large gravel trucks and private vehicles that will enter this possible quarry site. Will Cemex be responsible for the extra upkeep of Friant Road? Comment 448-39
4. Since January 2020 there has already been at least 3-4 crashes or gravel spills (gravel and large river rocks) all over Friant Road, due to the large gravel trucks traveling from one site to the next. What is Cemex doing to make sure their drivers are taking every driving safety precaution they can to prevent future crashes or spills? Comment 448-40

12. Safety Issues and Miscellaneous (Fly Rock Travel, Flooding, Earthquakes)

Comment 448-41

1. There are a number of homes within a mile or two of the quarry site, since they are planning on blasting, what kinds of proper planning and protection is Cemex willing to put in place so NO property damage or human casualties occur to these surrounding areas, due to Flyrock?
2. Our neighborhood already has erosion issues for a few homes, if there is blasting at the quarry site, what types of impacts could the blasting have on these erosion issues? If it is found that the blasting caused additional erosion issues, how will Cemex remedy these issues.

Comment 448-42

3. If there is damage done to Friant Dam, due to the blasting, how fast is Cemex going to take to fix it? Will the surrounding communities (Friant, Fresno and Madera) be notified of any damages to the Friant Dame, due to the blasting? How fast will we be notified? How will we be notified?

Comment 448-43

4. Will Cemex conduct seismic testing or monitoring, due to possible blasting and being in such close proximity of Friant Dam? How often will Cemex conduct monitoring of the Friant Dam for any damages that might have been caused due to possible blasting?
5. Could there be any possible chance of flooding, due to possible blasting at the quarry site?

Comment 448-44

    1. If a flood is found to be caused by Cemex and their blasting, how do they plan to compensate those flood victims?

6. Will there be an impact to the Surface Air Temperature, due to the deep quarry mining?

Comment 448-45

My family and I are not against CEMEX or the work they do, we are against where they are doing and how they want to continue doing it. All work should be stopped at the Quarry Site along Friant Road until a current EIR is produced and provided to all residents and community members that can and will be affected by the mining being proposed at the site.

Comment 448-46

Could it be that the destruction and devastation done to the environment would not allow for a good report within the EIR, which in turn could completely halt all work at the Quarry Site.

I respectfully request that you strongly consider my/our concerns before any

contract extension/expansion is approved especially since there happens to be a pending EIR. Please understand, my husband and I are not against big business, nor do we want to stand in the way of progress, if progress is in the best interest of all people not just a select few. We are expecting that all state and local offices do the proper due diligence before anything is approved.

Thank you for your time and crucial consideration into the health and wellbeing of human lives, our wildlife, and our environment.

Best Regards,

Venus Warner
River View Ranch Resident
Friant, CA

From:	Eddie West
To:	Randall , David A.
Subject:	Re: Cemex Rockfield Expansion - public meeting recording?
Date:	Sunday, March 9, 2025 9:55:17 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

We appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have concerns that I urge you to address prior to moving forward with approval.

Comment 449-1

According to this March 6, 2025 article by Fresnoland - San Joaquin River Officials refuse to debate CEMEX's billion-dollar blast mine mystery - Fresno has a gravel surplus:

"According to the California Geological Survey, the Fresno metro area currently has nearly 200% more gravel than is needed for the next 50 years coming from local mines. The Kings River has roughly 2 billion tons of easily available surface gravel – enough for 500 years at Fresno's current 4 million-ton annual rate."

This alone begs the question of why this project is seen as necessary.

Additionally, as homeowners in the Copper River area we are seriously concerned about noise, air pollution and other environmental impacts that could very well reduce the **quality of life in our neighborhood**, and also depress or reduce our home's value.

Comment 449-2

We hope you will use your authority to help in all ways possible to halt this project.

Thank you for your time and consideration.

Warm regards,

Eddie and Claudia West

On Mon, Feb 24, 2025 at 8:36 PM Eddie West <eddie.p.west@gmail.com> wrote:

> Thank you Mr. Randall.
>
> Eddie West
>
> On Mon, Feb 24, 2025, 3:09 PM Randall , David A. <drandall@fresnocountyca.gov> wrote:
>
> > There is not recording available, but there is a copy of the Power Point for the meeting available on the County's web page for the Project.
> >
> > **David Randall** | **Senior Planner**
> > **Department of Public Works and Planning** |

Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4497 Direct: (559) 600-4052

Your input matters! Customer Service Survey

From: Eddie West <eddie.p.west@gmail.com>
Sent: Sunday, February 23, 2025 12:46 PM
To: Randall , David A. <drandall@fresnocountyca.gov>
Subject: Cemex Rockfield Expansion - public meeting recording?

Dear Mr. Randall,

I live not far from the proposed Cemex Rockfield Expansion.

Is there a recording of the public informational meeting of January 16th available?

Please advise and thank you.

Eddie West

March 4, 2025

Cathy Aguilera
3954 N Millbrook Ave
Fresno CA 93726

David Randall
County Senior Planner
2220 Tulare St Sixth Floor
Fresno CA 93721

RE: Cemex Rockfield Quarry Modification Project

Dear Mr. Randall,

It is my understanding that the proposal to blast a 600-foot deep pit to mine aggregate in the Fresno region is simply not necessary since we have nearly double the projected demand for the next 50 years. Those reserves are owned by a competitor of CEMEX. To destroy the area so close to the San Joaquin River by such an archaic method is an example of taking an action with extreme disregard for the ecology of the river and surrounding area, the air quality, noise and traffic congestion ALL IN THE NAME OF MONEY for Cemex and who knows who else.

Comment 450-1

Comment 450-2

Look who we are dealing with. CEMEX is totally unreliable. The company shows disregard for the environment having been fined for 81 environmental violations since 2000. Potential problems: the wall of earth separating the river and the open pit could collapse, traffic delays, fish and wildlife, people living in the area with dynamite blasts. It is unbelievable that CEMEX would not even be held accountable financially even though money would not be able to undo the consequences of a 600-foot deep open pit mine. I lived in a city with an open-pit copper mine that was a example of the devastation that CEMEX's proposal would have.

Comment(s) 450-3 450-4

Comment 450-5

Comment 450-6

Mr. Randall, please pay attention to the devastating repercussions as well as the lack of accountability financially and morally this proposal has. Thank you for your close and honest attention to this matter.

Sincerely,

Cathy Aguilera

[redacted]
3964 N MILLBROOK AVE
FRESNO CA 93726

FRESNO CA 936
6 MAR 2025 PM 1 L

RECEIVED
MAR 10 2025
FRESNO COUNTY PW & PLANNING

DAVID RANDALL
2220 TULARE ST SIXTH FLOOR
FRESNO CA 93721

93721-210699

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Cathy Aguilera
3954 N Millbrook Ave
Fresno, CA 93726

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Ms. Aguilera

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From: susan simpson
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Monday, March 10, 2025 1:34:11 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. Randall:

Comment 451-1

I am writing to express my concern and displeasure regarding DEIR No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project not only threatens the San Joaquin River, it also threatens our local and San Joaquin Valley environments in ways that will be immediate and long-term.

Comment 451-2

It is unconscionable to think that any company would be granted a 100-year permit to destroy an ecological preserve as well as an aesthetic environment.

Comment 451-3

Comment 451-4

I reviewed a significant portion of DEIR No. 7763, and in its more than one thousand pages I found it woefully lacking in important details. There are a number of issues around traffic, lighting, noise, wildlife preservation, water quality, safety, cultural resources, recreational resources, and esthetics that will be "monitored". Really? Totally unacceptable! CEMEX is a multi-national company that trades on the NYSE. Their net income for 2024 for the US alone was just shy of a trillion dollars. At minimum, CEMEX should be required to mitigate and pay for any and all damage or modification to the site, surroundings, roadways, and intersections if, by some terrible joke played on the Valley's residents, this project is approved. **A generously funded maintenance and restoration plan must be required for the project.**

Comment 451-5

I will leave the technical disqualifications of this project to those more qualified to document and comment on why this is a bad idea. However, I reviewed the Aggregate Sustainability in California Geological Survey Report of 2018. Fresno and the surrounding area currently have 182% in reserve of aggregate compared to the next 50-years' demand. That alone should be a disqualifier; **a need for the project is not documented.**

Comment 451-6

I found it disturbing, but unfortunately not surprising, that four of the five current members of the Fresno County Board of Supervisors accepted campaign funds from CEMEX (Bredefeld claims to have returned his donation as a potential conflict of interest, unconfirmed). Supervisors Masig, Mendes, and Pacheco must disqualify themselves from voting on this permit request.

Comment 451-7

What is the benefit to the San Joaquin River, the San Joaquin Valley, Fresno and Madera for this project? Why would we permit a company to destroy a rich ecological preserve, taint our environment, and create an ugly eyesore? Why would we perpetuate the impression that Fresno is the stepchild to the State of California? **We must do better for future generations**.

Thank you.

Susan Allred Simpson
2076 W. Via Frassino
Fresno, CA 93711
559.903.8002

From: m3j b
To: Randall , David A.
Subject: CEMEX Project
Date: Monday, March 10, 2025 8:49:33 PM

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Report Suspicious

Comment 452-1

To whom it May concern,
My name is Mary Barajas. I'm a resident of Fresno county and I am writing to express my opposition to the cemex expansion project. I strongly believe that it would be detrimental to the environment and to the San Joaquin River and I asked that you consider my written statement to not proceed with this project. We must prioritize thoughtful planning when it comes to our natural resources and delicate ecosystem. Thank you for your time and consideration.

Respectfully,
Mary Barajas

From: Susan Bartel
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Monday, March 10, 2025 8:24:52 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 10, 2025

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all. Comment 453-1

Impacts on Water Quality & the San Joaquin River Comment 453-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit? Comment 453-3
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites. Comment 453-4

Impacts on the San Joaquin River Parkway & Recreation Comment 453-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are Comment 453-6

not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts. The San Joaquin River should be a resource for the enjoyment of the Fresno community, not for multinational corporations to exploit and destroy.

Comment 453-6 Cont.

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 453-7

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR.

Comment 453-8

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 453-9

Threats to Wildlife

Comment 453-10

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 453-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,
Susan Bartel

9502 N Matus, Fresno, CA 93720

From: Joanne Bazarian
To: Randall , David A.; sweaver@riverparkway.org
Subject: CEMEX issue
Date: Monday, March 10, 2025 11:19:03 AM

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Report Suspicious

March 6, 2025

David Randall, Senior PlannerCounty of FresnoFresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David,

After attending the community meeting at the River Parkway Trust on March 6th and hearing all the issues related to the DEIR and to Cemex's track record and especially their extensive list of violations,
I am now even more passionate about this project NEVER getting approved. They don't have a mitigation plan in place, the county has 181% of the amount of cement needed for construction and NO one
needs to dig a 600 foot hole. Please make sure this project stops here and never gets close our the beloved river.

Comment 454-1

Comment(s) 454-2 454-3

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,
Joanne Bazarian

From: Caddie Bergren
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Monday, March 10, 2025 4:13:03 PM

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Report Suspicious

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all. I live in Madera County and recreate at the San Joaquin River frequently. While I would like to raise my family in this area, we already face so many air and water quality concerns in Madera and Fresno counties and I can't believe we are considering this project that will contaminate our surroundings. I strongly disagree with this mining project which will worsen the quality of life of ourselves and our children. Please don't be shortsighted in this decision.

Comment 455-1

CEMEX is currently encroaching on an Environmental Reserve. The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection. Additionally, this project will permanently alter the little scenic landscape we have around Fresno, and their proposed restoration efforts at the end of the project will be too little, too late.

Comment(s) 455-2 455-3 455-4

Comment 455-5

I am extremely concerned about the air and water quality issues this project will have. The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

Comment 455-6

The DEIR says that project emissions may exceed cancer risk thresholds. DEIR pg. 4.3-63. The DEIR says that because mitigation measures would reduce emissions, the DEIR did not evaluate population-wide cancer burden. DEIR at pg. 4.3-64. CEQA requires that the analysis be performed before taking into account implementation of mitigation measures. I understand this project has

Comment 455-7

Comment 455-8

proposed jobs, but at what cost? As I understand, there are various other local sites that are not on critical habitat and recreational space that can provide more than enough gravel for future needs in the Fresno area. It seems incredibly short sighted and sad that you would even consider using explosives to create a huge mining site right along our San Joaquin River. Please listen to local residents that this project needs to be reconsidered.

Thank you,

Caroline Bergren

1101 Malta St

Madera, CA

93638

From:	Kathy Bian
To:	Randall , David A.
Subject:	Public Comment regarding CEMEX expansion
Date:	Monday, March 10, 2025 9:37:40 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David Randall,

It is pertinent that this project for the expanse of mining around the San Joaquin River is not approved. This would destroy countless of the very few ecosystems that have withstood human impact on the land. The water quality would be severely threatened, impacting the health and hygiene of all inhabitants around the area. The outcome of this expansion would be, from a regulatory standpoint, another EPA SuperFund site. The San Joaquin River area is currently managing to thrive, providing community and livelihood for various flora, fauna, and all people who visit the area. I truly hope you take the time to listen to this public comment, and reject CEMEX expansion in this area.

Comment 456-1

Cheers,
Kathy Bian (she/her)

Currently residing on the unceded ancestral homeland of the Yokuts.
she/her
UCSF SOP 2025 Doctor of Pharmacy Candidate
NYU 2022 | Environmental Studies, Child & Adolescent Mental Health Studies, Chemistry

From:	Tom Biglione
To:	Randall , David A.
Cc:	sweaver@riverparkway.org
Subject:	Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Monday, March 10, 2025 5:04:49 PM

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Report Suspicious

David Randall, Senior Planner
County of Fresno
Fresno, CA

Dear David,

Comment 457-1

I am a property owner or parcel #300-320-12s on Biglione Drive one mile east of the proposed quarry hole.

One of the worst things that can happen to a living river is a breakthrough into an active or abandoned quarry hole.
This project's plans call for a 600-ft deep hole that will exist long after the 100-year projected active phase of the quarry.

Why, in this day of enlightened awareness of the importance of preserving what little we have left of our magnificent state's river flows and corridors would we want to risk any further environmental harm?

Tom

F. Thomas Biglione, CLU, ChFC , PE
Bay River Insurances Services, Inc

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From:	Janine Quisenberry
To:	Randall , David A.
Subject:	CMEX Project
Date:	Monday, March 10, 2025 9:34:16 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dan Randall ,

The River Parkway has been working very hard to restore the San Joaquin River bottom so that it can be enjoyed by people of all ages. I enjoy walking down by the river on a weekly basis. It is very peaceful and provides much needed relief from everyday stress.

Comment 458-1

The CEMEX Project would not only increase pollution to our air, that already already makes it unhealthy for all of us, but especially for those that are asthmatic or have sensitivities.

Fresno County needs to increase our green space and opportunities to spend time outdoors. Fresno County has very few parks and places for families and people of all ages to enjoy the outdoors. Spending time in outdoor spaces like the Parkway is critically important for physical and mental health.

Comment 458-2

Digging more ugly pits, noisey trucks, increase in air pollution, and a decrease of limited greenspace all for CEMEX profits. CEMEX can find another place for their building materials.

Sincerely,

Janine Blake-Quisenberry
7307 North Durant
Fresno, CA. 93711

From: Tom Boroujeni
To: Randall , David A.
Subject: Proposed CEMEX Expansion
Date: Monday, March 10, 2025 3:24:25 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall,

Comment 459-1

Cemex's proposed expansion of its mining operations near the San Joaquin River raises significant concerns about environmental degradation, legal liabilities, and economic burdens on the surrounding communities. As an industrial operation with a well-documented history of regulatory violations, Cemex's intensified mining activities will have far-reaching consequences that extend beyond Fresno County. The expansion poses threats to surface and groundwater resources, transportation infrastructure, and local economies, all while being unnecessary given the existing surplus of gravel in the region. This document examines the key risks associated with Cemex's expansion and why its approval would be a costly mistake for both the environment and the public.

Surface and Groundwater Impacts

Comment 459-2

Cemex's operations will inevitably introduce pollutants into the San Joaquin River, a shared natural resource that flows through multiple counties before reaching the Sacramento-San Joaquin Delta and ultimately the San Francisco Bay. Given the river's extensive reach—beginning in the Sierra Nevada, feeding into Millerton Lake, and then flowing through Fresno, Madera, Merced, Stanislaus, and San Joaquin Counties—any contamination originating from Cemex's site in Fresno County will not remain localized. Instead, pollutants will travel downstream, affecting water quality, ecosystems, and public health across a vast region.

Industrial mining operations like Cemex's generate multiple sources of water pollution, including:

1. Sediment runoff from excavation and blasting, which can cloud water, block sunlight, and harm aquatic life.
2. Heavy metals and chemicals from industrial machinery, which can seep into groundwater and surface water supplies.
3. Fuel, oil, and other industrial byproducts that contaminate the river through surface runoff during storms or equipment failures.

Because the San Joaquin River serves as a critical water source for agriculture, drinking water, and wildlife habitats, these pollutants pose a serious risk not just to Fresno and Madera Counties, but also to every downstream community. Farmers in Merced, Stanislaus, and San Joaquin Counties rely on river water for irrigation, and contamination could lead to crop

damage, soil degradation, and financial losses. Additionally, the Sacramento-San Joaquin Delta, which provides drinking water to millions of Californians, would be directly affected by upstream pollution.

Comment 459-2 Cont.

Beyond the ethical concerns of polluting neighboring counties, Cemex also exposes itself to significant legal liabilities. There is legal precedent for intrastate lawsuits over water pollution and usage, where counties, cities, or state agencies sue upstream polluters for damages.

Comment 459-3

Several key cases demonstrate this risk:

1. Missouri v. Illinois (1906) – Missouri sued Illinois over sewage pollution in the Mississippi River, showing early precedent for downstream entities taking legal action.
2. City of Chicago v. City of Milwaukee (1972) – Chicago sued Milwaukee for discharging pollutants into Lake Michigan, emphasizing the legal consequences of upstream pollution affecting downstream communities.
3. Los Angeles County Flood Control District v. Natural Resources Defense Council (2013) – Environmental groups successfully sued L.A. County over stormwater pollution, reinforcing the idea that local governments and industries are liable for water contamination.

Even if such lawsuits do not result in a ruling against Cemex, they can drag on for years, leading to excessive legal fees, regulatory scrutiny, and reputational damage. In some cases, companies settle out of court, costing millions in environmental mitigation measures, cleanup efforts, and penalties.

This is a preventable liability. Cemex's decision to intensify mining operations near the San Joaquin River is not just an environmental issue—it is a legal and financial risk that extends far beyond Fresno and Madera Counties. By polluting a critical, shared waterway, the company could face lawsuits from downstream counties, environmental organizations, and even the State of California.

Rather than inviting costly litigation and burdening taxpayers with the consequences of industrial pollution, Cemex should be required to implement stringent pollution controls, invest in sustainable water management practices, and take financial responsibility for potential environmental harm. Failing to do so could result in legal battles, economic damages, and irreparable harm to one of California's most vital waterways.

Furthermore, if Cemex is allowed to move forward with its expansion plans, the company's planned increased reliance on groundwater and its impact on local infrastructure have sparked serious concerns. In an article published by Stanford University's *Stanford Report*, researchers found that the San Joaquin Valley has been sinking at an average rate of nearly an inch per year between 2006 and 2022. This phenomenon, known as land subsidence, is largely attributed to excessive groundwater extraction, particularly for industrial and agricultural purposes. Given this context, Cemex's proposal to rely more heavily on groundwater rather

Comment 459-4

than surface water from the river during their expansion raises serious environmental and economic concerns.

Comment 459-4 Cont.

One of the primary reasons groundwater depletions is so concerning is that once the land sinks due to excessive water withdrawal, the underground aquifers lose their capacity to store water efficiently. Unlike surface water sources that can be replenished more predictably through seasonal rainfall or managed reservoirs, groundwater recharge is a slow process that takes decades, if not centuries, to restore aquifers to their original levels. When the ground compacts due to over-extraction, the structural integrity of the aquifers is permanently altered, reducing their ability to hold water in the future. This means that even if groundwater extraction were later reduced, the damage to the system would already be irreversible, leading to long-term water scarcity issues for the region.

Additionally, the uneven nature of land subsidence exacerbates the problem by causing differential settlement, where some areas sink at a faster rate than others. This inconsistency places immense strain on infrastructure, resulting in costly damage to roads, bridges, pipelines, and buildings. According to the same *Stanford Report* article, millions of dollars have already been spent repairing these damages, and continued over-extraction of groundwater would only worsen the situation. Cracked roadways, misaligned bridges, and damaged water conveyance systems create significant safety hazards for communities and disrupt essential services.

Considering these consequences, Cemex's increased reliance on groundwater for expansion is highly problematic. Not only does it accelerate subsidence, but it also places an additional financial burden on local governments, businesses, and residents who must pay for infrastructure repairs. Furthermore, as groundwater becomes more difficult to access due to depletion, future water costs are likely to rise, putting economic strain on industries and agricultural operations that depend on it.

Comment 459-5

Lowering groundwater levels in Fresno County will have severe consequences for local residents who rely on wells for their water supply. As aquifers are depleted, water tables drop, forcing homeowners, farmers, and businesses to drill deeper wells in search of reliable water sources. This process is not only expensive but also unsustainable in the long run. The cost of drilling new wells increases significantly with depth, often ranging from tens to hundreds of thousands of dollars per well. Many residents, especially those in rural areas who depend on private wells, may struggle to afford these high costs, leading to water insecurity and financial hardship.

Furthermore, deeper wells require more powerful pumps to extract water, which increases electricity costs for well owners. The deeper the well, the more energy is needed to lift water to the surface, placing an additional economic burden on households and agricultural operations. Small-scale farmers who rely on groundwater for irrigation may be disproportionately affected, as they must either invest in costly infrastructure upgrades or face reduced crop yields due to water shortages. This, in turn, can impact local food production and prices, creating ripple effects throughout the region.

Additionally, drilling deeper wells comes with the risk of tapping into lower-quality water sources. Deeper aquifers often contain higher levels of contaminants such as arsenic, nitrates, and other naturally occurring heavy metals, which pose serious health risks if not properly treated. Water treatment systems to remove these contaminants are expensive and not always feasible for all residents. Those who cannot afford such systems may be exposed to unsafe drinking water, exacerbating public health concerns in Fresno County.

As groundwater levels continue to decline, well failures will become more common, leaving

some residents with no immediate access to water. In past drought years, many homeowners and farmers in the Central Valley reported dry wells, forcing them to rely on costly emergency water deliveries or move to areas with more stable water supplies. If Cemex and other industries increase their reliance on groundwater, the problem will only worsen, accelerating depletion and making it even harder for residents to secure affordable and clean water. Given these challenges, local and state take action to regulate groundwater usage more effectively and encourage sustainable water management practices. Without intervention, Fresno County residents will face mounting financial, environmental, and public health crises in the years to come.

Comment 459-5 Cont.

Cemex's plan to depend more heavily on groundwater poses a severe threat to both the environment and the economy of the region. Given the challenges of replenishing aquifers and the substantial costs associated with land subsidence, a more sustainable water management approach is essential. Rather than exacerbating groundwater depletion, Cemex should be required to implement water conservation strategies, explore alternative sources, or invest in infrastructure that mitigates its impact on subsidence. Failing to do so will only contribute to the ongoing crisis, making long-term recovery increasingly difficult and expensive.

Comment 459-6

Transportation Infrastructure Impacts.

Comment 459-7

Cemex's expansion also creates a burden on the transportation infrastructure. Cemex has explicitly acknowledged in their Draft Environmental Impact Report (DEIR) that the proposed increase in mining operations will significantly heighten traffic congestion in the area surrounding the quarry. Furthermore, they have conceded that they have no intention of mitigating the effects of their transportation equipment on the local roads. This stance is entirely unacceptable.

Heavy commercial vehicles, particularly the large trucks used for hauling mined materials, impose a disproportionate burden on public infrastructure compared to personal vehicles. These trucks exert far greater stress on roads, leading to accelerated deterioration, increased maintenance costs, and a shortened lifespan for existing transportation infrastructure. Despite this, Cemex appears unwilling to take financial or logistical responsibility for the damage their fleet will inevitably cause. This means taxpayers and local government funds will ultimately bear the brunt of these expenses—a burden that should, in fairness, fall on Cemex as the direct contributor to the problem.

Beyond infrastructure degradation, Cemex's expanded operations will introduce significant safety risks. Increased truck traffic, especially from heavily loaded semi-trailers, poses substantial hazards in an area already congested with commuters, local businesses, and pedestrians. These vehicles have long stopping distances, making them particularly dangerous in unexpected traffic slowdowns or emergency situations. This risk is especially concerning given that the proposed expansion will take place adjacent to Fresno's largest public park, an area frequented by families, cyclists, and pedestrians. The presence of massive gravel-hauling trucks navigating such a densely traveled corridor raises serious concerns about public safety that Cemex has not adequately addressed.

It is both irresponsible and negligent for Fresno County to allow this project to proceed without mandating that Cemex implement measures to mitigate these negative impacts. At a minimum, Cemex should be required to contribute to road maintenance funds, implement traffic management solutions, and ensure that their operations do not create disproportionate risks for the local community. Ignoring these consequences in favor of corporate convenience would set a dangerous precedent, prioritizing private profit over public well-being. The county must hold Cemex accountable for the real-world effects of their operations and require

meaningful action to minimize harm to infrastructure, traffic flow, and public safety.

Comment 459-7 Cont.

Fresno Already has Sufficient Gravel

Comment 459-8

Cemex's push for a massive new mining expansion along the San Joaquin River is entirely unnecessary given the overwhelming surplus of gravel already available in Fresno County. The company claims that additional mining is crucial to sustain the region's construction industry, but state geological records prove otherwise.

According an article by Gregory Weaver in *Fresnoland*, Fresno County currently has nearly 200% more gravel than it needs for the next 50 years. Additionally, the Kings River alone contains 2 billion tons of surface gravel, a volume that could meet regional demand for the next 500 years without requiring any further mining expansions.

These figures make it abundantly clear: the demand for gravel has already been met many times over. There is no legitimate economic or infrastructural need for additional gravel extraction along the San Joaquin River. If local demand is already secured for centuries, what purpose does Cemex's expansion actually serve? I argue that the only entity that stands to gain from this project is Cemex itself. Unlike projects that meet clear public needs—such as infrastructure development, job creation, or economic stimulus—this expansion would have no meaningful impact on Fresno's construction industry, housing market, or workforce. The availability of gravel is not a limiting factor for development in the region, making this expansion redundant.

Rather than benefiting the public, Cemex's expansion would oversaturate the market with gravel that is not needed, creating a scenario where mining operations continue without purpose. If this project is approved, it won't make construction materials more accessible or improve infrastructure—it will only extend Cemex's corporate control over an already oversupplied resource, ensuring continued profits at the community's expense.

If Fresno were facing a severe shortage of gravel, this project might at least warrant discussion. But given the massive surplus, allowing Cemex to further exploit the region's resources would amount to needless environmental destruction. Expanding mining operations near Lost Lake Park would cause permanent damage to an already fragile ecosystem, harming air and water quality while further polluting one of the most degraded rivers in the country.

The San Joaquin River has already endured decades of environmental abuse due to mining, agriculture, and industrial pollution. Given that Fresno's construction industry does not need additional gravel, there is no rational argument for continuing to sacrifice the river's health for Cemex's bottom line.

Cemex is a Known Bad Actor

Comment 459-9

Cemex has a well-documented history of violating regulations, suggesting a persistent pattern of noncompliance that raises serious concerns about its ability or willingness to adhere to regulatory agreements in the future. According to data from violationtracker.goodjobsfirst.org, Cemex has committed 667 violations, accumulating a total of $52,384,115 in penalties. These infractions span multiple areas, including environmental regulations, workplace safety, and employment practices, demonstrating a broad and systemic disregard for legal and ethical standards.

A closer examination of these violations highlights the extent of the issue:

Comment 459-9 Cont.

- Environmental Violations: Cemex has been penalized 81 times, paying $43,564,276 in fines for environmental infractions. These violations likely include breaches of air and water quality regulations, hazardous waste management failures, and other environmentally destructive practices. The sheer scale of these penalties suggests that environmental harm is not an occasional oversight but a recurring consequence of Cemex's operations.

- Workplace Safety Violations: The company has been cited 577 times, resulting in $6,356,849 in fines. Such a high number of safety violations indicates a consistent failure to maintain proper workplace conditions, putting employees at risk. This raises further concerns about Cemex's operational priorities—if worker safety is compromised despite repeated penalties, it stands to reason that environmental and regulatory commitments may also be neglected.

- Employment-Related Violations: Cemex has faced 9 employment-related penalties, totaling $2,462,990. These infractions likely involve labor law violations such as wage theft, discrimination, or failure to comply with fair labor standards. While this category has fewer recorded violations, it adds to the overall picture of a corporation that struggles—or refuses—to operate within legal boundaries.

These statistics are not isolated incidents; rather, they indicate a consistent, long-term pattern of noncompliance across multiple regulatory domains. A company with such an extensive record of violations has demonstrated, time and again, that it prioritizes its business interests over regulatory compliance, often opting to pay fines rather than invest in meaningful reforms. This pattern should not be dismissed as a series of unfortunate mistakes but rather recognized as a systemic issue within the company's corporate culture and operational framework.

Given this track record, it is entirely reasonable to be skeptical of Cemex's assurances regarding the expansion of its Rockfield quarry, even if it promises to implement mitigation practices. Regulatory agreements rely on trust—that is, trust that the company will uphold the stipulated conditions and not engage in future violations. However, Cemex's history suggests that even when faced with financial penalties, it continues to disregard regulations rather than alter its practices meaningfully.

If Cemex is granted permission to expand the Rockfield quarry, there is little reason to believe it will adhere strictly to mitigation requirements. Past behavior is often the best predictor of future actions, and Cemex's history suggests that it may either fail to implement the required safeguards or cut corners to maximize profitability, potentially causing environmental degradation and safety hazards.

Conclusion

Comment 459-10

Cemex's proposed expansion serves no public purpose, offers no economic benefits to Fresno's residents, and directly contradicts existing geological data. With ample gravel

supplies available for centuries to come, the only party that stands to benefit from this expansion is Cemex itself—at the cost of environmental degradation, community interests, and long-term sustainability. If this project moves forward, it will not be because Fresno needs more gravel—it will be because corporate interests have been allowed to dictate land use policy at the public's expense. Instead of permitting unnecessary destruction, local authorities should reject this expansion outright and prioritize environmental conservation and responsible resource management.

Comment 459-10 Cont.

Regards,

Tom Boroujeni

References

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https://fresnoland.org/2025/03/06/cemex-blast-mine/

March 6, 2025

David Randall
Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to CEMEX Rockfield Expansion Project

Dear Mr. Randall,

I am writing to express my strong opposition to the proposed CEMEX Rockfield Expansion Project. As a resident of Fresno County for 53 years, I am deeply concerned about the potential environmental and community impacts of this project, particularly its proximity to the San Joaquin River, Fresno, and the Friant community. Comment 460-1

Environmental Concerns

The plan to excavate a 600-foot deep pit along the San Joaquin River raises significant environmental issues. This extensive excavation could disrupt local ecosystems, affect water quality, and pose risks to wildlife habitats. When mining rights were first granted in 1913, and the area in question was miles from urban areas, gravel mining was appropriate. Mining rights expired in 2013. During that 100+ years the Friant Dam was built, and the need to preserve the San Joaquin River as an oasis for residents of Fresno and Madera County arose. Lost Lake is a beautiful area for swimming, camping, and birding. There are wonderful birds all along the San Joaquin River. The Ball Ranch Nature Preserve is popular with fishers and birders. The San Joaquin River Parkway Beck Ranch Nature Preserve is situated between the existing gravel mining and the proposed "pit." Comment 460-2

Furthermore, as the crow flies this site is very close to the Austin Quarry owned by Vulcan Materials in Madera County (Hwys 41 and 145). Why do we need yet another hard rock site especially along Friant Road which is already has housing and commerce in Friant, and which in the next 100 years will be fully urbanized as Millerton New Town, Clovis, and Friant grow? Comment 460-3

Community Impact

The expansion is expected to increase truck traffic on Friant Road, which could lead to congestion, safety hazards, and diminished quality of life for existing and future residents. Additionally, the project's proximity to the San Joaquin River will affect recreational areas and public access to the river. Comment 460-4 Comment 460-5

The EIR sites traffic concerns at the intersection of Willow and Friant Road, but it does not delve enough into additional impacts which include

Comment 460-6

1. Ramp ways which will have to be built to accommodate trucks arriving and leaving the sites, which incidentally lead to rocks damaging windshields.
2. As a person who drove Friant Road nearly daily for 46 years, I can attest to the changes I saw on Friant Road as it changed from a 2 line road, to a 4 lane road. This is a major thoroughfare to recreation at Millerton Lake, Table Mountain, and into the Sierra Foothill and Mountains. Friant Road is only going to get busier, and mining will be even less compatible.

Comment 460-7

3. There is also no mention of traffic for the residents of Friant, and more critically for gravel/rock trucks driving through Friant, and turning on North Fork Road to connect to Highway 145 (Ironically going right past the Austin Quarry at Highways 145 and 41) and out to Highway 99.

Comment 460-8

4. Hard Rock mining which includes drilling and blasting beneath an alluvial deposit is likely to impact residents with sound, possible changes in their well levels, and of course the unsightliness of the site for the next **100 years**.

Comment 460-9

Regulatory and Procedural Concerns

The Draft Environmental Impact Report (EIR) for this project has been extended for public review until March 10, 2025. I urge the County to thoroughly consider all public comments and ensure that the EIR adequately addresses all potential environmental and community impacts.

Comment 460-10

Conclusion

Given the significant environmental and community concerns associated with the CEMEX Rockfield Expansion Project, I respectfully request that the County of Fresno deny approval for this project. Protecting our natural resources and ensuring the well-being of local communities for the next 100 years should remain a top priority.

Thank you for considering my concerns.

Sincerely,

Karen Bosch Cobb

Karen Bosch Cobb
645 E. Champlain Dr. #118
Fresno, CA 93730-1293
559-217-1896
Karen.boschcobb@icloud.com

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MAR 10 2025
FRESNO COUNTY PW & PLANNING

David Randall,Senior Planner
County of Fresno Department of Public Works Planning,
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

93721-212706

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Karen Bosch Cobb
645 E Champlain Dr. #118
Fresno, CA 93730

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Ms. Cobb

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From: biz
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Monday, March 10, 2025 10:44:56 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Comment 461-1

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Let me begin by sharing a personal experience relevant to the area in which CEMEX is planning the expansion project. My daughter attended the outdoor preschool program (Young Explorers Enrichment Program), offered through the San Joaquin River Parkway and Conservation Trust, before her kindergarten year, and it was a very enriching, engaging, and thoughtfully formed environment with local nature woven throughout the daily experiences. She had many wonderful experiences with the river and surrounding areas, and visited Lost Lake at least twice each season, right near where the CEMEX site is planned. Among quality developmentally appropriate early childhood activities and interactions, the children were also exposed to stewardship, responsibility and respect for nature and its inhabitants.

I cannot imagine what the quality of her experiences would have deteriorated to if she were constantly surrounded by the potential noise/air/river pollution from the deep mining for which CEMEX has plans.

The DEIR is lacking research and detailed data on water quality of the San Joaquin River, the impacts of the river parkway and recreation, the effects of potential visual, auditory, air quality and traffic pollution from the project, and the threat to wildlife in the area— we need to do whatever we can to protect these creatures and the land we all share.

Impacts on Water Quality & the San Joaquin River

Comment 461-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of

the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 461-3

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 461-4

Impacts on the San Joaquin River Parkway & Recreation

Comment 461-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 461-6

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 461-7

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is

Comment 461-8

just one example of the inadequacy of the DEIR. The docu

• **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 461-9

Threats to Wildlife

Comment 461-10

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 461-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,
Elizabeth Brewer Lichty

36622 Eddings Dr

Madera, CA 93636

From: Sirley Carballo
To: Randall , David A.
Cc: sweaver@riverparkway.org
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Monday, March 10, 2025 10:34:27 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior PlannerCounty of FresnoFresno, CA

Dear Mr. Randall,

I wanted to reach out to express my heartfelt concerns regarding the CEMEX Rockfield Expansion Project and its potential impact on the environment and surrounding communities. After reviewing the Draft Environmental Impact Report (DEIR), I believe there are several critical issues that need to be addressed before moving forward with any approvals.

Comment 462-1

According to the California Geological Survey, the Fresno metro area already has nearly 200% more gravel than needed for the next 50 years from local mines. Despite claims that the region would suffer from a lack of locally sourced gravel, CEMEX has declined to provide further clarification, raising concerns about transparency and intent. Additionally, the company has a history of pursuing controversial mining projects, including a past attempt to mine Jesse Morrow Mountain—a sacred Native American burial site—despite viable alternatives nearby.

Comment 462-2

The DEIR itself acknowledges significant risks. It states that emissions from the project may exceed cancer risk thresholds but does not evaluate the broader population-wide cancer burden, citing the presence of mitigation measures (DEIR pg. 4.3-63). Moreover, with over four dozen recorded breeding season occurrences of the Swainson's hawk within two miles of the project site, and numerous potential nesting trees within half a mile, the project could significantly impact this already vulnerable species.

Comment 462-3

Comment 462-4

Given these concerns, I urge the agency to require CEMEX to conduct additional environmental analysis, strengthen mitigation measures, and explore less harmful alternatives. Transparency and accountability in this process are essential to protecting the long-term health of the San Joaquin River watershed and the surrounding communities.

Comment 462-5

I appreciate your time and consideration of these concerns, and I look forward to your thoughts on this matter.

Best, Sirley Carballo, Fresno resident

--
Sirley Carballo
sirleycarballo@gmail.com

March 10, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 463-1

Impacts on Water Quality & the San Joaquin River

Comment 463-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 463-3

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 463-4

Impacts on the San Joaquin River Parkway & Recreation
CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

Comment 463-5

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access

- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.
-

Comment 463-5 Cont.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 463-6

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 463-7

The DEIR identifies several unavoidable negative impacts, including:

- Scenic Degradation: The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- Traffic Congestion: Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on how mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 463-8

- Air Quality: The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 463-9

Threats to Wildlife

Comment 463-10

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 463-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,
Lisa Castaneda-Perez
2631 E Jordan Ave.
Fresno, CA 93720

From:	Marie C
To:	Randall , David A.
Subject:	CEMEX Rockfield Expansion Project and the Draft Environmental Impact Report
Date:	Monday, March 10, 2025 4:23:26 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

To David Randall,

My husband and I have raised our family in Fresno County over the past 35 years. We have enjoyed canoeing on the San Joaquin River and camping at Lost Lake Park. It has been gratifying to see more areas of the river protected over the years and to see wildlife at the river including bobcat, deer and eagles. The San Joaquin River is a habitat for wildlife and an important nearby natural resource for the community to enjoy. Comment 464-1

I am opposed to the CEMEX Rockfield Expansion Project and have the following comments on the Draft Environmental Impact Report:

1) Potential impacts of blasting on wildlife. There are examples cited of habituation of wildlife to mining operations, but these examples for habituation are for surface mining, not the deep rock blasting proposed by CEMEX. The DEIR does not really analyze potential impacts of blasting on wildlife. Comment 464-2

2) Impacts on air quality and dust emissions. The DEIR indicates project emissions may exceed cancer risk thresholds. There is mention of mitigation to reduce emissions, but the DEIR did not evaluate cancer burden of the population. Analysis of project emissions impact was also not performed before taking into account implementation of mitigation efforts. Comment 464-3

3) Noise and traffic concerns. Noise along area roadways used by truck traffic exceeds the usually acceptable standard in residential areas. The threshold used in the DEIR doesn't make sense in an area where residents are already exposed to high levels of noise. Impacts to area residents are potentially significant and as well as impacts to users of the adjacent park. Mitigation measures for noise impacts should be more specifically required. There should be an analysis in the DEIR of how much each noise reduction strategy would impact noise levels. Comment 464-4

I have listed some of my deep concerns about the proposed CEMEX hard rock blasting. I am also quite concerned about granting approval for 100 years. Comment 464-5

I would ask that Fresno County at least require CEMEX to provide more analysis, further mitigation efforts, and most importantly, explore less harmful alternatives.

Thank you for your time and for your consideration.

Karen Cawthorne

From: Vicki Cheney
To: Randall , David A.
Subject: Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project
Date: Monday, March 10, 2025 7:04:09 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Thank you for the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project that I have learned about at meetings with the River Parkway Trust and with homeowners and environmentalists, and as a long-time resident of Fresno who has visited Lost Lake Park with my children and grandchildren, who became familiar with and who still enjoys visiting the fish hatchery and hopes the new salmon hatchery will soon open as well as the trail from there to Lost Lake, and who has been a cyclist since the 1980s cycling the Friant Road corridor from Woodward Park to Friant for 40 years, I have several concerns that I urge you to address prior to moving forward with approval. I am writing also on behalf of my mother and an old friend who I wish were here to write instead of me as they are much better and more informed advocates. But Selma Layne and Glenn Kottcamp, this is the best I can do. 1. Impacts on the San Joaquin River Watershed

Comment 465-1

Comment 465-2

How can drilling 600 feet deep so close to the river, not to mention access to the river for the mining operation not impact the watershed? What happens if there is a breach? There is nothing that seems to suggest a plan to avoid mishaps but only "we'll worry about it if something happens." Too late.

2. Air Quality and Dust Emissions

Comment 465-3

I have serious concerns about the air quality and exposure to toxic elements from the mining and transportation of materials. We live in an area with serious illnesses from poor air quality and anything that adds to that is a real negative. I hope there is a serious look at the toxins that will be in an area where people are living and recreating, including a very important access road for the large cycling community in the area. 3. Biological Resource Impacts

Comment 465-4

I am concerned about impacts on sensitive bird habitats and on the hopes for getting salmon back on the river. From what I read, hard rock mining can negatively impact salmon and their habitats from release of toxic heavy metals, sediments and acid mine drainage, which can disrupt spawning grounds, reduce water quality and harm fish populations. I understand as well that the mitigation to protect the Swainson's Hawk and the bald eagle are inadequate. I don't know whether there are native grinding holes in any of the locations near the mining. Once things like this are gone, I fear they won't come back. Lost Lake as I used

Comment 465-5

Comment)s) 465-6 465-7

465-8

to know it is not even accessible any more as that part of the park and area are locked to public access. I wonder how it impacts the nature trail from the south end of Lost Lake Park.

Comment 465-8 Cont.

4. Traffic and Noise Concerns

Comment 465-9

Today as I rode my recumbent trike from home to Millerton Lake, I saw minimum 25 trucks related to mining operations on Friant Road. Sometimes I saw as many as 5 or 6 at the same time, or within minutes of each other. The mine traffic has increased. I understand CEMEX has no plan to pay for road conditions or access or improvements. The sand and gravel on the shoulders increases hazards for cyclists. There is already a lot of traffic on Friant and it will only increase with more residential areas nearby. What might have worked 100 years ago doesn't work now and won't work for the next 100 years. 5. Cumulative Environmental Effects

Comment(s) 465-10 465-11

4.1.1.4 The portion of North Friant Road adjacent to both the Plant and Quarry sites is also a County-designated scenic highway (Fresno County 2024). Specifically, Fresno County has designated Friant Road from the City of Fresno to Lost Lake Road a County designated scenic roadway as it “traverse[s] land with unique or outstanding scenic quality or provide[s] access to regionally significant scenic and recreational areas.” How does this additional mining work in this area going forward? Maybe it did 100 years ago but not now.

Comment 465-12

The Sumner Hill residential development west of the San Joaquin River and within Madera County has views of the Quarry Site. Some large lot residences and private residential communities east of the project sites along North Friant Road and Bluff View Avenue have views of the Plant Site and Quarry Site. Some of these people bought property because they thought the mining was done. What a shock it was to find out the CUP was extended and extended and now this proposal.

Comment 465-13

Ball Ranch and Ledger Island are, in fact, open and improved. There has been significant improvement to the Ball Ranch area that opened up. Is that mining operation an "attractive nuisance" to young (and maybe old) recreational users in those areas? Are there buffers in place so that safe trails for hiking and biking can continue to be developed as so many of us have dreamed of for decades?

The Plant Site and Quarry Site are visible from publicly accessible areas, areas that may become publicly accessible during the lifetime of the proposed project, and from private residential communities surrounding the project sites. The continuation of mining would generate new stockpiles on the Plant Site and Quarry Site; would deepen the mining excavations on both sites to depths of approximately 85 feet bgs at the Plant Site and 600 feet bgs at the Quarry Site; and would add aggregate processing and production facilities to the Quarry Site. Each of these changes has the potential to adversely affect scenic vistas visible from potentially sensitive viewpoints. This includes homes in the area that never anticipated having this "view" from their homes. Some of the homes in this

community will be significantly impacted even with mitigation.
CEMEX admits that the 600 foot pit can never be brought back to what it was before the blasting. During Stage 2 operations, the expanded quarry pit would be a clearly visible project feature and the added ready-mix concrete plant and hot-mix asphalt plant would also be visible in the ROCKFIELD MODIFICATION PROJECT DRAFT EIR 4.1—Aesthetics and Visual Resources December | 2024 4.1-59 background. The quarry pit would remain clearly visible post-reclamation. The quarry pit's engineered and linear benches would present a significant contrast to existing and Stage 1 conditions resulting in visual quality that is discordant and promotes strong disharmony with the surrounding open space environment. Therefore, this modification represents a significant change compared to existing conditions. The benches are located in hard rock, which is not supportive of the growth of a plant canopy and would therefore not be revegetated under the proposed reclamation plan. The potential future trail easement proposed along the western boundary of the Quarry Site would also be visible but would be similar to the existing access road along that area. As with the other viewpoints assessed, once operations have ceased, the equipment removed, and the Quarry Site is revegetated/reclaimed, the overall visual quality of the reclaimed Quarry Site would slightly improve relative to the operational stages, but the hard rock benches of the quarry pit would remain clearly visible. Mitigation Measure 4.1-1 is proposed to lessen this impact to the greatest extent feasible; however, because the quarry pit would remain visible during Stage 2 operations and post-reclamation (as shown on Figure 4.1-15), the visual impacts at Location #12 are considered significant and unavoidable. Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter going forward.

Comment 465-13 Cont.

Comment 465-14

Vicki Cheney
732 E. Sample Avenue
Fresno, CA 93710
559--355-1129

ktngrandma@gmail.com

From: Michael Chernekoff
To: Randall , David A.
Date: Monday, March 10, 2025 8:35:41 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

I am strongly opposed to the cemex rock field expansion project. Its effect on traffic congestion, noise, groundwater quality, and its proximity to rapidly expanding housing will have a negative impact on the existing communities and those to come. There are several other operating locations in Fresno and nearby counties that are more remote to service the needs of industries that require there products.

Comment 466-1

Comment 466-2

Michael Chernekoff
Sent from my iPhone

Clayton Dahlen
10834 E. Clearwater Way
Clovis, CA 93619
mc_dahlen@yahoo.com
(559) 593-2367
March 3, 2025

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report

Dear Mr. Randall,

I am writing to formally express my opposition to the proposed 100-year permit for the CEMEX mining operation and to challenge the adequacy of the Draft Environmental Impact Report (EIR) prepared for this project. The EIR, as currently drafted, does not sufficiently or accurately assess the environmental, ecological, and community impacts that this long-term operation will have on the San Joaquin River and surrounding areas.

Comment 467-1

As someone with experience in [Forest Service EIRs, and familiarity with the location], I find that the EIR fails to adequately address the following concerns:

Impacts on wildlife habitat, water quality, air pollution, noise pollution, groundwater depletion, cumulative environmental impacts, or community health concerns.

Comment 467-2, 467-3, 467-4, 467-5 467-5 Cont., 467-6, 467-7 467-7 Cont., and 467-8

A project of this scale and duration requires a far more comprehensive environmental review that includes thorough scientific analysis, long-term cumulative impact assessments, and meaningful mitigation strategies. The EIR, as it stands, does not meet these standards, and I urge Fresno County to require revisions that fully account for the

Comment 467-9

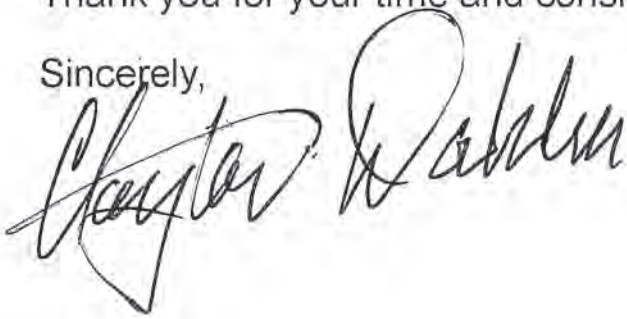
Comment
467-9 Cont.

long-term consequences of extending CEMEX's mining operations.

I request that the Planning Department reconsider this permit in light of the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.

Thank you for your time and consideration.

Sincerely,



From: Rose C-G
To: Randall , David A.; Rose C-G
Subject: Comment: CEMEX Rockfield Expansion Project
Date: Monday, March 10, 2025 11:23:26 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior Planner
County of Fresno
Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David,

I appreciate the chance to give feedback on the CEMEX Rockfield Expansion Project's DEIR. I am a resident living about six miles from the site. I'm compelled to speak up—not just for myself but for my neighbors, my community, and the future generations who will inherit this land. Comment 468-1

Growing up in this area, I remember visiting the San Joaquin River with my family. It wasn't just a body of water; it was a place where we could breathe deeply, take in the beauty of nature, and find moments of peace. My parents would tell stories about the land, about how it had always provided—clean water, shade from towering trees, and a home for countless animals. It's hard to imagine that same place choked with dust, the sounds of birds drowned out by the roar of trucks. We must protect the environment to prevent this from happening because of industrial growth.

1. **Impacts on the San Joaquin River Watershed** Comment 468-2
   The beautiful San Joaquin River is one of the last remaining natural spaces in our region. Mining expansion threatens water quality, increases erosion, and upsets the ecological balance. Once the damage is done, it will be almost impossible to reverse.

2. **Air Quality and Dust Emissions** Comment 468-3
   The Fresno area has grown over the past five years, with new homes and families moving in. That means more children playing outside, and more people relying on clean air. But air pollution doesn't just affect statistics on a report—it affects real people. It's the child who develops asthma, the elderly neighbor who

struggles to breathe on bad air days, and the parents who worry about the long-term effects on their kids. The Valley already battles some of the worst air quality in the nation. Adding more dust and emissions from this project will only make it worse.

Comment 468-3 Cont.

3. **Biological Resource Impacts**
   The area surrounding the project is home to countless species of wildlife. As Pedro Hernandez, a public lands advocate with Green Latinos, put it: “Most of the environmental projects that are happening that disseminate our natural area happen in Latino communities. So, it’s so important to protect one of the few natural areas that we have left.” For too long, Latino communities have been disproportionately affected by environmental decisions that prioritize industry over people. Our families deserve to grow up with clean water, fresh air, and green spaces—just like any other community.

Comment 468-4

4. **Traffic and Noise Concerns**
   Friant Road and other roads near the proposed expansion are already congested, especially with the increase in traffic from the nearby casino. Adding large industrial trucks to the mix will create safety hazards, noise pollution, and wear and tear on roads that aren’t designed for heavy transport at this scale. Our community’s infrastructure is struggling to keep up with growth, and this project will only add to the problem.

Comment 468-5

5. **Cumulative Environmental Effects & Long-Term Concerns**
   This project is supposed to last for 100 years. But let’s be honest—we won’t be around to see if anyone fulfills those pledges of environmental restoration. As Sharon Weaver from the San Joaquin River Parkway and Conservation Trust inquired, “If this project goes on for 100 years, not even children or grandchildren are going to see that happen, and what assurance do we have that it will actually happen?” Once this land is gone, it’s gone. We can’t afford to gamble with our community’s future.

Comment 468-6

I urge the agency to make CEMEX provide better analysis, stronger safeguards, and safer options. But more importantly, I ask you to listen to the voices of the people who live here. We are not just names on a public comment list. We are the families who breathe this air, drink this water, and walk this land.

Comment 468-7

Thank you for your time and consideration. I look forward to your response and further discussions on this critical issue.

Sincerely,
Rose Cordero-Gonzales Concerned Citizen of the San Joaquin Valley Writer, Poet, Artist, and Educator

rosecg2020@gmail.com

3-10-2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all. Comment 469-1

This area of the river, just below Millerton Lake, is beautiful and does not need this mine to be expanded. It would negatively impact the traffic in the area as more trucks come onto the road and cause significant damage with each trip. Traffic is already terrible in the areas where these trucks would be entering and departing the highway. Unless hundreds of millions and potentially billions of dollars in upgrades to the traffic infrastructure in that area are done, at the expense of this company that is going to single-handedly ruin our roads based on the numbers shared, this by itself should be enough opposition to deny the permit! Comment 469-2

While some mining in these areas is to be expected (and has taken place) with the significant amount of gravel created over thousands of years, the need to BLAST this deep into the ground is a shocking request. Shockingly, it is next to a river with many issues already caused by the effects of mining projects over the years. Comment 469-3

As someone who frequents the area for its beauty & river access, it would be devastating to see a large operation of this magnitude interrupt what many thousands of locals see as they enter into the area around Millerton. While many houses have been built near this area, they do not have nearly the negative impact a mine like this would create.

In addition, there IS NO NEED for this! We have plenty of gravel as noted in several studies. One such done by the Department of conservation located here: Comment 469-4

https://www.conservation.ca.gov/cgs/Documents/Publications/Map-Sheets/MS_052_California_Aggregates_Report_201807.pdf

In addition, the company cannot be trusted as was mentioned they unsuccessfully tried to gain another permit on the Morrow Mountain proposal. It came out after the county rejected that while they mentioned gravel as the desired extraction, other valuable materials were in fact what they were after. I suspect that the same is true in this instance. They have something and they want to extract it with absolutely zero regard for the surrounding communities. All they want to do is take from our community. It can no longer be true that we allow these extractions to take place. You must hear the voices of the citizens and stop this!

Comment 469-5

Impacts on Water Quality & the San Joaquin River

Comment 469-6

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 469-7

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 469-8

Impacts on the San Joaquin River Parkway & Recreation

Comment 469-9

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access.
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project. Including providing funding for this in perpetuity to ensure this community benefit will last for generations, just as this mine will. It will NEVER go back to the way it is now!
- The DEIR should require CEMEX to fully fund other mitigation projects in the region. Potentially conserving at a 5 to 1 acre or 10 to1 acre rate to compensate the region for devastating such a prime piece of nature and public lands.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 469-10

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 469-11

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR.

Comment 469-12

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 469-13

Threats to Wildlife

Comment 469-14

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Given the significant impacts to the river, wildlife, public safety, air quality, traffic, and the perpetual impacts to the region the County should require additional analysis, MUCH stronger mitigation measures, and GREATER financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Comment 469-15

This should be a long process with MUCH outreach to people in the region, especially people in disadvantaged communities and those who are afraid, unaware, or unable to speak up against this environmental atrocity.

Thank you for your time and consideration.

Sincerely,
Phil Daubenspeck

5653 N Nectarine Way
Fresno, CA 93722

From:	Clay Davis
To:	Randall , David A.
Subject:	RE: CEMEX Expansion - San Joaquin River Draft EIR Report
Date:	Monday, March 10, 2025 11:12:39 AM
Attachments:	image001.png image003.png image004.png image005.png image006.png

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Mr. Randall,

I've done some additional research over the weekend and new information came to light regarding CEMEX that requires me to modify my previous e-mail below. Please insert the revision below into the public record:

Mr. Randall,

I am writing to you today in regard to the proposed CEMEX mining pit expansion that is currently seeking entitlement approvals and for which the county is seeking public comments. Comment 470-1

I live at 10672 N. Lanes Rd., Fresno, CA on the San Joaquin River, approximately 7 miles downstream of the proposed mining pit. My wife and I have been at this location for 33 years. While our preference is that the County reject their entitlement application, should you decide to approve it, we have a few concerns that I would like to have the county address in their Conditions of Approval (COA's).

We have 2 wells on our property. Both wells have a fairly high ground water level (20-30 feet) and have historically never varied much over the years we've lived on the river bottom. We've also enjoyed a great water quality in both wells with no issues with contaminants . We suspect that the ground water in our area remains high due to natural ground seepage due to the influence of the river. Comment 470-2

My concerns are as follows:

- If the county approves CEMEX's entitlement application, what mitigation measures will the county impose upon CEMEX to ensure the deepening of their mining pit will not adversely impact surrounding domestic water wells? I recommend at a minimum; the following measures be a part of the COA's: Comment 470-3
  - Require a series of monitoring wells around the pit site
  - Require CEMEX to regularly test the wells, both from a water level as well as water quality
  - Require the testing be performed by a fully independent third-party testing lab (Krazan, Kleinfelder, etc)
  - Require CEMEX to publicly post the results on their website
  - Require periodic testing of private domestic wells surrounding the mining pit
  - If the ground water drops in the testing wells or the quality is adversely impacted, require

CEMEX to immediately cease operations

- Should issues arise with neighboring domestic wells due to CEMEX mining activities, how does the county plan to mitigate those issues in their COA's? Would the only recourse of the impacted property owners be to sue CEMEX? To avoid unreasonable legal costs by owners of impacted wells, I would recommend the following:
    - As part of the COA's, require CEMEX to post a bond to pay for any domestic wells adversely impacted by their activities, including the cost for drilling new wells and/or the installation of water treatment systems to remove any contaminants.

Comment 470-4

- Friant Rd. is already heavily burdened by heavy gravel trucks and the increased vehicular traffic from new housing developments. This main collector road cannot handle the additional gravel trucks that are projected in the EIR report without additional widening. If the county approves the application, mitigation measures should be required to address traffic impacts.

Comment 470-5

We understand that digging a pit that deep may release natural mineral contaminants, some cancer causing, that could adversely impact water wells.

Comment 470-6

Based upon CEMEX's history of environmental violations (81 violations since 2000 according to the Fresno Bee), I would encourage you to disapprove their entitlement application.

Comment 470-7

Thank you,

Clay Davis

Clay Davis, ARCHITECT /AIA, NCARB. LEED AP
Principal | Director of Multi-Sector
ARCHITECTS + ENGINEERS
CONNECTED
Employee Owned

From: Randall , David A. <drandall@fresnocountyca.gov>
Sent: Friday, March 7, 2025 3:43 PM
To: Clay Davis <clay.davis@teterae.com>
Subject: RE: CEMEX Expansion - San Joaquin River Draft EIR Report

Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

David Randall | Senior Planner

Department of Public Works and Planning |
Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4497 Direct: (559) 600-4052
Your input matters! Customer Service Survey

From: Clay Davis <clay.davis@teterae.com>
Sent: Thursday, March 6, 2025 9:05 AM
To: Randall , David A. <drandall@fresnocountyca.gov>
Cc: Clay Davis <clay.davis@teterae.com>
Subject: CEMEX Expansion - San Joaquin River Draft EIR Report

Mr. Randall,

I am writing to you today in regard to the proposed CEMEX mining pit expansion that is currently seeking entitlement approvals and for which the county is seeking public comments.

I live at 10672 N. Lanes Rd., Fresno, CA on the San Joaquin River, approximately 7 miles downstream of the proposed mining pit. My wife and I have been at this location for 33 years. While I am generally not opposed to CEMEX continuing their operations and deepening their mining pit, I do have a few concerns that I would like to have the county address in their Conditions of Approval (COA's).

We have 2 wells on our property. Both wells have a fairly high ground water level (20-30 feet) and have historically never varied much over the years we've lived on the river bottom. We've also enjoyed a great water quality in both wells with no issues with contaminants . We suspect that the ground water in our area remains high due to natural ground seepage due to the influence of the river.

My concerns are as follows:

- What mitigation measures will the county impose upon CEMEX to ensure the deepening of their mining pit will not adversely impact surrounding domestic water wells? I recommend the following measures be a part of the COA's:
    - Require a series of monitoring wells around the pit site
    - Require CEMEX to regularly test the wells, both from a water level as well as water quality
    - Require the testing be performed by an independent third-party testing lab (Krazan, Kleinfelder, etc)
    - Require CEMEX to publicly post the results on their website
    - Require periodic testing of private domestic wells surrounding the mining pit
    - If the ground water drops in the testing wells or the quality is adversely impacted, require CEMEX to immediately cease operations

- Should issues arise with neighboring domestic wells due to CEMEX mining activities, how does the county plan to mitigate those issues in their COA's? Would the only recourse of the impacted

property owners be to sue CEMEX? To avoid unreasonable legal costs by owners of impacted wells, I would recommend the following:

- As part of the COA's, require CEMEX to post a bond to pay for any domestic wells adversely impacted by their activities, including the cost for drilling new wells and/or the installation of water treatment systems to remove any contaminants.

As I'm in a construction related industry, I agree with the need for a steady, sustainable and cost-effective supply of sand and gravel for the construction industry. I have no concerns with the proposed drilling and blasting activities due to the distance from our home to the proposed mining pit. In general, I am supportive of CEMEX's plans, and I would encourage the Planning Commission to approve their application, provided that mitigation measures are put in place to address potential impacts to surrounding domestic water wells.

Thank you,

Clay Davis

Clay Davis, **ARCHITECT |AIA, NCARB, LEED AP**
Principal | Director of Multi-Sector
7535 N. Palm Avenue #201
Fresno, CA 93711
T 559.437.0887 I **C** 559.994.6882
www.teterae.com

Department of Public Works and Planning |
Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4497 Direct: (559) 600-4052
Your input matters! Customer Service Survey

From: Clay Davis <clay.davis@teterae.com>
Sent: Thursday, March 6, 2025 9:05 AM
To: Randall , David A. <drandall@fresnocountyca.gov>
Cc: Clay Davis <clay.davis@teterae.com>
Subject: CEMEX Expansion - San Joaquin River Draft EIR Report

Mr. Randall,

I am writing to you today in regard to the proposed CEMEX mining pit expansion that is currently seeking entitlement approvals and for which the county is seeking public comments.

I live at 10672 N. Lanes Rd., Fresno, CA on the San Joaquin River, approximately 7 miles downstream of the proposed mining pit. My wife and I have been at this location for 33 years. While I am generally not opposed to CEMEX continuing their operations and deepening their mining pit, I do have a few concerns that I would like to have the county address in their Conditions of Approval (COA's).

We have 2 wells on our property. Both wells have a fairly high ground water level (20-30 feet) and have historically never varied much over the years we've lived on the river bottom. We've also enjoyed a great water quality in both wells with no issues with contaminants . We suspect that the ground water in our area remains high due to natural ground seepage due to the influence of the river.

My concerns are as follows:

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    - Require a series of monitoring wells around the pit site
    - Require CEMEX to regularly test the wells, both from a water level as well as water quality
    - Require the testing be performed by an independent third-party testing lab (Krazan, Kleinfelder, etc)
    - Require CEMEX to publicly post the results on their website
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    - If the ground water drops in the testing wells or the quality is adversely impacted, require CEMEX to immediately cease operations

- Should issues arise with neighboring domestic wells due to CEMEX mining activities, how does the county plan to mitigate those issues in their COA's? Would the only recourse of the impacted

property owners be to sue CEMEX? To avoid unreasonable legal costs by owners of impacted wells, I would recommend the following:

- As part of the COA's, require CEMEX to post a bond to pay for any domestic wells adversely impacted by their activities, including the cost for drilling new wells and/or the installation of water treatment systems to remove any contaminants.

As I'm in a construction related industry, I agree with the need for a steady, sustainable and cost-effective supply of sand and gravel for the construction industry. I have no concerns with the proposed drilling and blasting activities due to the distance from our home to the proposed mining pit. In general, I am supportive of CEMEX's plans, and I would encourage the Planning Commission to approve their application, provided that mitigation measures are put in place to address potential impacts to surrounding domestic water wells.

Thank you,

Clay Davis

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March 10, 2025

David Randall, Senior Planner
Fresno County Public Works & Planning Department
Development Services & Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear David,

Comment 471-1

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I urge careful reconsideration of several critical concerns before moving forward.

Noise Impact from Blasting on Wildlife and Recreation

The transition from standard mining operations to blasting will have profound effects on both wildlife and community recreation. Currently, the sounds of mining are audible from adjacent properties such as Ball Ranch, Sumner Peck Ranch, and Lost Lake, all of which are open daily for public enjoyment. Introducing blasting will amplify these disturbances, potentially scaring wildlife from their natural habitats and discouraging community use of these valuable public spaces.

- Has a scheduled blasting plan been developed to minimize disruptions? While scheduling may assist community planning, it will not mitigate the displacement of wildlife.
- What could Fresno County require as a mitigation for this issue?

Impacts on the San Joaquin River Watershed

Comment 471-2

The San Joaquin River is a treasured natural resource with historical, cultural, and ecological significance. Over the years, numerous conservation efforts have sought to protect and preserve it. Allowing a mining company to conduct blasting operations near the river is a direct affront to these efforts.

- The proposed mitigation plans are insufficient compared to other mining companies, who have demonstrated a commitment to site rehabilitation.
    - How will CEMEX ensure meaningful restoration and community benefit post-mining operations - even though restoration will be delayed for 100 years.

- The risks to the river's ecosystem, including pollution, habitat destruction, and long-term degradation, far outweigh any potential economic benefits of the project. The proposed mitigation consists only of monitoring, with no actual action plan in place if the mining wall and the river were to intersect in the future.
    - What is the plan if there is major flooding, like the one in 1997?

Comment 471-2 Cont.

Hazards of a Trail Easements and Parkway Master Plan Compliance

Comment 471-3

CEMEX's claim of partnership with Parkway-focused organizations is questionable, as there is little to no evidence of their engagement in community discussions. The DEIR states that CEMEX will offer a potential trail easement along the Friant Road frontage and an additional three miles along the river near/on the quarry site.

- This contradicts the Parkway Master Plan, which requires a 300-foot buffer for trails.
    - Why does the proposed plan fail to align with established guidelines?
- Previous discussions regarding trail easements occurred under past leadership at the San Joaquin River Conservancy.
    - Has CEMEX made any effort to engage with current leadership or update agreements accordingly?

Comment 471-4

- In any case, a trail easement on an active quarry site is incredibly dangerous. An example of good management is the quarry site off of Old Friant Road. That site is NO LONGER ACTIVE and is transitioning to mitigation. The site still can be dangerous so more fencing and security has been added to keep the public safe. That is an example of "if he wanted to he would". CEMEX has not demonstrated the same level of responsibility or sense of community.

Comment 471-5

- Additionally, Friant Road is known for frequent accidents, making it dangerous for pedestrians and cyclists. The goal should be to create trails that provide safe, off-road alternatives for people rather than forcing them to navigate a hazardous roadway.
    - How does CEMEX plan to address these hazards? The DEIR should include specifics on how and when CEMEX will provide trail easements and contribute to trail construction.

Comment 471-6

Aesthetic Mitigation

Other mining sites have employed native plantings to reduce visual impact. The DEIR suggests painting exposed rock surfaces, an ineffective and environmentally questionable solution.

Comment 471-7

- Painting rocks does not constitute mitigation; it is a cosmetic attempt to disguise the irreversible and ugly damage that this project will cause.
    - CEMEX should consider proven ecological restoration techniques instead and describe them in the DEIR.

Biological Resource Mitigation – Burrowing Owl Protection

Comment 471-8

The mitigation plan for burrowing owls is vague and reactionary. The DEIR states that if an owl is found on-site within 14 days of mining, a plan will be devised in coordination with CDFW. This suggests a lack of proactive conservation planning.There is no reason to allow this destruction of burrowing owl habitats. The project should be rejected outright to protect this species and others.

Comment 471-8 Cont.

- What ACTUAL concrete steps will be taken to protect burrowing owls and other wildlife habitats before excavation begins?
- Isn't the purpose of this DEIR to outline mitigation strategies before the project starts, rather than taking a "figure it out later" approach? Fresno County should require appropriate mitigation measures that truly mitigate the environmental impacts of the project.

Transportation and Traffic Mitigation

Comment 471-9

Table 4.17-11 of the DEIR indicates that Stage Two of the project will introduce 266 additional trucks to daily traffic. Friant Road is already a high-risk corridor, with increasing fatalities and congestion.

- I think this document has underestimated the speed of development in North Fresno, traffic and safety concerns will only escalate in the next few years.
    - How will CEMEX address transportation safety and efficiency concerns, in the next 2-3 years?
- The statement, "This impact is considered significant and unavoidable because it is uncertain when the assumed improvements will be constructed," is concerning.
    - This is admitting that CEMEX trucks will have a major impact on traffic but there will only be mitigation on the county's dime?
    - Isn't the purpose of this document to outline how THEY will reduce THEIR negative impact on the community?

Comment 471-10

Conclusion

The CEMEX Rockfield Expansion Project is fundamentally flawed and should not proceed under any circumstances. It poses severe risks to wildlife, the San Joaquin River, public recreation, and transportation safety. The mitigation measures proposed are insufficient, and the long-term consequences of this project will be irreversible. I urge decision-makers to reject this project in its entirety. They have been mining for so many years, it's time to move on.

Comment 471-11

Thank you for your time and consideration. I look forward to your response.

Sincerely,
Bryna De Fede
brynadefede@gmail.com

March 5, 2025

David Randall, Senior Planner
Fresno County Public Works & Planning Department
Development Services & Capital Projects Division
2220 Tulare Street – 6th Floor
Fresno, CA 93721

Dear Mr. Randall

I am writing to you to register my "No" vote on the proposed expansion of CEMEX and their impact on the local environment.. The residential areas on and around Friant Road have grown immensely in the past 37 years since I have lived here. The traffic they generate impacts travel on Friant Road, but most concerning to me is the hard rock blasting that could impact water quality. Water has always been a concern and any endeavor that would threaten the water supply should be the concern to Fresno County Public Works & Planning Department as well.

Comment 472-1

Comment 472-2

Thank you for your time and please vote no on this proposal.

Sincerely,

Myrcille DeBenedetto

Myrcille DeBenedetto
645 E Champlain Drive #105
Fresno, California 93730

645 E Champlain Drive #105
Fresno, California 93730-1292

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MAR 10 2025
FRESNO COUNTY PW & PLANNING

David Randall, Senior Planner
Fresno County Public Works & Planning Department
Development Services & Capital Projects Division
2220 Tulare Street - 6th Floor
Fresno, CA 93721

93721-212706

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Myrcille DeBenedetto
645 E Champlain Drive #105
Fresno, CA 93730

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Ms. DeBenedetto

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From:	Michelle DeLaBarre
To:	Randall , David A.
Subject:	Cemex Rockfield Expansion
Date:	Monday, March 10, 2025 2:52:40 PM

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Report Suspicious

Comment 473-1

After reading the proposed expansion plan I believe the environmental damages to the San Joaquin river will far outweigh any economic gains. There are already approved mines for gravel extraction in our area that will provide construction needs for decades to come. Unfortunately Cemex doesn't seem to have an interest in these other mines so that is driving their expansion request. I see a conflict of interest between campaign contributions to our Board of Supervisors and this expansion request. Please don't approve this expansion. Please stand up for our local river and the health of our county's families.
Michelle DeLaBarre
Fresno County Resident

From: Celeste DeMonte
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Monday, March 10, 2025 1:39:55 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

With many of the proposed mitigation measures being inadequate or entirely lacking, there are considerable concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Comment 474-1

Impacts on Water Quality and the San Joaquin River

The DEIR must identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events, and unequivocally state who it is that will have the responsibility for cleanup and long-term damage if the pit becomes part of the river system. Since 2000, CEMEX has been cited 667 times and fined $52.4 million for environmental, safety, and employment related offenses. This does not indicate a trustworthy "partnership." Comment 474-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows without providing clear solutions, and the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites. Comment 474-3

Impacts on the San Joaquin River Parkway and Recreation

The DEIR uses out of date information when identifying recreational sites proximate to the quarry. The noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts. Comment 474-4

Some of the table sources (Table 4.16-1 Recreation Facilities Near the Project Sites) are dated to 2021. Ball Ranch and Ledger Island were not formally open to the public at that time. These properties are now operated by the San Joaquin River Parkway and Conservation Trust under a contract with the San Joaquin River Conservancy. There is more public use of the sites under current conditions that the project should analyze.

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts Comment 474-5

The DEIR identifies several unavoidable negative impacts:

• Scenic Degradation: In an inappropriate deferral of mitigation not allowed under CEQA, the project will harm scenic views with proposed mitigation occurring only after harm has occurred.

• Air Quality: Unacceptably, the DEIR underestimates the project's air quality impact by Comment 474-6

comparing emissions to current operations rather than a no-project scenario. Comment 474-6 Cont.

• Traffic Congestion: While significant traffic impacts are expected, there is no guaranteed funding or timeline for necessary road improvements. The lack of detail on how mitigation takes place is only one example of the inadequacy of the DEIR. Comment 474-7

Threats to Wildlife

Proposed mitigation measures in the DEIR do not comply with existing regulations for the protection of wildlife. Drilling, blasting, and excavation disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Inappropriately, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Comment 474-8

The biology section of the DEIR does not fulfill the CEQA requirements to fully evaluate and disclose impacts and propose mitigation measures to reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information needs to be drafted and recirculated for public review before finalizing the environmental impact report for the project. Comment 474-9

Thank you for your time and consideration.

Sincerely,

Celeste DeMonte
Fresno, California

From:	Judith Dickison
To:	Randall , David A.
Subject:	CEMEX Project
Date:	Monday, March 10, 2025 2:17:56 PM

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Report Suspicious

Sent from my iPhone
Dear Mr. Randall:

I am writing of my concerns about the CEMEX Project, as I am a resident of Woodward Lake since 2001. I am very concerned about the multi-faceted impact on our neighborhood and daily lives that would result from this project. Not only the dust, noise, and increased traffic from trucks that would be needed (I have personally observed CEMEX trucks run the red light at a high rate of speed at Champlain and Friant; with the numbers of people of all ages crossing the street to go to and from Woodward Park being endangered by these trucks). Also, the use of explosives to dig this immense hole would send tremendous amounts of dust into our homes …. And LUNGS.

Comment 475-1

Comment 475-2

Comment 475-3

Why there is a need for a 600 ft gravel pit amidst the rapidly increasing population of the Woodward Park and Friant area is beyond me…. Sounds more like they are mining for gold.

Comment 475-4

I strongly object to this proposal.

Sincerely yours,
Judith Ryskamp

From:	Mtunga, Tawanda
To:	Randall , David A.
Subject:	FW: DEIR PUBLIC COMMENT
Date:	Monday, March 10, 2025 11:44:10 AM
Attachments:	image001.png

Tawanda Mtunga | **Principal Planner**
Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4022 Direct: (559) 600-4256 Cell Phone: (559) 826-9265
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From: Allegra Dittmann <allegradittmann12@gmail.com>
Sent: Monday, March 10, 2025 11:34 AM
To: Mtunga, Tawanda <tmtunga@fresnocountyca.gov>
Subject: DEIR PUBLIC COMMENT

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Hi my name is Allegra Dittmann and I am a high schooler at Clovis North and an environmental advocate. Comment 476-1

I've lived in fresno for about 3 years and i moved from LA. i strongly oppose this project with moving forward. Due to Fresnos awful air quality, I get sick on a regular basis already. If this project went forward, so many people including myself would continue to struggle with respiratory issues because of it. I ask, how will you make sure citizens will not be breathing in the Particulate matter that will inevitably come from this project? This project is a step in the wrong direction. Comment 476-2 I and many others value the biodiversity of the river and the ecosystem surrounding it: plants, animals, the river itself would all face awful consequences as a result of this project! So many including myself have made large strides in rehabilitating the river habitat, and this would destroy the progress. Comment 476-3 Also, the river and quarry site you all have proposed is a valued area of recreation for the citizens of the san joaquin valley that would be affected greatly. I oppose this plan.

Report Suspicious

DONAGHY SALES

2363 S. Cedar Ave
Fresno, CA 93725
T 559.486.0901
F 559.486.2728
donaghysales.com

Via Email [tmtunga@fresnocountyca.gov] and United States Mail

David Randall, Senior Planner
Tawanda Mtunga, Principal Planner
Fresno County Public Works & Planning Department
Divisions of Public Works and Planning
2220 Tulare Street, 6th Floor
Fresno, CA 93721

Re: CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall and Mr. Mtunga:

Thank you for the opportunity to comment on the Draft Environmental Impact Report (DEIR) for the Cemex Rockfield Quarry Modification Project (Project). We and several other members of the Donaghy family own residences located immediately south of the property referenced in the DEIR as the "Plant Property." Comment 477-1

In the abstract, we do not oppose continued operations on the Plant Property in a manner generally consistent with its existing use. We are concerned, however, about any effort to expand or intensify operations on the Plant Property.

We did not receive notice of the Project or the DEIR, despite our proximity to the Plant Property. In fact, we did not learn about the Project until reading a February 16, 2025, Op.Ed. piece in the Fresno Bee—well after the January 16, 2025, public information meeting that was conducted solely via the Zoom platform. Comment 477-2

Given that our residences are located a short distance from the Plant Property, it is our hope and expectation that the applicant will communicate with us to discuss the Project and to allay our concerns regarding the Project's impacts on nearby residences. In light of our proximity, we hope to establish a line of communication with the applicant regarding our concerns, and hope to meet with the County and/or the applicant at the applicant's earliest convenience. Comment 477-3

We have several questions regarding the Project, as well as some specific comments. However, because we were only recently informed about the Project's existence, please note that we intend to submit additional comments at such time as this matter it presented to the Planning Commission and the Board of Supervisors, to the extent our concerns are not resolved prior to that point.

Given the proximity of our homes to the Plant Property, we are concerned about noise and vibration impacts associated with the Project. For example, daytime and evening blasting has the potential to disrupt the enjoyment of the property and endanger structures. The Project Description, however, is ambiguous because there is no indication what level of blasting—if any—will occur on the Plant Property. It is unclear whether this is because (i) there will be no further blasting at the Plant Property, (ii) there will be continued blasting, but at the same level as existing operations, or (iii) there will be additional blasting at the Site. We also attempted to review the thousands of pages of technical appendices to find an answer to this question, but the acoustic/vibration analyses do not clearly disclose whether blasting will occur on the Plant Property. Rather, the vibration analyses only concern the Quarry Property. At a minimum, we would like to better understand the true scope of the Project, which should likewise be reflected in edits to the Project Description. And if there will be no blasting at the Plant Property, this should be confirmed and affirmatively stated in the Project Description.

Comment 477-4

We are also concerned with the Project's noise impacts. Although the DEIR is thousands of pages long, the document does not answer several important questions regarding the scope of the Project and its potential to create adverse noise impacts. For example, the DEIR states the Project's Stage 1 activities include the development of a "modern asphalt plant" on the plant site to replace the "outdated" asphalt plant that was active until 2009. (See DEIR at 2-3.) It also appears Stage 1 includes an increase in intensity of a crushing plant at the Plant Site to include the "import of concrete debris to recycle into crushed miscellaneous base . . . and asphalt debris [into] asphalt product." (DEIR at 2-3.) However, we were unable to locate any information in the Project Description (or the DEIR generally) about the size, estimated throughput, or location of these facilities. To ascertain the noise impacts associated with these facilities, it is important that the DEIR include basic information regarding their scope and scale.

Comment 477-5

Additionally, Page 36 of Appendix H-1 states there will be no "appreciable change in on-site noise generation" at the Plant Property as a result of the Project. However, as explained above, because it is unclear what specific additional activities will be performed at the Plant Property—including the size, location, or throughput of the new plants—there is no way to confirm or verify how the technical consultant reached this conclusion, nor it is clear what evidence (if any) is being relied upon to support this conclusion. This is of particular concern because the additional operations at the Plant Property will exceed impact thresholds for daytime noise levels for the nearest residential receptors (P-4 and P-5), which are adjacent to our family's properties.

Further, while the technical study refers to several "Noise Mitigation Options" that "could" "be implemented," the technical report does not specifically recommend any of the Noise Mitigation Options. (See generally Appendix H-1, p. 43.) Nor is there any analysis in the technical report to show the actual reduction any of those noise reduction measures would result in. (*Id.*) The DEIR and the technical report should be modified to actually clarify what mitigation is going to be required, and quantify how those mitigation measures are expected to reduce acoustic impacts to a less than significant level.

For similar reasons, we are concerned about Mitigation Measure 4.13-2. This is merely a menu of "one or more" options without (i) analysis of the actual amount of noise reduction, (ii) a firm commitment to any specific mitigation, or (iii) a requirement in terms if ***when*** the mitigation must

be implemented. While there appears to be some requirement to monitor noise levels following the implementation of mitigation, Mitigation Measure 4.13-2 appears to allow the Project to exceed the threshold ***indefinitely*** so long as the applicant is preparing Quarterly Reports: "Quarterly reports of noise monitoring and reduction efforts shall be developed and submitted to the County ***until*** noise monitoring shows that Plant noise levels ***have been reduced to below the applicable thresholds***." Because the mitigation measure on its face suggests the mitigation may be insufficient to reduce noise levels below the proposed thresholds for a lengthy period, and in fact contemplates noise levels will remain above those thresholds for an indefinite period, noise impacts will remain potentially significant notwithstanding the proposed mitigation. Because there is plainly feasible mitigation available, specific mitigation effective to reduce the Project's impacts to a less than significant level should be ***mandated prior to*** Project implementation to ensure the Project's impacts will be less than significant.

Comment 477-5 Cont.

The technical study also appears to include some errors that may affect the analysis. Specifically, the discussion of baseline ambient noise at the Plant Property in the technical report references the Quarry Property, including "sensitive receptors to the Quarry Site," with only some discussion therein to the Plant Property. (See Appendix H, p. 24.) It is unclear whether this is a typographical error, or whether the consultant intended to assess the impact of plant operations on sensitive receptors adjacent to the Quarry Site. Either way, this should be clarified.

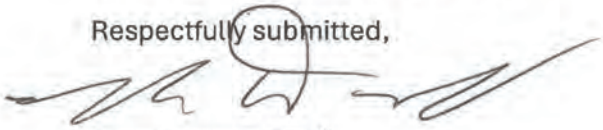
Comment 477-6

Finally, the DEIR and its Project Description are unclear on the location of the 12.9-acres owned by CDFW. While Page 2-7 of the DEIR identifies the APNs of the 12.9 acres owned by CDFW, Figure 2-1 (the Plant Site Aerial) is unclear, difficult to read, and the various APNs that may be owned by CDFW are in different locations without clearly delineated boundaries. It is difficult if not impossible to fully comment on the DEIR without being able to understand the full scope of the Project. Understanding the specific location of this portion of the Plant Property is important, especially if those portions of the Plant Property are undeveloped and/or on the periphery of the project area. Indeed, although unclear, some portion of the 43ST appears to be undeveloped land located closest to the residential uses (including our residences) to the south.

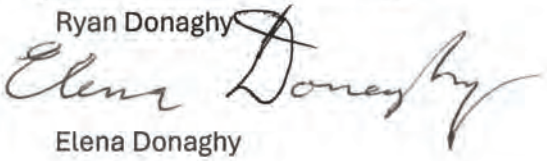
Comment 477-7

Thank you for your consideration of these comments. We look forward to discussing this matter with the County and the applicant.

Respectfully submitted,



Ryan Donaghy



Elena Donaghy

From: Cherith Drescher Merson
To: Randall , David A.
Subject: No CHEMEX Expansion
Date: Monday, March 10, 2025 8:36:28 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 478-1

Enough is enough. The birds, bees, fish and those of us on two feet and four all enjoy the life brought to us by the San Joaquin River. Few values can justify impairment of that. The devastation caused by the Friant Dam was justified to support agriculture.

The farmlands of California are unique in the world due to their climate. Agriculture is only possible in a narrow range of climate and more broadly limited by geography. Mining is limited narrowly by geography and more broadly by climate.

Comment 478-2

The effects of the extensive mining proposed by the CHEMEX expansion in the can Joaquin Riverbed cannot be justified.
CHEMEX mining can no doubt be done in other areas on the earth less vital to the survival and enjoyment of the life forms nearby.
The proposed activity is too close to both populated areas and wildlife areas. The devastating effects will be felt much too deeply and too wildly to justify imposition. The destruction starts with the extinction of species and moves up to annihilation of the spiritual and aesthetic enjoyment of the place. The operation should move somewhere else.

Cherith Drescher Merson
1022 E. Everett Avenue
Fresno CA 93720
Sent from my iPhone

From:	jsdriscoll
To:	Randall , David A.
Subject:	CEMEX mining comments
Date:	Monday, March 10, 2025 3:30:01 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hello,

Comment 479-1

I am resident of Woodward Lake just a couple of miles down from the CEMEX mine, I am extremely opposed to CEMEX expanding its mining operations to include explosive mining. The San Joaquin has experience enough and we have more gravel than we know what to do with. I understand Fresno economy is based on natural resources and farming but this a bridge too far. Oppose to this expansion now!

James Driscoll

Sent from Proton Mail Android

From: ljd06
To: Randall , David A.
Subject: CEMEX
Date: Monday, March 10, 2025 2:52:59 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am writing about my concerns regarding the planned expansion of the scope of work at the Cemex plants. I am not a scientist nor a geologist. I just have common sense. Comment 480-1

Allowing explosives so close to residential areas is unfair to those residents. It is grossly unfair to the natural residents who have called the river home long before the quarry started mining. The noise, dust, and vibrations will certainly have a negative impact. The damage done to the area will be irreparable.

There is also the issue of Cemex's long history of violations regarding safety. Toxic dust could be thrust into the air, traveling long distances. There is no solid plan in place to secure the walls of the pit. Contamination of the river is also not adequately mitigated. The DEIR does not thoroughly assess the impact of this proposed operation nor provide concrete ways to mitigate the effects, including time frames or funds for mitigation. Overall, it appears to be either a very sloppy report, or altered to meet Cemex's expectations. Comment(s) 480-2 480-3 480-4 480-5 480-6

The river is a natural resource that needs to be protected and cherished. There are plenty of gravel operations that are not endangering an irreplaceable habitat. We do not need the increase in gravel production from this site. Comment 480-7

Thank you for considering these issues.

Laura Duncan
847 E. Country View Cir.
Fresno 93730
Sent from my Galaxy

From:	Jim Durando
To:	Randall , David A.
Subject:	Cemex Rockfield DEIR comments
Date:	Monday, March 10, 2025 12:25:19 PM
Attachments:	Jim-Durando-Public Records Request.xls

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Biological DEIR omission

Comment 481-1

No invertebrates were noted in the Biological survey of the Plant or Quarry sites in the DEIR. Below find the species of mosquitoes collected at those site by the Consolidated Mosquito Abatement District over the time period of 1/1/2006 to 3/10/25. Attached find supporting evidence.
On and near the Plant site and Quarry site the following Species of mosquitoes have been trapped and identified

Anopheles sp.
Culex sp.
Culiseta sp.
Aedes sp.

These species have been known to transmit the following diseases.

Dog and Cat heartworm
West Nile Virus
St. Louis Encephalitis
Dengue

The above only includes trapping data for mosquitoes. No information was available in the DEIR for any invertebrates terrestrial or aquatic.

How Do the Cemex Rockfield Friant DEIR and CEQA Compliance Requirements Compare

Introduction: The Cemex Rockfield Friant project, as outlined in the Draft Environmental Impact Report (DEIR), has raised questions regarding its compliance with the California Environmental Quality Act (CEQA). This report analyzes how the project aligns with and fulfills CEQA requirements, identifies areas where the DEIR may fall short, and examines potential social, economic, and environmental impacts.

Comment 482-1

1. Alignment with CEQA Requirements: The DEIR seeks to address various environmental impacts as required by CEQA, including air quality, water resources, biological resources, cultural impacts, and traffic. Several mitigation measures are proposed to lessen negative outcomes, such as restoring habitats, enhancing air quality controls, and road modifications to accommodate increased traffic.

2. Areas Where the DEIR Does Not Meet CEQA Standards:

- **Vague Mitigation Measures:**
  - **Example**: The DEIR includes mitigation for air quality issues but lacks specificity on implementation timelines, emission reduction targets, or the technology to be employed. For example, the mitigation measure for dust control simply says, "implement best management practices," which is too vague and lacks enforceable action.

Comment 482-2

- **Lack of Specificity Regarding Biological Surveys:**
  - The biological surveys conducted were not comprehensive in their assessment of the full range of species in the area. For example, species that are known to inhabit the region were not adequately surveyed, which raises concerns about the accuracy of the conclusions in the DEIR.

Comment 482-3

- **Traffic Impacts:**
  - While the DEIR acknowledges potential traffic issues, it fails to identify exact road modifications and doesn't adequately model future traffic conditions during peak hours. Additionally, the DEIR fails to commit to a timeline for any necessary infrastructure upgrades.

Comment 482-4

3. Need for the Project: There is a stated need for aggregate to supply construction materials to the region. However, the DEIR does not provide clear evidence that local demand for aggregate justifies the scale of the project. Data on regional aggregate shortages or growth projections could strengthen the argument for this project's necessity.

Comment 482-5

4. Employment Impact: The DEIR mentions that the project will create jobs, but it does not provide a detailed analysis of whether these jobs will be filled locally or whether they will offer sustainable income levels for surrounding communities. The DEIR fails to address long-term job stability or potential for workforce displacement.

Comment 482-6

5. Residents' Concerns: The DEIR downplays the significance of potential negative outcomes for residents in the surrounding areas. In several places, the DEIR dismisses concerns regarding

Comment 482-7

noise, air quality, and visual impacts by stating that they are either temporary or insignificant. Residents are often referred to as “insignificant” in the broader context of regional environmental planning, which is a concerning perspective from a community relations standpoint.

Comment 482-7 Cont.

6. Biological Surveys and Their Validity: Biological surveys were conducted to assess impacts on local fauna and flora. However, the surveys appear to have been conducted with limited scope and did not account for seasonal variations or detailed habitat assessments. For example, certain key migratory species were not surveyed in critical seasonal periods, undermining the validity of the biological findings.

Comment 482-8

7. Presentation of Data: The DEIR includes an excess of tables and photos, many of which show pristine landscapes. These images do not represent the ongoing mining and industrial operations that are the subject of the report. The failure to include photos of the current environmental degradation or working project areas creates a skewed representation of the site.

Comment 482-9

8. Cemex’s Environmental Violations: Cemex’s history in California, including the cement issues in Davenport, highlights a lack of timely remediation of environmental violations. The DEIR does not adequately address the corporation's past environmental issues or the steps they’ve taken to ensure compliance with state and federal regulations.

Comment 482-10

9. Conclusion: While the Cemex Rockfield Friant DEIR acknowledges various environmental and social impacts, it fails to provide sufficient detail in key areas such as mitigation measures, biological surveys, and traffic impact analysis. The project’s need for aggregate is not fully substantiated, and the employment benefits for local communities are not clearly outlined. Additionally, there are concerns over the corporation’s past environmental record and the adequacy of the proposed mitigation.

Comment 482-11

Summary of Report:

The Cemex Rockfield Friant project’s DEIR does not fully comply with CEQA requirements. While it addresses some environmental impacts, many mitigation measures are vague, and the DEIR lacks specificity regarding key areas such as biological surveys, traffic impacts, and employment benefits. Residents' concerns are dismissed, and the project's necessity is not sufficiently substantiated. Past environmental violations by Cemex are not adequately considered. Further details and a more transparent approach are needed for full CEQA compliance

From: Terry Easley
To: Randall , David A.
Cc: guitarpoet@aol.com
Subject: CEMEX Rockfield Exp
Date: Monday, March 10, 2025 11:51:50 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Sir:

Kindly stop this project. It will be an eyesore, an environmental disaster, an air quality nightmare for the beleaguered citizens of the central San Joaquin Valley, a further blight on the hardest-working river water in our country, and a repugnant signature Mountain Most of gateway to our High Sierra.

Comment 483-1

We have been through this battle before when we defeated the dystopian plans of Cemex to blow up the sacred Mountain of the Choinumni Tribe, Jesse Morrow (Wahallich) Mountain for its aggregate, most of which would have be sent to China. We also don't need any more of our nationally treasured farmland to be paved over by unbridled developers.

Comment 483-2

Whatever meager benefits (few jobs, small revenue for other valley infrastructure projects, etc) would pale in comparison to the destructive consequences of this myopic project.

Please consider these negative repercussions that will undoubtedly impact the quality of life in our region for generations to come.

Sincerely,
Terry J. Easley
Guitarpoet@aol.com

Sent from my iPhone

From: Joan Eaton
To: Randall , David A.
Cc: Sharon Weaver
Subject: CEMEX DEIR No. 7763
Date: Monday, March 10, 2025 12:29:42 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 9, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. My family has lived in Fresno for 5 generations, starting in 1874. Each generation has cared deeply for this region and especially for the San Joaquin River, as a treasured natural resource, a recreation opportunity for families, and a source of natural beauty

Comment 484-1

After reviewing the DEIR, I am deeply concerned about how poorly it recognizes critical dangers to the San Joaquin River and the State owned San Joaquin Conservancy lands that surround the project. More specifically the mitigation proposals inadequately address the negative health effects this project will cause over the next 100 years. My mother was one of the early pediatricians at Valley Children's Hospital and my daughter (her granddaughter and also a pediatrician) have lamented how childhood health has suffered increasingly as environmental factors have deteriorated over the decades. An additional 100 year mining project will exacerbate these poor health factors, for adults as well as children.

The conservation and restoration of the San Joaquin River, its flows, its habitat, and its use by the public have been supported by taxpayers for nearly 40 years. For decades, public use of the land has been exponentially increasing, as the population increased. A project that will greatly impact the River and surrounding

land use for the next 100 years must carefully detail the mitigation measures necessary to protect hundreds of thousands of citizens visiting their public lands each year. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 484-1 Cont.

Lack of Mitigation for Rapidly Increasing Public Visitation, Visual, Traffic, and Air Quality Impacts

The DEIR identifies many unavoidable negative impacts, including:

- **Contradictions to Master Plan for the San Joaquin River Parkway:** The DEIR does not address the harm the project will cause to public access to the San Joaquin River. The Master Plan for the San Joaquin River Parkway calls for dramatic increase in the public access points to the River. The DEIR does not address increased public use of areas surrounding the project. Currently, public visitation to State owned Conservancy lands is increasing by the thousands every year. A 100 year project in the middle of one of the State's fastest growing regions needs to consider that visitors to the River Parkway will likely be in excess of 1 million people per year in the near future.

Comment 484-2

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.

Comment 484-3

- **Traffic Congestion:** Significant traffic impacts are expected, but there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR.

Comment 484-4

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining? In the region with some of the nation's highest rates of child asthma, it is imperative that CEMEX's current operations be seen as a contributor to current health outcomes. The public has a right to see the project's emissions as compared to a no-project scenario.

Comment 484-5

Impacts on Water Quality & the San Joaquin River

Comment 484-6

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit? Comment 484-7
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?
- The San Joaquin River Conservancy has spent millions of dollars fixing breached quarry ponds downstream from the project. More public funds have been spent on the restoration of habitat and water flow by the San Joaquin Salmon Restoration project. The DEIR should identify impacts to these projects. Comment 484-8

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites. Comment 484-9

Impacts on the San Joaquin River Parkway & Recreation

Comment 484-10

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Comment 484-11

Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts. If this project is allowed to go forward without adequate mitigation measures, it will cause excelerating deterioratioin of air quality, diminishing recreation opportunities for the region's citizens, and the end result for our region will be an unsightly and dangerous pit.

Comment 484-11 Cont.

Threats to Wildlife

Comment 484-12

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 484-13

Given the significant impacts to the river, wildlife, public safety, public health, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,

Joan E. Eaton

1660 W. Alluvial Avenue

Fresno, CA 93711

From:	DAVID ERICKSON
To:	Randall , David A.
Subject:	Opposition to Cemex DEIR
Date:	Monday, March 10, 2025 8:29:32 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am writing to express my opposition to the DEIR submitted for the CEMEX deep pit mining project along the San Joaquin River. As a resident of northeast Fresno, I do not believe the DEIR accurately reflects the impact this project will have on the traffic, pollution and noise in my neighborhood and the surrounding neighborhoods. I also feel that the negative impact on one of the Central Valley's few (and most important) natural resources will be irreparable, and is unjustified considering the already satisfactory availability of aggregate products needed for the Central Valley for foreseeable future. For the current and future citizens of Fresno County, I strongly believe this DEIR should be rejected.

Comment 485-1

Comment 485-2

Comment 485-3

Regards,

David W. Erickson
10055 N. Boyd Ave.
Fresno, CA 93730

March 5, 2025

Fresno County Public Works and Planning Dept.
David Randall - Senior Planner
2220 Tulare Street - 6th Floor
Fresno, California 93721

Re: CEMEX Rockfield Expansion
EIR 7763
Application 3666, 3667

Please let this letter serve as a negative vote for extending/expanding the CEMEX contract for work near the San Joaquin RIver. Comment 486-1

The plan seems: excessive for the industry already in the area; dangerous considering the proximity to town, the river and community wildlife areas; and just downright unpleasant.

The Draft Environmental Impact Report does not have plans or procedures in place to account for emergency situations due to the inevitable collapse of the mine and the damage to the quality of the water beyond their employees monitoring the situation. Comment(s) 486-2 486-3

My family and I enjoy recreation in the Millerton area, the San Joaquin River, Lost Lake Park, Ledger Island, Ball Ranch, Tesoro Viejo, Sycamore Island to name a few. Friant Road is a frequent connecting roadway for us. We hope this review process by the county is met with a formal disapproval of the CEMEX proposals. Comment 486-4

Please forward this information to the qualified personnel who are responsible for rejecting the proposals regarding the continued and expanded work by the CEMEX company and its mining operations.

Thank you.

Kirsten Field
10173 North Price Avenue
Fresno, California 93730

Kirsten Field
10173 N. Price Ave.
Fresno, CA 93730

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MAR 10 2025
FRESNO COUNTY PW & PLANNING

Fresno County Public Works
and Planning Department
David Randall - Senior Planner
2220 Tulare Street - 6th Floor
Fresno, CA 93721

93721-212706

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Kirsten Field
10173 N Price Ave
Fresno, CA 93730

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Ms. Field

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From: Carolyn Flores
To: Randall , David A.
Cc: sweaver@riverparkway.org
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Monday, March 10, 2025 8:08:03 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 10th, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Mr. Randall,

Comment 487-1

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project.

As a long time resident of Fresno, who enjoys using the richness of our outdoor spaces we call home. I'm writing to you to express my concern for the ability our children will have to enjoy this natural resource. My children and I often use the trails by the river. My children have participated in River Camp learning more about this space and how to protect it. This project is in direct opposition to making our waterways accessible to all. How are we to create a thriving Fresno with our outdoor spaces being threatened in this manner? Air-quality, and local water are always on the top of everyone's minds. I want Fresno to be a destination and place to live of choice. That comes with keeping out outdoor spaces free of the harmful effects we know about. We know that blasting into the ground right by the river.

A quote from my 10 year old son, "It would make me really sad to not see animals happy by the river. We need them. Why would people be okay with messing with their home?"

A quote from my 7 year old daughter, "Why would people mess with the San Joaquin River? It makes me mad that the animals would be left without a home that is safe."

These are our future residences. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation

at all. There is no amount of mitigation that would support what they are doing to our natural resources since there are major parts of our community that depend on the river.

Comment 487-1 Cont.

Impacts on Water Quality & the San Joaquin River

Comment 487-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?

Comment 487-3

- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 487-4

Impacts on the San Joaquin River Parkway & Recreation

Comment 487-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close

Comment 487-6

proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 487-6 Cont.

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 487-7

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.

- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 487-8

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 487-9

Threats to Wildlife

Comment 487-10

The DEIR fails to adequately analyze the impact on species like Swainson’s hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Comment
487-11

Conclusion

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,
Carolyn Flores

1125 E. Franklin Ave Fresno, CA 93701

From: Linda Foster
To: Randall , David A.
Subject: CEMEX Expansion, San Joaquin River
Date: Monday, March 10, 2025 10:41:07 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,
I am a 30-year resident of Fresno. For half of those years, I have been involved with the San Joaquin River and how people and wildlife interact with it and around it. Comment 488-1

People love The River. They love the open spaces around the river where they can enjoy peace and quiet, relax, and investigate the natural world.

They enjoy watching the birds and other critters that live out there. It is peaceful, quiet, calming, and soothing.

To destroy all that peace and quiet and natural beauty with continuous blasting, dust, dirt, caravans of huge earth movers, huge trucks on Friant Road, again, is a desecration of this special place. Comment 488-2

The people of Fresno and Clovis and other surrounding areas need, want, and deserve their little slice of nature to be as natural and wild and peaceful as humanly possible. Comment 488-3

This blasting of huge, 600 plus feet deep, holes near the San Joaquin River is plain old abusive to the River and to all the birds and critters who live in the area, raise their young there, and depend on it for survival. And abusive to the little kids who love it, and all the big adult people who find peace and comfort in The River and the surrounding countryside.

This is a reckless idea, an insult to all living things that depend on The River and the surrounding area. Whether, for their survival, or for their connection to nature.

Please reconsider this project. It is the absolutely wrong direction to move in for The River and the surrounding area.

Sincerely,

Linda Foster
113 W. Palo Alto Ave
Fresno, CA 93704-1310
559-438-4235

From: Laurie
To: Randall , David A.
Subject: CEMEC
Date: Monday, March 10, 2025 8:18:12 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior PlannerCounty of FresnoFresno, CA
Subject: Comments on CEMEX Rockfield Expansion Project DEIR Dear David,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. 1. Impacts on the San Joaquin River Watershed - this is a local gem that has been under attack for years! Take a look at the river parkway in Sacramento to understand the benefit to a community - economically and environmentally. 2. Air Quality and Dust Emission - Fresno is a basin, that already has challenges with pollution, it doesn't need more sources. 3. Biological Resource Impacts - toxins need to be reduced, not increased. Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter. Sincerely,Laurie Frye

Comment
489-1

Comment
489-2

Comment (s)
489-3
489-4

From:	Carlos Garcia
To:	Randall , David A.
Subject:	Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Monday, March 10, 2025 9:31:36 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Please consider the following comments:

- The 2012 national standard for annual PM2.5 of 12.0 µg/m listed in the DEIR is outdated. The EPA revised the national air quality standards in February 2024 from 12.0 µg/m to 9.0 µg/m. The San Joaquin Valley has been designated as nonattainment for the 2024 PM2.5 standard. The revised PM2.5 standard will be much harder for the San Joaquin Valley to meet, which will further impact the health and quality of life for valley residents. Meeting the new standard requires more stringent emission standards for new or modified sources, especially the proposed CEMEX project due to its proximity to residents. Additionally, the valley is designated as nonattainment for the 1997 PM2.5 standard, nonattainment for the 2006 PM2.5 standard, and nonattainment for the 2012 PM2.5 standard. Comment 490-1

- The criteria air pollutant amounts are summarily listed in table format throughout the document. However, the descriptions and calculations of the individual air emission points could not be found. Without the documentation for these, one cannot review or comment on the validity of air emissions referenced in the DEIR's tables. Comment 490-2

- The portable plant would process come-back concrete, imported concrete, and imported asphalt debris. What amounts for each, including maximum capacities, are to be processed, and how often would this process take place? Is this process included in VMT? As described in the DEIR, it appears that the portable equipment is part of regular operations and would be a part of their stationary source. Comment 490-3

- The general 20% opacity limits in SJVAPCD Regulation VIII are very high. CEMEX needs to commit to limiting opacity/particulate matter to below 5% opacity. Comment 490-4

- All fuel combustion equipment, including diesel use, should be electrified. CEMEX needs to reduce the toxic air emission in any manner. Instead of a VERA agreement, CEMEX should be required to electrify all combustion equipment, including motors, heaters, and vehicles. It may not be cheap to electrify, but neither is our health. Comment 490-5

- Since the valley has failed to meet the 1997, 2006, 2012 and now the 2024 PM2.5 standards, all options to not only curtail, but to reduce the amount of pollution in the valley is paramount for the health of Fresno County residents. Comment 490-6

Therefore, I am against the proposed CEMEX Rockfield Expansion Project. Comment 490-7

Respectfully submitted,

Carlos Garcia

From:	Victoria Garcia
To:	Randall , David A.
Subject:	Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Monday, March 10, 2025 4:59:36 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Hello,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. Comment 491-1

1. Tribal consultation: I am a member of the Native community, and my ancestors have used the San Joaquin River since time immemorial. I do not believe that all proper consultation was completed, as the Dumna tribe was never reached out to finalize steps moving forward. Furthermore there are tribes, such as North Fork Rancheria, and Big Sandy Rancheria (Mono) located further up the stream whose cultural items may have traveled through to this site. I believe that these tribes should have the chance to have insight and consultation. Comment 491-2

2. Environmental impact: Looking through this DEIR I have a lot of questions that simply were not answered. Species outside of the mining site WILL be impacted and should be considered. Especially with this 100 year request- the damage will be irreparable Comment 491-3

3. Expansion size: The size of this site should be reconsidered, as the depth will certainly impact the area around and ultimately all of Fresno in some way or another. CEMEX does not have a good track record in owning up to the damage they cause. Comment 491-4

Please hear out our communities, and at the very least extend the public comment period so that we may hear back about these concerns. The San Joaquin River is one of our most important waterways here, and without its protection, all life around it is threatened. We have more than enough aggregate, but we do not have more than enough of fresh water and land, and the animals they keep in cycle with our Mother Earth. Comment 491-5

Thank you,

- V Garcia

From: sbuddlegeer@comcast.net
To: Randall , David A.
Subject: Re: CEMEX Rockfield Expansion Project DEIR - comments
Date: Monday, March 10, 2025 3:33:07 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior Planner, County of Fresno

David,

It seems excessive to give a permit to last 100 years to anyone. If we base the decision on our past experience with CEMEX with our plans for the future, it might be wise to deny the permit.

Comment(s) 492-1 492-2

CEMEX has previously violated environmental laws in our state to such an extent that as part of the settlement they were required to sell 400 acres of coastal property to "a non-profit or governmental entity or consortium that commits to hold and manage the property primarily for conservation purposes, with the only other allowable uses being for low-impact, passive recreation purposes or activities, public access, public education, removal activities, activities to restore native habitat, and activities consistent with existing easements" per the California State Lands Commission Press release August 17, 2017 (City of Marina, CA)

According to the Violation Tracker Global, CEMEX has accrued $36,322,381 in penalties since 2010 in the United States, total number of records involved: 474. (For the period between 2000 and 2010, $16,061,734 in penalties, with 193 records) Seems good reason to deny them this permit.

CEMEX is a member of the Global Cement & Concrete Association, and as such has committed to net zero Carbon emissions by 2050. There is a big "but" though; GCCA has a seven point "roadmap" to carbon neutrality, with one of the points being public policy and its encouraging the use of low carbon products by changes in construction regulations & policies and in government purchases. As CEMEX is a business, their first priority is profit, which would be affected by more restrictive policies & requirements (which their lobbyists can discourage). As they are only planning for the next 100 years, they are not looking for sustainability, this is a fixed term and when its over, they only want to return a small portion of the property to its "original" condition, which is not original, but the condition somewhat based on where it is after the first 100 years of mining, and nowhere near the elevation it is now at. (Seriously, mining down 600 feet

Comment 492-3

and then only filling back a fraction of that? How long is the thin wall between their mining area and the river supposed to last? Rivers constantly erode their banks and with climate change, it will be difficult to predict what will happen.)

Comment 492-3 Cont.

The people you are negotiating with will not be the people dealing with the property in 100 years; the company has already said they have no money for additional lanes to deal with the increased traffic by their vehicles. Why then would we trust them to have the money to repair any damages to the property? At the very least, they should be required to have funds set aside as the damage is done to ensure that repair can be made when the permit expires, the company pulls out, goes bankrupt, or whatever else happens.

Comment 492-4

Some damage may not be able to be undone, such as if the wall breaks or there are cracks and the river becomes polluted, animals die &/or become changed genetically. The noise due to the blasting may cause some of the neighbors to be mentally & physically stressed and make living there untenable. The increased traffic at the intersection of Copper & Friant will be especially dangerous considering a high school is at one corner. Some kids ride their bikes to school; my son was hit leaving City College next to the high school; traffic was a lot more limited then, increased congestion will not make it any safer.

Comment(s) 492-5 492-6 492-7

CEMEX will still make their money if concrete and associated materials become scarce (supply vs demand); they don't need a 600' deep pit for recycling plants; concrete is being reconfigured and now can contain slag &/or other materials which may actually make it stronger and more environmentally safe. AI is beginning to make changes in how we see and solve our problems. It might be best to kick the can (or the decision on the permit) down the road again. If nothing else, CEMEX needs to provide a realistic amount of responsibility towards their request rather than just lowballing us with denials of money and impact which they know we will reject, implying that they are making concessions when they are not. There is a cost of doing business, but it should be the responsibility of CEMEX, and not fall upon us and our environment.

Comment 492-8

Sincerely,

Sherri Geer

From: Kimberly Gibson
To: Randall , David A.; sweaver@riverparkway.org
Subject: CEMEX DEIR No. 7763
Date: Monday, March 10, 2025 2:27:34 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 10, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my deep concerns regarding the Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. My connection to the San Joaquin River is both personal and professional. During the summer of 2010, I worked as a naturalist at the San Joaquin River Parkway and Conservation Trust's River Camp at Owl Hollow (about a mile from the site of this proposed Project), where I helped young people develop an appreciation for the river's ecology, biodiversity, and role in sustaining local communities. That experience shaped my path as a scientist, leading me to become a docent at Stanford's Jasper Ridge Biological Reserve and later pursue a PhD in Plant Science at the University of California, Davis. Today, as a researcher at the University of California, Merced, my work focuses on sustainability and economic inclusion. I know from my research and personal experience that the San Joaquin River is one of the Central Valley's most important natural resources, yet this project threatens its air quality, water quality, wildlife, and public access. The DEIR fails to fully account for these risks, and many of its proposed mitigation measures are inadequate or absent.

Comment 493-1

The San Joaquin River has been the focus of decades of taxpayer-supported restoration efforts. As a result of this investment, public engagement with the river has grown exponentially. This project risks undoing that progress.

Comment 493-2

- The excavation depth and proximity to the river raise serious concerns about groundwater depletion. The DEIR acknowledges potential groundwater depletion and contamination risks but fails to provide a sufficient mitigation plan. Additionally, climate change will likely increase flooding events over the lifespan of this project. How have considerations of our changing climate been incorporated into your consideration? Has the County required a hydrological study that evaluates long-term impacts on groundwater and river flow under projected climate change scenarios for the lifetime of the project? What legally binding commitments will CEMEX make to prevent mining-related pollutants from entering the river?

Comment 493-3

Comment 493-4

- Millions of dollars have been spent restoring breached quarry ponds downstream from this project. How will this project ensure it does not create similar long-term damage? How will the county ensure that the cost of future restoration needs falls on the company rather than on taxpayers? What financial assurances or bonds will CEMEX provide to fund restoration in case of environmental damage, similar to the San Joaquin River Conservancy's past restoration efforts?

Comment 493-5

The project site is home to sensitive species, including Swainson's hawk, Tricolored blackbird, and Western red bat, yet the DEIR's biological assessment is inadequate. The proposed mitigation measures are vague and fail to comply with existing regulations for species protection.

Comment 493-6

- Blasting, excavation, and increased noise levels could disrupt wildlife nesting and migration patterns. The DEIR does not adequately assess blasting and excavation impacts on species. Has a comprehensive wildlife impact study been conducted? Will the County require independent, third-party ecological monitoring throughout the project's lifespan to assess ongoing impacts on wildlife?

Comment 493-7

- The DEIR uses outdated Alaska-based standards to assess fish protection rather than California-specific guidelines. Why hasn't the County required a site-specific assessment for the San Joaquin River's Chinook salmon population?

Comment 493-8

- What legally binding measures will be in place to ensure CEMEX restores the site if operations extend beyond the proposed timeline or the company ceases operations early?

Comment 493-9

As a Fresno-born, life-long Valley resident who has personally suffered from asthma, I am particularly alarmed by the air pollution this project will generate. The Central Valley already suffers from some of the worst air pollution in the country, and the DEIR acknowledges that project emissions may exceed cancer risk thresholds (DEIR pg. 4.3-63) yet dismisses the need to evaluate population-wide cancer burden (DEIR pg. 4.3-64). This is unacceptable.

Comment 493-10

- The DEIR does not evaluate project emissions against a no-project scenario. Will the County require a reassessment of emissions using baseline air quality conditions rather than current operations?

Comment 493-11

- What independent air quality monitoring and enforcement mechanisms will be put in place to protect public health? What legally binding commitments will CEMEX make to ensure air quality impacts do not exceed the expected unacceptably high levels?

Comment 493-12

- Given the region's already high asthma rates and respiratory disease rates, what additional mitigation measures will be required to minimize dust and diesel emissions?

Comment 493-13

I urge the County to require additional studies, stronger mitigation measures, and legally enforceable commitments from CEMEX. The public has a right to see a full assessment of the project's long-term impacts before any decision is made.

Comment 493-14

Thank you for your time and consideration.

Sincerely,
Kimberly Gibson, PhD
Postdoctoral Researcher at UC Merced
1660 W. Alluvial Avenue
Fresno, CA. 93711

Gary Gilmore
7351 N Hayston Ave.
Fresno, CA 93720
2/24/25

David Randall, Senior Planner
Fresno County Public Works & Planning Department
Development Services & Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

Subject: Public Comment on the CEMEX Rockfield Quarry Draft Environmental Impact Report (SCH No. 2020060123)

Dear Mr. Randall,

I am writing to express my concerns regarding the Draft Environmental Impact Report (EIR) for the CEMEX Rockfield Quarry Proposed Expansion. As a Fresno County resident for 50 years and a professional with four decades of experience in Engineering and Estimating for PG&E, I have a strong understanding of large-scale infrastructure projects and their potential environmental impacts. I also suffer from asthma, and I am deeply concerned about the air quality implications of this expansion.

Comment 494-1

Air Quality & Health Concerns

The EIR (Section 4.3, Air Quality) acknowledges that the project will generate particulate emissions, but it does not adequately account for the long-term, cumulative effects on public health. Given that the San Joaquin Valley already experiences some of the worst air pollution in the country, the lack of a more detailed long-term impact assessment is troubling.

- Cumulative Exposure: The EIR discusses dust control measures, but it does not fully evaluate how the expansion will contribute to worsening regional air quality over time.

- Health Risks: The valley's high asthma rates make it imperative that all new industrial activity be assessed with the strictest air quality standards in mind. The report's reliance on standard mitigation measures does not go far enough in ensuring protection for nearby residents.

Water Quality & Proximity to the San Joaquin River

Comment 494-2

The EIR (Section 4.9, Hydrology and Water Quality) states that the project will not significantly impact water resources, yet it does not fully assess risks related to sediment runoff, groundwater depletion, or potential contamination of the San Joaquin River.

- Runoff & Sediment Transport: While the report notes that erosion control measures will be implemented, it does not thoroughly analyze how increased runoff could affect water quality downstream.

- Groundwater Impact: Expanded operations could contribute to long-term declines in the water table, which may have consequences for both agricultural users and natural habitats. A more detailed hydrological study is needed to evaluate these risks.

Comment 494-3

Wildlife & Habitat Disruption

The EIR (Section 4.4, Biological Resources) focuses primarily on nesting birds but does not sufficiently address potential impacts on migratory species or broader habitat disruptions caused by dust, noise, and long-term land alteration.

Comment 494-4

Given these gaps in the environmental review, I strongly urge Fresno County to require a more rigorous and comprehensive EIR before approving this expansion. A more detailed analysis is necessary to fully understand and mitigate the potential long-term impacts on air quality, water resources, and local wildlife.

Comment 494-5

Thank you for your time and consideration.

Sincerely,

Gary Gilmore

Gary Gilmore

Fresno County Resident (50 years)

Engineering & Estimating Professional (40 years, PG&E)

7351 N Hayston Ave
Fresno CA. 93720

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FRESNO COUNTY PW & PLANNING

Mr David Randall
Fresno County Public Works & Planning Dept
Development Services & Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

93721-212706

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Nancy and Gary Gilmore
7351 N Hayston Ave.
Fresno, CA 93720

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Mr. and Mrs. Gilmore

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

March 10, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all. **To be clear, I am opposed to such a project.**

Comment 495-1

Impacts on Water Quality & the San Joaquin River

Comment 495-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 495-3

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 495-4

Impacts on the San Joaquin River Parkway & Recreation

Comment 495-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

Comment 495-6

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 495-7

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 495-8

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 495-9

Threats to Wildlife

Comment 495-10

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 495-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,
Carol Goiburn

4533 N Maple Ave

Fresno, CA 93726

P.S. It seems to me that you've not watched Jurassic Park or recall your ancient Greek mythology to see that you are about to release the Kraken. Nothing and no one could stop that monster except one thing: Medusa's head. Have you that? I think not and to seemingly disregard the quality of life for an entire city in favor of one company so it can make billions is not the mark of stellar leadership and stewardship, yet here you are, the county, ill-prepared for the potential catastrophes in the making should you renew Cemex for

another hundred years. For all our sakes as well as the flora, fauna, air and river, do not release the Kraken! Your ‘electric fences’ will not keep the T-Rex contained!!

March 10, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project DEIR

Dear Mr. Randall,

Comment 496-1

I appreciate the opportunity to submit my comments on the Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, wildlife, local air and water quality, public recreation, and public safety. The DEIR's proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

There is No Need for Project

Comment 496-2

Before even addressing the adequacy of the DEIR, the question is what is the need for the project? Fresno and the surrounding areas have plenty of aggregate gravel, sand and crushed stone. It is estimated that the area will require 305 million tons of aggregate for the next 50 years' worth of construction. There are currently 556 million tons of permitted aggregate reserves – nearly double the projected demand. (https://www.conservation.ca.gov/cgs/Documents/Publications/MapSheets/MS_052_California_Aggregates_Report_201807.pdf.)

There is no compelling evidence of a need to mine aggregate from along the San Joaquin River particularly using much more destructive mining methods than those used since these 1920s. As the Aggregate Sustainability in California Report shows, there is plenty of aggregate available from other sources for many years to come.

There is no explanation why CEMEX needs a 100-year extension to mine aggregate along the San Joaquin River that is not even needed except to make a profit for CEMEX.

Impact on Wildlife

Comment 496-3

The DEIR fails to adequately analyze impacts of blasting on wildlife. The examples in the DEIR of habituation of wildlife to mining operations are for surface mining and not the proposed deep rock mining proposed by CEMEX.

Fresno is part of the Pacific Flyway, a major bird migration route. According to *Birdcast*, 134,400 birds crossed Fresno County on March 9 to March 10, 2025. (https://dashboard.birdcast.info/region/US-CA-019.)

The DEIR does not adequately analyze the impact on birds such as the Tri-colored blackbird, the Swainson's hawk, and the Western Burrowing Owl. It should be noted that the Western Burrowing Owl is currently under consideration to be listed as protected by the California Endangered Species Act with an estimated 1,400 in the Central Valley. (https://www.facebook.com/CaliforniaDFW/posts/the-western-burrowing-owl-athene-cunicularia-hypugaea-a-species-currently-under-/883164983992113/.)

There are also more than four dozen breeding season occurrence records of the Swainson's hawk within two miles of the project (eBird 2025) and numerous potential nesting trees within .5 miles of the project.

The DEIR fails to identify or evaluate the disruptive impacts of drilling, blasting and excavation on the migrating and native birds' habitats, nesting and migration patterns including the Swainson's hawk and California Burrowing Owl. To meet California Department of Fish and Wildlife recommendations for mitigation and protection of the Swainson hawk, protocol surveys would need to be conducted within a .5-mile radius around all project activities. If active nesting is identified within a .5 mile radius, consultation with the CDFW would be required. The DEIR also failed to consider the guidelines regarding the California Burrowing Owl and other bird species the CDFW has published. The proposed mitigation measures fail to comply with existing regulations for wildlife protection.

Comment 496-4

The DEIR also uses Alaska-based standards to evaluate fish protection rather than California-specific guidelines. The Alaska-based standards are not appropriate for the protection of the spring run Chinook salmon in the San Joaquin River.

Comment 496-5

The DEIR failed to follow the industry standard for EIR-level assessments of special-status species, which is a nine-quadrangle search radius. Here, only four quadrangles were searched for the DEIR. Therefore, some special-status species that could occur on or near the project site may not have been considered.

The Biology section of the DEIR fails to comply with CEQA requirements to fully identify, disclose and fully evaluate impacts on wildlife, and propose mitigation measures to reduce the impacts. Comment 496-6

Impact on Air Quality Comment 496-7

The DEIR states that the project's emissions may exceed cancer risk thresholds. It also states that because the mitigation measures would reduce emissions, the DEIR does not evaluate the population-wide cancer. This fails to comply with CEQA, which requires that the analysis be performed before consideration of mitigation measures.

The DEIR also underestimates the project's impact by comparing emissions to current operations rather than under a no-project scenario. This approach fails to analyze and evaluate the full environmental impact of continued mining.

Impact on Traffic Congestion Comment 496-8

The DEIR indicates there will be significant traffic impacts but there is no indication of any guaranteed funding or timeline for the necessary road improvements. With the expected increase in traffic from the project, it is clear there will be a significant increase in road damage, truck debris, and safety hazards. Yet, there is no detail on how mitigation for the expected traffic impacts will occur.

Why is CEMEX not being required to mitigate the traffic congestion on Willow to Friant Road? Particularly, when other large companies have been required to finance mitigation measures. Table Mountain helped finance turning Friant Road into a four-lane highway. At Vulcan's rock quarry at Highway 41 and Road 45, Vulcan was required to make modifications on Road 145 and will be required to help finance the construction of Highway 41 to a four-lane road.

Why is CEMEX, a foreign corporation, being treated differently? CEMEX should contribute its fair share to mitigating the significant traffic impacts its increase in mining operations will cause.

Comment 496-9

Impact on Water Quality & the San Joaquin River

The DEIR acknowledges that mining could reduce river flows, yet fails to provide any clear solutions.

Comment 496-10

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the DEIR identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 496-11

Impact on the San Joaquin Parkway and Recreation

The DEIR uses out of date information when identifying sites in close proximity to the quarry. Some of the table sources go back to 2021. Ball Ranch and Ledger Island were not open to the public at that time. Also, the description of the San Joaquin Fish Hatchery fails to adequately describe the recreational facilities available including FINS and the Parkway Trail from the hatchery to Lost Lake Park.

Comment 496-12

The noise from rock crushing, blasting and drilling will negatively impact visitors to Ball Ranch, Lost Lake Park, Ledger Island and Sumner Peck Ranch but these noise impacts are not evaluated or addressed in the DEIR. The DEIR should fully analyze these impacts and set forth adequate mitigation measures for the impacts.

Comment 496-13

The DEIR mentions potential trail easements for public use but it lacks any clear commitment or timeline. The DEIR should identify the time frame and exact location of the trail to be constructed, and make clear that CEMEX would be responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

Comment 496-14

Conclusion

Due to the significant impacts to the San Joaquin River, wildlife, public safety, traffic, and air and water quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The County and CEMEX should also explore less harmful alternatives. Public transparency and accountability in the review process is critical to ensure that the long-term health of the San Joaquin River and surrounding communities is protected.

Thank you for your time and consideration of these comments.

Very truly yours,

Tracie L. Goodwin

1056 East Decatur Avenue

Fresno, California 93720

From: E. M. Green
To: Randall , David A.
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Monday, March 10, 2025 10:54:17 PM

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Report Suspicious

March 10, 2025 David Randall, Senior PlannerCounty of FresnoFresno, CA
Comments on CEMEX Rockfield Expansion Project DEIR Dear David,I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. I worry about many of the horrible impacts on the San Joaquin River Watershed. As well as how it will negatively impact the air quality with all of the exhaust and dust. Endless hours of vehicle emissions from shipping and employees commuting. It will also effect the biological resource that is the San Joaquin River. As stated before there are many traffic and noise concerns with moving of resources and commuting employees making the nearby roads crowded. Everything adding up to a large cumulative environmental impact that will negatively impact residents of all of Fresno County. Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter. Sincerely,
Eva Green
Clovis, CA

Comment 497-1

Comment 497-2

Comment(s) 497-3 497-4

From: Reid Gromis
To: Randall , David A.
Subject: Cemex mine proposal
Date: Monday, March 10, 2025 11:02:21 PM

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Report Suspicious

Good evening.

I'm writing to you in regards to the proposed Cemex plan for the large 100 year mining site in Fresno county. Comment 498-1

I don't think this is a good idea. I ride my bike with my kids across and along Friant Road often and I believe that an increase in mining activity will dramatically increase the traffic on our route and expand the danger for all pedestrians and cyclists who visit Woodward park. I didn't see any specific mentions of traffic impact on increased pedestrian and cyclists who visit accidents with the expected increase in large vehicle transports.

Wouldn't there be a better location for a large scale operation that doesn't impact the best regional park in our county. Maybe west of 99 or along the kings river where much of Fresno county's growth is being forecast. Or even better, an investment to reclaim and recycle materials from long gone projects. Comment 498-2

I also believe the additional traffic and the blast mine itself will contribute to the degraded air quality of Fresno county and hinder the long term health of the most vulnerable residents here for generations to come. Comment 498-3

It seems that there is a plethora of available materials for our community when it comes to building but very little investment in improving the environmental conditions for us to live and breathe. Comment 498-4

The owners of the plant won't have to live with these impacts. And the idea of committing to a century of more intense industrial activity in one of the worst air basins in the country is not the right step for future Fresnans.

I have also recently been discovering more and more access points to hike, bike, and explore along the San Joaquin River. After a century of this space being mined, I believe it's time to give it back to the public and nature. The serenity of open green spaces is hard to economically quantify but I know that I need places to go to connect to our planet and myself. My kids loved the peaceful canoe trip down the river without having to put up with the noise pollution of heavy machinery.

I hope that this project is not approved by the county as there are so many negative aspects, both discussed and unforeseen.

Thank you for considering my thoughts on the matter and be well.

Reid Gromis

From: amanda harrison
To: Randall , David A.
Subject: CEMEX Rockfield Expansion Project Concerns
Date: Monday, March 10, 2025 7:27:09 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David, I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. 1. Impacts on the San Joaquin River Watershed I grew up on the Riverbottom, where my family has lived for generations. The San Joaquin River is more than just a body of water—it is a lifeline for the land, wildlife, and communities that depend on it. This expansion threatens to disrupt the delicate balance of the watershed, leading to increased sedimentation, water contamination, and long-term ecological damage. Our river has already endured enough, and further degradation would be an irreversible loss for future generations, including my children and their children. 2. Air Quality and Dust Emissions The dust and pollutants generated by this expansion will have a lasting impact on the health of those who call this area home. My parents still live in the Riverbottom, and I worry about their exposure to airborne particles that can cause respiratory issues and other long-term health complications. Additionally, the increased industrial activity will contribute to already worsening air quality, affecting not only current residents but also future generations who deserve clean air to breathe. 3. Biological Resource Impacts The Riverbottom is home to a diverse range of wildlife, some of which are already struggling to survive due to habitat loss. Further expansion of CEMEX's operations will disrupt these ecosystems, endangering plant and animal species that have thrived in this area for centuries. Once these habitats are destroyed, they cannot be easily restored, leaving a permanent scar on the environment. 4. Traffic and Noise Concerns The increased truck traffic and industrial noise will not only disrupt the peaceful nature of our community but will also pose safety risks for families who live nearby. Roads that were once quiet and safe will become dangerous due to heavy machinery and increased transportation of materials. This is not the future I want for my children or for any family that calls this place home. 5. Cumulative Environmental Effects This project does not exist in isolation. It is part of a larger pattern of environmental degradation that, if left unchecked, will lead to long-term consequences for our community. The cumulative impact of water pollution, air contamination, habitat destruction, and noise pollution will forever alter the landscape of the Riverbottom, stripping it of the natural beauty and resources that have sustained families like mine for generations. Given

Comment 499-2

Comment 499-2

Comment 499-3

Comment 499-4

Comment 499-5

these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter. Sincerely,
Amanda Grossman

Comment 499-6

From: David Grubbs
To: Randall , David A.
Cc: District 2
Subject: Comments on DEIR of CEMEX Modification and UCUP Applications
Date: Monday, March 10, 2025 10:53:07 AM

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Report Suspicious

March 10, 2025

David Randall, Senior Planner
Fresno County Public Works & Planning Department
Development Services & Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

Subject: Comments on DEIR of CEMEX Modification and UCUP Applications for gravel mining in the San Joaquin River Floodplain

Comment 500-1

I oppose the extension of the CEMEX aggregate mining permit, and especially the expansion to hard rock mining at the Quarry Site on the San Joaquin River.

Comment 500-2

First, do we need to mine it at all, especially this way? Studies show we have more than adequate aggregate for at least fifty years.

Comment 500-3

In summary, the San Joaquin River is one of our most valuable assets for improving the quality of life in the region. If mining is to continue, it should be limited to a reasonable time frame and performed using conventional aggregate mining methodology. Ideally locations outside the floodplain should be sought. The same sheet of granite to be blasted into gravel at the CEMEX Quarry Site extends across the valley. Mining land fallowed because of excessive groundwater extraction for example, would have less impact and might help restore the value of land now out of service.

Comment 500-4

Below I have addressed several issues that were not addressed or considered adequately, in the DEIR.

1. **The affected population** - The magnitude of many of the impacts of this project are dependent on the population of the area. There are 1,100 homes at Woodward Lakes and many more at Copper River and New Town. Development has accelerated. The 2020 Decennial Census tracts 55.03 and 55.15 boast 8,300 residents in 3,200 households. The construction and expansion of Table Mountain Casino, Millerton New Town and adjacent tracts in the Willow/Shepard gap are now part of the picture.

The certainty of population growth requires more complete and longer term traffic analysis. The number of people affected by traffic safety and gravel damage to vehicles for example, is destined to rise considerably in the decades that follow. This growth is not accounted for in the DEIR. Growth also assures increasing demand for recreational and open space. And more people impact water quality issues. A hundred year permit is far too long given the paucity of population analysis.

Comment 500-5

2. Ponds and fluctuating water features. These invite eutrophication in the warm Central Valley and cyanobacteria blooms and neurotoxins affect wildlife and human health. There is no consideration of this risk in the DEIR. There has been no measurement of, nor plans for monitoring, phosphorus/phosphate, a major trigger for such blooms. The growth and death of these organisms have disastrous impacts on wildlife. Note too that population growth (item 1) exacerbates the risk of these blooms.

Comment 500-6

3. Salmon restoration. Among the causes of salmon extinction in the San Joaquin river is levee/berm collapse. The river then flows through adjacent ponds. Those river connected ponds are colonized by predators which prey on fry and prevent the recovery of endangered salmon. A 600 foot deep pit two hundred feet from the river edge surely poses this risk. Prevention and restoration if this occurs deserves more assurance than “monitoring” and “advice” from qualified experts.

4. Riparian ecosystem protection. Ninety percent of the Quarry Site "has been disturbed by mining operations." Google Earth images reveal "disturbed" to actually be "bare earth."

Comment 500-7

After thirty plus years of mining, the only significant native vegetation to survive is the narrow riparian ecosystem. A dozen or so oaks are present and thick riverside vegetation survives. Most all of it is within 200 feet of the river's edge. While this was surveyed to assure there are no "special-status species" of concern, monitoring and protection of the existing riparian habitat should be assured in the permitting process. Dewatering on the site may not be as innocuous as presumed.

The wildlife evaluation is hard to judge. That the vast majority of animal species expected on a Central California floodplain are not present is no surprise given the decades of industrial disturbance. There was evidence or observations of one hundred and seventy nine vertebrate species in a wildlife survey on similar property downstream. Only thirty or so species were observed or presumed present on the Quarry Site now. Mitigation that would assure species recovery should be required.

5. Access to navigable waterways. California does not assure the public's right to cross private property to access navigable waterways. It does however prohibit owners of lands adjacent to navigable waters from interfering with the public's right to use such waters. The permitting process could protect this right by requiring access, at very least on foot, to the river's edge.

Comment 500-8

6. Quality of life issues - San Joaquin River Parkway and the Central Valley.

Comment 500-9

Fresno, with more than half a million people, ranks year after year as one of the "worst cities" in America for green space, outdoor recreational opportunities and quality of life. Outside.com points out that we "lack green space, have poor access to parks, and made little investment in recreation." We rank fifth from the bottom in America.

The Trust for Public Land notes that only 2% of Fresno is park space and that we have only one playground for every 10,000 people.

The Fresno Bee reported just last month that "Fresno is one of the worst spots for an active lifestyle." Fresno is one of the "least outdoor-friendly cities" according to rv.travel.com.

The San Joaquin River Parkway and Conservation Trust (a nonprofit) and the San Joaquin River Conservancy (a state agency) have, over more than thirty years, brought thousands of acres of the floodplain into public hands, built miles of multipurpose trails, and restored riverside ecosystems. They've provided tours and education programs for years and have recently opened several major SJR Parkway properties to the public. The Parkway, and public transportation to and from it, can address our quality of life issue much better than a 600 foot deep hole owned and operated by a foreign multinational corporation.

The CEMEX site, because of its scope and its location, will have a major impact on the Parkway. The CEMEX Quarry site completely fills the space between Friant Road and the river edge. If it is to be mined at all, provisions should be made to assure public passage through the CEMEX site from Lost Lake and the public facilities at the hatcheries to the Parkway properties downstream.

I have been tolerant, if not outright supportive, of aggregate mining in the San Joaquin river floodplain. After all, California leads the world in the loss of its wetlands. When we dig a hole in a floodplain, it eventually fills with water and we can get a wetland back.

But not this hole. This 58 story deep pit promises to be an unmitigable environmental disaster. It does not help that CEMEX has a history of air, water, and labor violations and a reputation for minimal restoration at best. CEMEX was cited and fined in the UK, cited in Victorville, Monterey, and sites in Colorado and Michigan.

It would be wise to require CEMEX to purchase bonds or otherwise provide funds to cover damage to neighbors and to assure their commitment to restore the floodplain property to high standards.

David Grubbs
2535 E. Palo Alto Ave
Fresno, Ca 93710
559 299 1677

Original: drandall@fresnocountyca.gov

Cc: Gary Bredefeld District2@fresnocountyca.gov

From:	Alyssa Gurney
To:	Randall , David A.
Cc:	sweaver@riverparkway.org
Subject:	Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Monday, March 10, 2025 7:49:21 PM

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Report Suspicious

Dear David,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have concerns that I urge you to address prior to moving forward with approval. I am concerned about air quality and dust emissions caused by this project. Air quality in this region continues to be a challenge which prompts many negative health outcomes. According to the DEIR:

Comment 501-1

4.3.4 Project Impacts and Mitigation Measures

Comment 501-2

"- The DEIR says that project emissions may exceed cancer risk thresholds. DEIR pg. 4.3-63. The DEIR says that because mitigation measures would reduce emissions, the DEIR did not evaluate population-wide cancer burden. DEIR at pg. 4.3-64. CEQA requires that the analysis be performed before taking into account implementation of mitigation measures"

This is extremely concerning to me that there may be an increase is emissions that may exceed cancer risk thresholds.

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter. Sincerely,

Comment 501-3

Alyssa Gurney

Fresno resident, zip code 93705

March 10, 2025

David Randall, Senior Planner
County of Fresno
Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear Mr. Randall.

I would like to submit my comments to you and Supervisor Bredefeld regarding CEMEX Rockfield Expansion Project DEIR. Below please see my concerns: Comment 502-1

1. **Impacts on the San Joaquin River Parkway Access:**
   I have worked as a subconsultant on multiple river access and activation projects for SJR Western Reaches, River West and Circle V projects. Our county is blessed to share a 22 miles border with the San Joaquin River Parkway. With so much potentials, Fresno County residents have very limited access to the River. Further expansion of the CEMEX mining operation will impact the access furthermore.

   On 4.17 Transportation chapter of the DEIR/San Joaquin River Parkway Master Plan Update, the document says, "*The multi-Use trail would also extends along the northwest boundary of the Plant Site, just outside the site, and extends along the Southwest Boundary of the Plant Site**, just inside the site***." The SJR trail *inside* a heavy mining site will be extremely unattractive, unsafe, subject to noise and air pollution due to explosives, thus not used by the Fresno County public, compromising access and Parkway vision Comment 502-2

   Additionally, the document reference the Fresno County Regional Transportation Plan in multiple places. The county is in the process of updating the RTP, and the new policies are not reflected in the DEIR. Comment 502-3

   Supervisor Bredefeld, please be a champion for the River and for the public access to River.

2. **Impact on Youth Physical and Mental Health:** Comment 502-4
   I have worked with youth volunteers and Scouts on the river cleanup for four years. I have witnessed firsthand how our youth enjoy and care for the river and how being

Comment 502-4 Cont.

outdoor helps them to be off the screen, stay active, bond with each other and bond with nature. I encourage you to set up a town hall meeting with Fresno County youth volunteers who have worked on the river and hear from them what their vision is for their River.

Supervisor Bredefled, please be a champion for our youth and put their health and interest before the big pocket of a muti million dollar non-local (non-US) company.

3. **Impact on Traffic Safety on Friant and Safe Access to Woodward Park:**

Comment 502-5

In September 2020, shortly after Angel Hernandez was fatally hit by a car at the intersection of Friant and Fort Washington, a group of Audubon Bluff neighbors and Woodward Park users (runners, walkers, etc.) invited you to a walk audit along Audubon and Friant Rd. As you remember, during our walk we tested different crosswalks that lead to Woodward Park on Friant Road. We discussed the traffic safety situation that high volume traffic is causing on Friant Road and its incompatibility with so many pedestrians and bicyclists walking to and from Woodward Park.

My Daughter runs with a local high school cross country and track team and she and many high school students who cross Friant to go to the Woodward Park for their practices, are constantly subject to one of worse traffic safety risks in the county using the cross walks on Frint Rd. That day, you promised to help.

Unfortunately, the traffic safety on Friant Rd has gotten worse since then. More fatal accidents like Paul Moore on Friant and Audubon, and Amaya Chenot on Shepard and Friant are proof of that terrible reality. The number of memorials that are erected at every intersection on Friant Road is a testimony to the systematic and chronic traffic safety issues on the roadways near Woodward Park. I speak for many mothers and fathers that must live in fear knowing their sones and daughters are constantly subject to fatal accidents walking the crosswalks into the park. The CEMEX expansion will increase truck traffic from 250,000 to 400,000 a year and will directly makes Friant Road more dangerous to cross, bike and drive.

Supervisor Bredefled, please be a champion for our young runners and Safe Access to Woodward Park. Please encourage your colleagues on the board to put the health and safety of residents of your district before the wealth of another mega non-local (non-US) company and say NO to CEMEX request to extend the operation permit to 100 more years and to a scale so big that it will match the biggest mining operation in California.

4. **Impact on Traffic Safety on Willow and Copper:**

The Willow and Copper intersection is noted on the 4.17 Transportation chapter. That intersection is right by Clovis North Educational Center, where so many of the high school athletes use to cross to the Copper bike/ped trail for their daily practices. My daughter is one such athlete from Clovis North and a few months ago was almost hit by a car crossing at that intersection. A car turning right into Willow on eastbound Copper missed the red light and almost hit my daughter. The danger on the roads in the City of Fresno and County of Fresno is undeniable for pedestrians and cyclists. Multiple plans are happening simultaneously (Fresno Vision Zero Plan, Fresno Active Transportation Plan, Fresno County Regional Transportation Study). They are looking at collision data, and results are mind blowing. Please be a champion for Clovis North high school students and say no to CEMEX expansion.

Comment 502-5 Cont.

Sincerely,

Sheila Hakimipour
326 W River Ct
Fresno, Ca. 93711

From:	Jeffrey Hallock/D. Symes
To:	Randall , David A.
Cc:	sweaver@riverparkway.org
Subject:	Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Monday, March 10, 2025 3:51:55 PM

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Report Suspicious

03/10/2025

David Randall, Senior Planner

County of Fresno

Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear Mr. Randall,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

Comment 503-1

1. Impacts on the San Joaquin River Watershed

4.10.1.5 Flood Hazards: The flood hazard analysis is limited to the FEMA 100-year floodway and floodplain and states the "the floodplain does not encroach into the Quarry Site" as shown on Figure 4.10-1. The continued development of the berm between the river channel and the Quarry Site will constrain the river and will create a choke point especially at the north end of the Quarry Site where the easterly bank of the river is more vertical. According to the 100-Year Hydraulic Results found in the Hydraulic Analysis in Appendix G-1, the flood water surface elevation between Stations 20 and 21averages out to 313.27 feet. Without a constraining bank between Stations 20 and 21on the east side of the river additional water flow will likely push to the east across the north side of the Quarry Site. Further, the Executive Summary includes the following caveat: “The Bureau of Reclamation owns and manages the dam, and, during unforeseen events, may be required to release water into the San Joaquin River at rates that could exceed the river channel capacity (Fresno County 2018a),” a foreseeable hazard not adequately addressed in the DEIR.

2. Air Quality and Dust Emissions

The status of the San Joaquin Valley air basin as one of the very worst in the nation is well known, a problem that has created serious health problems for our family and many of our friends. We are not confident that this corporation has the skills or the resources to contain the fine particulates that will inevitably be raised by their proposed uses of the site without excessive water use, the water itself being a scarce and valuable resource.

Comment 503-2

4.19.1.10 CSA 44C Wells and Quarry Site Interactions: Impact on water tables for domestic residential wells. The possibility of dropping water tables on the extensive dig is a huge concern for residents.

Comment 503-3

1) Cemex should install at every residential well a constant water level monitor. This should be monitored monthly by an independent contractor paid for by Cemex.

2) Cemex must provide a bond to protect every residence of this community. If the wells fail or have greatly reduced water production and the homes are no longer realistically habitable, protection for the homeowners must be in place before operations begin. Cemex must be liable and purchase the properties at high market value. There must be a penalty in place to be paid to the resident to cover costs of moving through no fault of their own.

3. Biological Resource Impacts

Comment 503-4

4.4.1.4 Wildlife: The DEIR does not adequately analyze potential impacts of blasting on wildlife. The examples of habituation of wildlife to mining operations are for surface mining, not the deep rock mining proposed here.

4.4.1.9 Critical Habitat: Mischaracterization of a regulated habitat. The Waste Wash Conveyance Ditch at the Plant Site likely qualifies as a stream, and diverting or obstructing its natural flow, altering its bed, channel, or bank, or depositing any material into this feature would be subject to provisions of California Fish and Game Code Section 1600 et seq.

Comment 503-5

4. Traffic and Noise Concerns

Comment 503-6

The impact of blasting, mining operations, and heavy transportation will inevitably spill over to nearby public parks and recreation areas. This is a cost to the public (and to our own well being) that is not adequately mitigated in the DEIR.

5. Cumulative Environmental Effects

Comment 503-7

4.3.4 Project Impacts and Mitigation Measures: The DEIR says that project emissions may exceed cancer risk thresholds (DEIR pg. 4.3-63). The DEIR says that because mitigation measures would reduce emissions, the DEIR did not evaluate population-wide cancer burden (DEIR at pg. 4.3-64). CEQA requires that the analysis be performed before taking into account implementation of mitigation measures.

Comment 503-8

Given these concerns and many other concerns, we urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

Thank you for your time and consideration of these comments. We look forward to your response and further discussions on this important matter.

Sincerely,

Jeffrey K Hallock

Deborah M Symes

746 E Fedora Avenue
Fresno CA 93704

From:	Bryan Harley
To:	Randall , David A.
Subject:	Public Comment re: CEMEX Mining EIR
Date:	Monday, March 10, 2025 2:20:07 PM

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Mr. David Randall,

I am writing to express my strong opposition to the proposed CEMEX Rockfield Expansion Project along the San Joaquin River. This project poses an unacceptable threat to our environment, community health, and the long-term integrity of the San Joaquin River ecosystem. Comment 504-1

Research indicates that the Fresno area currently has nearly a 200% surplus of locally sourced gravel—a resource that will comfortably meet regional needs for decades to come. Approving this project, which aims to extract additional material through blasting techniques, is economically unjustifiable and would serve only corporate interests rather than the needs of our community.

The proposed blasting and deep-mining operations (extending 600 feet below ground surface) would permanently scar the river bottom, further degrading an already over-extracted and polluted waterway. The San Joaquin River has suffered greatly from decades of mining, with its wetlands, salmon runs, and natural floodplains already in jeopardy. Expanding mining operations at this critical juncture would irreparably harm local ecosystems and disrupt the delicate balance of our natural resources. Comment 504-2

Beyond environmental impacts, the project threatens to dramatically increase truck traffic—potentially adding the equivalent of billions of car trips annually—to our local roads, exacerbating wear on infrastructure and increasing risks to public safety. Comment 504-3 The disruption to recreational spaces and the loss of riverfront greenspace will diminish quality of life and limit access to natural areas that many community members depend on for leisure and well-being. Comment 504-4

Community stakeholders deserve to be heard, and elected officials and state agencies charged with protecting our natural resources must prioritize public health over corporate profits. The inaction by some agencies and the controversial track record of CEMEX in Fresno County underscore the need for a more cautious and community-centered approach. Comment 504-5

For these reasons, I urge the County to reject the proposed expansion of CEMEX's mining operations. Instead, we should focus on sustainable and responsible use of the local gravel surplus while preserving our river's health, securing recreational spaces, and safeguarding the well-being of current and future residents.

Thank you for considering my comments.

Sincerely,

Bryan Harley
5449 N Woodson Ave
Fresno, CA 93711
bryanharley@gmail.com
559-549-7214

From: John Hayes
To: Randall , David A.
Subject: Draft Environmental Impact Report (SCH No. 2020060123
Date: Monday, March 10, 2025 3:18:00 PM

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Report Suspicious

Mr. Randall,

I am writing to comment on the DIER for the Cemex Rockfield Quarry Project.
This is a project which is not needed for this area.

Comment 505-1

1. The mining operation as proposed is for hard rock mining which will create a 600 foot hole in the ground not 200 feet from the San Joaquin River and adjacent Conservatory trust area. This hole will be equal in depth to the height of the Statue of liberty with base and torch. Blasting a hole this size in our areas is not acceptable. Further a number of California State and local Plans such as the Surface Mining and Reclamation Act of 1975(SAMRA), require responsible mineral extraction. Further the Act ensures that adverse environmental impacts from mining are minimized and that mined lands are reclaimed to usable condition. There is no way possible that the proposed operation will ever be reclaimed, 100 years from now. We and the company will all be dead!

2. This company has had over the years and in other states, such as Colorado not been a good corporate partner for the cities/areas it is located in.

Comment 505-2

3. The DIER does mitigate the adverse environmental impacts in other areas such as air pollution, noise abatement, road destruction, personal property destruction, river destruction, etc. Mitigation in the report only includes monitoring and not management of the situations.

Comment 505-3

4. There is no way a company should get a 100year lease in our county/city.

Comment 505-4

Regards,
John Hayes
8461 N. Fisher Ave
Fresno, Ca. 93720

From: JEAN HAYS
To: Randall , David A.
Subject: CEMEX Rockfield Quarry Modification Project EIR
Date: Monday, March 10, 2025 12:53:32 AM

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Report Suspicious

David Randall, Senior Planner
Fresno County Public Works & Planning Dept.
Development Services and Capitol Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

SUBJECT: REISSUED NOTICE OF A DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR) FOR MODIFICATION TO THE EXISTING CEMEX ROCKFIELD QUARRY

The CEMEX Company's application to modify, expand and extend operations of the Rockfield Quarry, occupying two sites on the west side of North Friant Road should NOT be allowed to happen. The company wants to continue this proposed expansion of operations in aggregate mining and processing, which includes rock, sand and gravel. It would be disastrous to people, wildlife, the environment and to the Earth, where we all live. CEMEX wants to extend its operations for another 100 years, as well. Interestingly enough, Mexico, CEMEX's home country, has banned this kind of excavation. Fresno County can learn from Mexico!

Comment 506-1

Comment 506-2

Among other environmentally-related impacts apparently overlooked are these:

Comment 506-3

Many drivers along Friant Road have already experienced broken windshields due to gravel escaping from CEMEX truck traffic. With expanded drilling and blasting, that truck traffic would increase.(See DEIR), and so would numbers of broken windshields.
Impact on wildlife, including birds, would be huge, to say nothing of the human impact!

There are so many disturbing issues that come to mind while reading the DEIR. I am sure other letters you received will name them, so I will skip those details, while supporting those letters of opposition. Here are some of the things that haunt me because of the serious consequences of approval:

Comment 506-4

Air Quality: The DEIR says project emissions may exceed cancer risk thresholds and did not evaluate populations-wide cancer burdens. Does ignoring this make it go away?? NO!

Impacts from Blasting: CEMEX is now digging gravel. Now they want to blast for gravel! Among the impacts, those to area residents have the potential to be very significantly noisy and could happen once or twice daily. This noise would damage structures and wells and destabilize the San Joaquin River embankment. While this is addressed in the DEIR, it does not evaluate impacts of blasting to users of the adjacent park (Lost Lake Park), and it barely mentions disturbances to residents of the area!

There is the potential for damage to nearby groundwater wells as well. Keep this in mind as we approach World Water Day on March 22!

Comment 506-5

The potential for environmental accidents is great with blasting happening at a 600 ft. deep level so close to the San Joaquin River, to say nothing of the giant hole next to the SJ River which would have both aesthetic and environmental impacts on the river and surrounding area. CEMEX has said it would stain the walls of the great pit with earth colors. That doesn't mitigate the potential for a crack in the wall, thus allowing the San Joaquin River to spill into the pit, thus contaminating the river and the surrounding area!

More on Noise: Mitigation measures for noise impacts need to be more specifically required in the DEIR rather than a laundry list for the applicant (CEMEX) to choose from.

The DEIR should have analyzed how much noise reduction each would result in and required particular combinations of measures to ensure noise is adequately reduced, especially nighttime noise from the operation.

Comment 506-6

I would sincerely hope that, when reviewing this CEMEX proposal, Fresno County would consider the environmental consequences to be the most important criteria for its ruling. The area around the San Joaquin River, especially around the Lost Lake area is a thing of beauty. The San Joaquin River Parkway & Conservation Trust has worked tirelessly to help preserve this beauty. In a time when our Earth environment is in trouble, it is up to US to help preserve and defend it. We live here; our plants and wildlife live here!! To be able to go out to a place nearby to unwind and enjoy the beauty and serenity of the natural environment of which we are a part, is one of the most important aspects of our journey here on Earth.

Comment 506-7

PLEASE do not allow CEMEX to go on with it's 100-iyear plan to destroy a part of Mother Earth, and to do so just to make money!! We have more than enough sand and gravel here now to take care of our construction needs!

Sincerely,

Jean Hays Gunn
5493 N. Roosevelt Ave.
Fresno, CA
93704
Phone: 559-313-7674

Dear Mr. Randall

My name is Brad Helling. I am a retired teacher and former seasonal ranger, naturalist in Kings Canyon National Park. I am writing in concern for Cemex Corporation's scheme to extend their permit for 100 years to blast a 600 foot hole adjacent to the San Joaquin River. I short this is a bad idea. The impact on the environment, wildlife and

nearby residents would be devastating. The project would severely impact air quality, water quality, fish and wildlife, cultural resources and visual aesthetics.

The California Geological Survey updated in 2018 indicates we already have nearly double the aggregate we need for the next 50 years so supply is not a problem.

The San Joaquin River Parkway has been working tirelessly to protect what remains of the river's natural beauty. This project

would set back their efforts irreparably. Cemex is already encroaching on a wildlife preserve and this would result in even more damage. The river is home to endangered and threatened wildlife such as steelhead salmon, a hawk, burrowing owl and tri-colored blackbird. Fish and Game has been working to restore Chinook salmon to the river. Prior to the construction of Friant Dam old timers reported that

the salmon were so
surrendered during spawning
season you could walk
across the river on their
backs (and the river was
a mile wide.) We are
not the only ones who
live here. We must share
our home with our fellow
creatures.

The Iroquois people
speak of a mythical beast
called the Windigo, which
represents greed. No matter
how much it gets, it wants
more. Cemex is a Windigo.

Their safety and environmental records a abominable. They have been fined more than 43 million dollars for 81 separate environmental violations since the year 2000. What makes us think this will improve.

Cemex is like the guest who doesn't know when it's time to leave. They should say "Thank you" and make their exit. Cemex it's time to go.

Frank Nelling
4028 N. Wilson Ave.
Fresno, CA. 93704

Frank& Patti Helling
4028 N Wilson Ave
Fresno, CA 93704-4140

SACRAMENTO CA 957
8 MAR 2

David Randall
~~220~~
2220 Tulare Street, Sixth Floor
Fresno, CA. 93721

RECEIVED
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FRESNO COUNTY DEPT. OF PLANNING

937218206 C022

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Frank Helling
4028 N Wilson Ave
Fresno, CA 93704

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Mr. Helling

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Protects Divisions
2220 Tulare Street, Sixth Flood
Fresno, CA 93728

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David,

Comment 508-1

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. Many of the proposed mitigation measures are simply inadequate and some impacts lack any mitigation at all.

Impacts on the San Joaquin River Watershed

Comment 508-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination, The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events. Additionally, the groundwater data used for htDEIA was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater / surface water interaction at both sites.

Comment 508-3

Given the length of the permit, the draft environmental impact report should outline steps to ensure that potential risks are mitigated, as well as which parties are responsible should long-term impacts to the San Joaquin River occur. The following are some questions that should be posed and followed through to ensure that solutions for these scenarios are robust:

- What is CEMEX's plan if major foodding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Impacts on the San Joaquin River Parkway & Recreation

Comment 508-4

CEMX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments of a timeline:

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- THe DEIR should describe how the proposed trails meet the San Joaquin River Parkway's Master Plan requirement for a 300-foot buffer between mining operations and public access.

- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trial is used as a community benefit of the project.

Comment 508-4 Cont.

The DEIR uses outdated information when identifying recreation sites in close proximity to the quarry, including/such as….

Comment 508-5

Furthermore, this outdated information will result in the noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, as these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 508-6

The DEIR identifies several unavoidable negative impacts, including:

- *Scenic Designation:* The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases). This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- *Traffic Congestion*: Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on how mitigation takes place is just one example of the inadequacy of the DEIR.

Comment 508-7

- *Air Quality*: The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 508-8

These impacts will be felt by surrounding communities in terms of the already high levels of asthma and climate impacts such as extreme heat and drought from increased diesel emissions.

Threats to Wildlife

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts or propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Comment 508-9

For example, the DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat that are local to the region and play critical ecological roles. Drilling, blasting, and excavation could disrupt nesting and migration patterns but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations or protections.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook

salmon in the San Joaquin River? The DEIR should use state-specific standards to ensure that these fish are protected.

Comment 508-9 Cont.

CEQA requirements were developed to ensure that impacts to wildlife were properly assessed. The DEIR has failed to adequately capture the biodiversity of the San Joaquin River Basin through inadequate analysis and standard implementation. In order to address these concerns, it is highly recommended that the section go through major revisions and have the public commentary available.

.

Conclusion

Comment 508-10

Given the significant impacts on the river, wildlife, public safety, and air quality, the County should require CEMEX to provide additional analysis, stronger mitigation measures, and financial guarantees. This information must be drafted and recirculated for public review before finalizing the environmental impact report. Ensuring public transparency and accountability in this process is crucial to protecting the long-term health of the San Joaquin River watershed and surrounding communities.

Thank you for your time and consideration.

Sincerely,

Pedro Hernandez
1318 N. Safford Avenue
Fresno, Ca 93728

March 4, 2025

David Randall, Senior Planner
Fresno County Public Works & Planning Department
Development Services & Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

Dear Mr. Randall,

I am writing to lodge a protest against the idea of allowing Cemex to expand or continue their operations at the San Joaquin River. Comment 509-1

1) The river is a unique—truly a one-of-a-kind—asset and defining feature of our region. Spending time at Ball Ranch, the Riverview Ranch House, or Sycamore Island is so inspiring. The river is a MAJOR wildlife corridor and all kinds of folks and entire families are out there walking, biking, fishing, bird-watching and more. And there is so much to see! Our first sight on one recent Sunday was a bald eagle soaring by!

2) In addition, we're learning that the more plant life there is in our landscape the more carbon is sequestered in their roots—the bare, dusty, ripped-up, wheel-tracked landscape and truck traffic created by this business isn't doing anything to help our air quality or our warming atmosphere!

3) It is so short-sighted to do ANYTHING to harm the river and the river habitat that is so vital to wildlife survival and human flourishing. We've learned from the past and from such works as Rachel Carson's *Silent Spring* that wildlife health is human health.

4) NIMBY has a bad reputation, but it makes sense that harmful-impact activities like deep pit mining with hard rock blasting shouldn't happen near a popular recreation area and an important wildlife corridor. This should not be done anywhere close to our city at all. Comment 509-2

5) And floating the idea of 100-year lease is an extreme move. That is a century! Things can change radically in that amount of time and that makes an agreement like this a very bad move. A huge company can seem like a formidable opponent, but Fresno County's people should have their health and safety put first over this big commercial interest. Comment 509-3

Please do all you can to make sure these concerns are clearly reflected in the Draft Environmental Impact Report. Thank you!

Sincerely,

Lenore Hiebert

Lenore Hiebert
929 E. Yale Ave., Fresno, CA 93704

From Lenore Hiebert
929 E. Yale Ave.
Fresno, CA 93704

FRESNO CA 936
5 MAR 2025 PM 2 L

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MAR 10 2025
FRESNO COUNTY PW & PLANNING

David Randall, Senior Planner
Fresno County Publ. Works & Planning Dept.
Dev. Services & Capital Projects Division
2220 Tulare St., 6th Floor
93721-212706
Fresno, CA 93721

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Lenore Hiebert
929 E. Yale Ave.
Fresno, CA 93704

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Ms. Hiebert

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From: Leslie Hoyt
To: Randall , David A.
Cc: sweaver@riverparkway.org
Subject: Cemex Project
Date: Monday, March 10, 2025 10:08:48 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. Along with so many other Fresno County residents, I believe the San Joaquin River is a treasure that has been severely abused, neglected, and underutilized partly because of the impact already caused by mining operations. When I visit greenbelts along many other beautiful rivers in our nation, I notice how little we have been able to do in Fresno to make our river the heart of the community. The CEMEX proposal appears to suggest that we will witness further degradation of this valuable resource and its surrounding environment rather than making progress toward developing a ecologically respectful community asset that is available to all

Comment 510-1

I have reviewed the DEIR and believe that this project threatens the San Joaquin River (a local treasure that mining operations have already impacted in an extremely negative manner), local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Impacts on Water Quality & the San Joaquin River

Comment 510-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?

Comment 510-3

- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 510-3 Cont.

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 510-4

Impacts on the San Joaquin River Parkway & Recreation

Comment 510-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments, financial or otherwise, or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for funding, constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 510-6

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 510-7

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** Is there any example of rock staining sufficiently mitigating the harm created to the scenic views? The proposal constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How

Comment 510-8

will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR.

Comment 510-8 Cont.

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining? Since we know that CEMEX Lyons is the #1 polluter in towns like Boulder County, Colorado, emitting 357,000 tons of CO2 per year, what kind of monitoring will be done to ensure that Fresno County is not similarly impacted?

Comment 510-9

Threats to Wildlife

Comment 510-10

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated.

The proposed mitigation measures do not comply with existing regulations for protection and do not supply sufficient information on mitigation measures being proposed to mitigate the effects of blasting activities on migratory birds and species at risk. More information is needed on the overpressure and vibration monitoring program including best management practices being considered to reduce noise and vibration emissions. Standards need to be included in the report that are appropriate to assess fish protection of the species found in this specific river, rather than using standards based on conditions found in Alask.

Conclusion

Comment 510-11

The impacts of this project on the community, the wildlife, the river, safety and air quality are not sufficiently addressed in this DEIR. Additional and more appropriate analysis should be required, and financial guarantees from CEMEX regarding mitigation measures need to be obtained. rafted and recirculated for public review before the finalizing the environmental impact report for the project. When obtained, this information needs to be readily available for the general public to review.

Thank you for your time and consideration.

Sincerely,

Leslie Hoyt
5584 W. Cromwell Ave.
Fresno, CA, 93722

--
Leslie A. Hoyt, Ph.D.
(she/her/hers)

March 10, 2025

David Randall, Senior Planner
County of Fresno
Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

Comment 511-1

The San Joaquin River is an important resource for the residents of Fresno County and for those in counties nearby. The impact of this project has significant repercussions on both the environment of the river and the adjacent areas and also on the aesthetic and recreational uses of the river corridor. My family is seriously concerned that these impacts will have immediate and long-lasting impacts that will severely compromise our quality of life in the Central Valley.

Comment 511-2

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

Comment 511-3

Thank you for your time and consideration of these comments.

Sincerely,
Kay Hutmacher

4837 W. Ceres Ct.
Visalia, CA 93291
kayhut@gmail.com

From: Carolyn Johnson
To: Randall , David A.
Subject: CEMEX rockfield quarry modification project
Date: Monday, March 10, 2025 4:23:59 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Having recently read information and attended a meeting that addressed the expansion project, I am writing to convey my thoughts about the plan. Several of my fellow citizens have done exhaustive research and are much more knowledgeable about the details than I. So, I will record here a simple benefit/risk assessment as this plan relates to those of my Fresno neighbors.

Comment 512-1

I have lived in the Woodward Lake area for 28 years, am a home owner and retired public servant, having retired from Fresno Unified. I moved here when there was little development save for Woodward Lake. The river is within walking distance and I frequently use the Eaton bike trail. it is beautiful, especially this time of year. Now, on to the risks/benefits:

RISKS

Comment(s) 512-2 512-3 512-4

Air pollution from the blasting and dramatic increase of truck traffic/exhaust fumes
Noise pollution from blasting and 16 hours per day of truck traffic
Water pollution due in part to the close proximity to the river, especially troubling for those home owners who live close and have wells that supply water to their homes
Light pollution because of the light necessary at the site to operate long hours
Danger to wildlife from blasting, air and water pollution
Decrease in property values of those homes near the site
Increased traffic due to enormous number of trucks

Comment(s) 512-5 512-6 512-7 512-8

BENEFITS TO CITIZENS

Comment 512-9

More available gravel- NO There is a sufficient supply nearby
More jobs- NO will not be increased opportunity
Aesthetically pleasing, enhances the landscape- no need to answer this one

Comment 512-10

In closing, I have a few questions for you

Comment 512-11

Who does benefit from this expansion, apart from CEMEX?
Would you buy a house in close proximity to the site?

I love my home and have a long history in Fresno, with close personal friendships. I also served hundreds of citizens during my career so I intend to live here. The river and the area are some of the precious few things that there is to enjoy here, however. So now CEMEX and the powers that be in Fresno want to take that away? Can't we do better?

Carolyn H. Johnson
9836 North Canyon Creek Lane
Fresno, CA 93730

21322 Lago Bello Lane
Friant, CA 93626
7 March 2025

Mr. David Randall, Senior Planner
Fresno County Public Works & Planning Department
Development Services & Capital Projects Division
2220 Tulare St., 6th Floor, Fresno, CA 93721

Dear Sir,

My name is Patricia Johnson & I'm 81 years old. During my life I have spent years in Florida where various elements were dug up & sand piled into mountains of sand. I've also lived/spent long periods of time in Georgia, California & most of the South Eastern states. I was able to enjoy some of the areas but also saw & experienced problems in those places which had been torn apart like you intend to do to the San Joaquin River.

Comment 513-1

Where mining had lasted for numerous years, what had been beautiful landscapes had been turned into bare ground, no trees nor bushes. Mining pits were no longer lovely & clear lakes now had dull colored water. Many left it an ugly hole in the ground - no trees, no grass, no anything except

Comment 513-2

a deep ugly hole,

The worst problem will be hard rock blasting! In addition to the sound of blasting, it will hardest on residents who have allergies and/or severe respiratory problems. Also, the noise if homes are nearby & are not being taking into consideration & the water quality will be threatened for people, animals & environment!

Comment 513-3

With these problems causing such an impact on those in the area including employees & others not mentioned, PLEASE think of the people in the nearby property & those where wind will spread dust & other tribulation. Also think of the nearby property, their exposure plus long lung health problems & how it will affect their children & coming generations, as well as your workmen & those who will be involved. Thank you,

Comment 513-4

Respectfully,
Pat Johnson

SACRAMENTO CA 957

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Mr. David Randall, Senior Planner
Fresno County Public Works & Planning Dept
Development Services & Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, CA 93721

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MAR 10 2025
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93721-213705

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Patricia Johnson
21322 Lago Bello Lane
Friant, CA 93626

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Ms. Johnson

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From: Vanessa Jones
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Monday, March 10, 2025 8:02:16 AM

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March 10, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Mr. Randall,

Comment 514-1

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Impacts on Water Quality & the San Joaquin River

Comment 514-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?

Comment 514-3

- Who will be responsible for cleanup and long-term damage if the pit

becomes part of the river system?

Comment 514-3 Cont.

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 514-4

Impacts on the San Joaquin River Parkway & Recreation

Comment 514-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 514-6

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 514-7

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after

mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.

Comment 514-7 Cont.

- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 514-8

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 514-9

Threats to Wildlife

Comment 514-10

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 514-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information

will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,

Vanessa Jones
1099 Sylmar Ave, Clovis CA 93612

Dear David Randall,

I am astonished that the Cemex Rockfield Expansion Project is even being considered for approval. The idea that we are committing generations to a 100-year blight of the San Juaquin River is hard to believe. Comment 515-1

The location of the project is very ill conceived as it sits in the middle of a river corridor that serves as a recreational resource for the citizens of Fresno County and beyond. Comment 515-2

The scope of the project, blasting to a depth of 600 feet to recover gravel would create irreparable harm to the river and surrounding ecosystems. Comment 515-3

The road that serves the mining area is inadequate to support the additional load and traffic of industrial vehicles. The size and volume of vehicles will create a hazard that jeopardizes the safety of the community. Comment 515-4

Please reject Cemex Rockfield Expansion Project. Comment 515-5

Sincerely,

3/7/25

William Koole

3253 W Robinwood Ln

Fresno, CA 93811

wkoole@hotmail.com

William Koole
3253 W. Robinwood Ln.
Fresno, CA 93711

SACRAMENTO CA 957
8 MAR 2025 PM 2 L

David Randall, Senior Planner
Fresno County Public Works & Planning Dept
Development Services & Capital Projects Div.
2220 Tulare St, 6th Floor
Fresno CA 93721

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MAR 10 2025
FRESNO COUNTY PW & PLANNING

93721-210699

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

William Koole
3253 W Robinson Lane
Fresno, CA 93811

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Mr. Koole

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From: Tom Laury
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Monday, March 10, 2025 12:50:52 PM

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Report Suspicious

Dear Mr. Randall;

Thank you for your consideration of public comments regarding this proposal. I appreciate the opportunity to express my thoughts. Comment 516-1

I am very concerned about the proposal for expanding the CEMEX Rockfield Project. This location is entirely inappropriate for expanded mining, and CEMEX is a very dubious partner for Fresno County.

Impacts on wildlife: Comment 516-2

First and foremost is the impact of noise. Blasting, crushing and screening gravel and rock, operating mining equipment such as loaders and transporters, and accompanying trucks, will all have impacts far beyond the physical boundaries of the mining operation. Birds and mammals, especially, seek protection and refuge from human activity for their daily survival and for nesting and raising their young. Explosions, rock crushing, sand and gravel conveyors, equipment, will all create noise which will drive birds and mammals from the area for miles surrounding the proposed project.

The location of a pit mine in close proximity to the river creates a hazard which can never be mitigated if the river flow is diverted in to the mine through accident, levee failure, or flooding, all of which are nearly inevitable. The entire river bottom area was flooded as recently as 1997. The inclusion of dust, contaminants, and silt with the river itself would be an ecological tragedy, killing and wreaking havoc on fish and amphibians. The only benefit to placement in this location would be to CEMEX, allowing them to further and maximize income and profits. Comment 516-3

Impacts on the Public and Recreation: Comment 516-4

In this modern age of increasing population and dense habitation, which will only increase in the future, people need and seek peace and quiet, a refuge, just as the animals do. We need to reestablish our relationship with Nature from time to time, for our physical, mental, and spiritual health. The Parkway and the Public Lands have been acquired to fill these needs. The noise associated with this proposed use has dramatic impacts far beyond the property lines. The sounds of blasting, machinery, industrial vehicles, will impose and impinge on the needs of the many to benefit the few. Even today, under current use, the peace and quiet which should be

experienced canoeing down the river is destroyed by the noise created by CEMEX activities. I don't see these issues addressed anywhere in the EIR.

Comment 516-4 Cont.

Finally, there are so many aspects I would like to consider further, and respond to, but I simply haven't had the time yet to do so. Please consider extending the period for public comment to be submitted. CEMEX has had four years to prepare this, I feel the public is at a considerable disadvantage in this regard.

Comment 516-5

Thank you very much for your time and attention.

Tom G. Laury
5533 E. Crescent Ave.
Fresno, Calif. 93727

bzzztom@gmail.com
559 355 4221

From:	Paul Lerro
To:	Randall , David A.
Subject:	CEMEX Rockfield Expansion Project (CEMEX Expansion)
Date:	Monday, March 10, 2025 12:11:27 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

To the Board of Supervisors
Fresno County, CA

Gentlemen:

Comment 517-1

Since the CEMEX Rockfield Expansion Project (CEMEX Expansion) was acknowledged, I have considered my own and my neighbors' circumstances and Fresno County's future.

Focusing first on Fresno County's future, if the CEMEX Expansion is approved, it will markedly affect the county's long term economic, cultural and societal future. Approval will terminate all but marginal increases in the county's residential and commercial development on the San Joaquin River going northeastward and likely negatively impact existing developments in the surrounding area to the CEMEX Expansion.

To grasp the San Joaquin River's importance in Fresno County's future development, a review of Bexar County TX's experience can provide an historical prospective. After almost forty years of < 2% annual population growth of San Antinio, from the early 1960s to almost 2000, Bexar County focused on planning related to the San Antonio River in the late 1990s and early 2000s. Over the following two decades, 20002-2020, San Antonio's population surged by almost 3%/year (See: (Ref: San Antonio Metro Area Population 1950-2025 | MacroTrends).

Weighing the potential financial gains and costs from the CEMEX Expansion against risks to the existing regional agricultural economy, impacts on future residential/commercial economies, and maintenance of Fresno County's cultural and societal values, County leaders will have the information needed to make sound decisions. Further, identifying existing and future San Joaquin River uses and their inherent risks and likelihood of success, provides additional information to calibrate river-related economic activity.

Although agricultural production/development currently drives Fresno County's economy, future San Joaquin River real estate and commercial development could become a principal regional economic growth factor stimulating area-wide development, especially given the very different real estate valuations in (nearby) major California population centers. Expanded County river use planning (including financial planning) would signal to potential homeowners and investors that growth is a principal County objective. Alternatively, expanding the County's industrial footprint signals a different direction with quantifiable risks to the large

agricultural economy.

Comment 517-1 Cont.

The San Joaquin River can become an at-risk waterway adjacent to industrial activity or an engine for future county population growth. Fresno County's decision to allow a100 year industrial development adjacent to the San Joaquin River or to seek other potential county growth opportunities follows on the facts that the San Joaquin River currently irrigates over a million acres of farmland and helps feed the largest North American estuary.

Comment 517-2

Regarding the CEMEX Expansion I request that the Fresno County Board of Supervisors seek to limit the potential harm to current area air and water pollution levels, current traffic, and future real estate and commercial development along the San Joaquin River. Additionally, Fresno County Supervisors should be prepared to develop, negotiate and manage alternatives to the CEMEX Expansion.

Comment 517-3

Comment 517-4

Thank you.

Respectfully,

Paul W Lerro
3391 E Via Montiano Avenue
Clovis CA 93619
559.799.4179

From: Ellen Lipp
To: Randall , David A.
Subject: CEMEX
Date: Monday, March 10, 2025 11:04:18 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall

My husband and I own a home in the Woodward Lake Development, which is very close to Friant Road and not far from Cemex operations. Please seriously consider my concerns about the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. I do not support the proposed Expansion Project at the location near Friant Road. Comment 518-1

I am particularly concerned about the air quality, dust emissions, and noise due to mining and large trucks driving to and from Cemex. As we all know, the air quality in Fresno County is very poor in the summer months in particular. In recent years, the air has gotten worse year-round partly because of all of the new residents moving into new developments in Madera. The new residents drive their gas-powered cars and trucks on Friant as they go to and from work and shopping. When we moved to our current home, I could not hear traffic noise from my home. Now I constantly hear this type of noise; it increases my stress level. We used to live in Clovis. We moved to our current home because the traffic fumes and noise from Willow Ave., which was near our backyard, made our backyard unusable. If we had stayed, the air pollution over time could have resulted in cardiovascular disease, respiratory disease, cancer, and more. If this Cemex proposal passes, I fear that I will need to move again to save my health. Comment 518-2 Comment 518-3

I am very disturbed to learn of plans to increase the depth of the mine to 600 feet below the earth's surface. This mining will involve blasting hard rock and then crushing it to make gravel. This type of operation near a city is completely unacceptable. Besides the air pollution and noise, will there be other environmental consequences of blasting hard rock and crushing it? There will be ground vibrations that will affect the quality of life of nearby residents. There may be structural damage. Hence, mining to 600 feet below the surface and blasting hard rock is unacceptable. Comment 518-4

I suggest that CEMEX find a location very far from an urban area. Comment 518-5

I am disturbed that the proposed CEMEX Expansion Project extends mining at the site for 100 years. It is unfair to ruin the air and other aspects of the environment for current residents for a few years. Ruining it for 100 years is very poor planning. In 100 years, CEMEX is likely to be in the middle of a busy metropolitan area. It does not belong there. Comment 518-6

Please do not support the CEMEX Expansion Project.

Sincerely,

Ellen Lipp
--
Ellen Lipp
Professor Emerita of Linguistics
Fresno State

Hello David,

Comment 519-1

I am a longtime resident of Fresno, living in close proximity to Cemex Rockfield's mining operation. Given my deep connection to this community, I am greatly concerned about the potential impacts of their expansion on our neighborhood.

Please find attached a letter detailing my concerns. I urge you to review the points I have outlined and consider the implications this expansion may have on our environment, health, and overall quality of life.

I appreciate your time and attention to this matter and look forward to your response.

Kind regards,

Aaron Lowe

Hello David Randall,

In the following letter, I will review some of my main concerns regarding Cemex's proposed expansion of its mining operations near the San Joaquin River, which presents a critical threat to the region's environmental stability, legal integrity, and economic well-being. Given the company's extensive history of regulatory violations, increased extraction activities will only exacerbate the already significant risks posed by industrial mining. The repercussions of this expansion extend well beyond Fresno County, jeopardizing vital surface and groundwater resources, placing additional strain on aging transportation infrastructure, and destabilizing local economies that rely on sustainable land use.

Comment 519-1 Cont.

Comment 519-2

Moreover, the expansion is not only harmful but also unnecessary. There is already a surplus of gravel available in the region, making this project an unwarranted burden rather than a necessity. Approving Cemex's proposal would represent a short-sighted decision with long-term consequences, saddling communities with environmental degradation and financial liabilities for years to come. This document provides a detailed analysis of the primary risks associated with Cemex's expansion and underscores why permitting this project would be a costly and irreversible mistake for both the public and the environment.

Comment 519-3

Comment 519-4

Surface Water Contamination

Comment 519-5

Cemex's industrial activities will inevitably introduce pollutants into the San Joaquin River, a vital natural resource that traverses multiple counties before merging into the Sacramento-San Joaquin Delta and ultimately reaching the San Francisco Bay. Originating in the Sierra Nevada, the river feeds into Millerton Lake before continuing its journey through Fresno, Madera, Merced, Stanislaus, and San Joaquin Counties. As a result, any contamination from Cemex's Fresno County site will not remain confined to the immediate area but will instead be carried downstream, impacting water quality, ecosystems, and public health across a wide geographical region.

The industrial mining operations conducted by Cemex contribute to water pollution through various means. Sediment runoff from excavation and blasting can cloud the water, obstruct sunlight, and disrupt aquatic ecosystems. Heavy metals and chemicals released from industrial machinery pose a risk of seeping into both groundwater and surface water supplies. Additionally, fuel, oil, and other industrial byproducts are prone to entering the river through surface runoff, particularly during storms or in the event of equipment malfunctions.

Given that the San Joaquin River is a crucial water source supporting agriculture, drinking water supplies, and wildlife habitats, the presence of these pollutants poses a significant threat not only to Fresno and Madera Counties but also to every community downstream. Farmers in Merced, Stanislaus, and San Joaquin Counties depend on the river for irrigation, and contamination could lead to crop damage, soil degradation, and financial losses. Moreover, the Sacramento-San Joaquin Delta, which supplies drinking water to millions of Californians, would face direct consequences from upstream pollution, further amplifying the environmental and public health risks associated with Cemex's operations.

Concerns About Liability for Fresno

Comment 519-6

Beyond the ethical implications of polluting neighboring counties, Cemex also exposes itself to considerable legal liability. There is well-established legal precedent for intrastate lawsuits concerning water pollution and usage, where counties, municipalities, or state agencies have sued upstream polluters to recover damages.

Several significant cases illustrate this legal risk. In *Missouri v. Illinois* (1906), Missouri sued Illinois over sewage pollution contaminating the Mississippi River, setting an early example of downstream entities taking legal action against polluters. Similarly, in *City of Chicago v. City of Milwaukee* (1972), Chicago brought a lawsuit against Milwaukee for discharging pollutants into Lake Michigan, underscoring the legal consequences of upstream pollution affecting downstream communities. More recently, in *Los Angeles County Flood Control District v. Natural Resources Defense Council* (2013), environmental groups successfully sued L.A. County over stormwater pollution, reinforcing the principle that both local governments and industries bear legal responsibility for water contamination.

Even if such lawsuits do not result in a direct ruling against Cemex, they can drag on for years, accumulating excessive legal costs, attracting regulatory scrutiny, and inflicting lasting reputational damage. In many cases, companies facing similar litigation opt to settle out of court, often at great expense, paying millions in environmental mitigation measures, cleanup efforts, and penalties.

This legal exposure is entirely avoidable. Cemex's decision to expand mining operations near the San Joaquin River is not merely an environmental concern but a financial and legal risk that extends well beyond Fresno and Madera Counties. By contaminating a critical, shared waterway, the company could become the target of lawsuits from downstream counties, environmental organizations, and even the State of California.

Rather than inviting costly litigation and shifting the burden of industrial pollution onto taxpayers, Cemex should be required to implement rigorous pollution controls, invest in sustainable water management practices, and assume financial responsibility for any potential environmental damage. Failure to take these precautions could result in prolonged legal battles, significant economic losses, and irreversible harm to one of California's most essential waterways.

Ground Water and Subduction

Comment 519-7

If Cemex is permitted to proceed with its expansion plans, the company's increased reliance on groundwater and the resulting strain on local infrastructure have raised serious concerns. Research published in *Stanford Report* by Stanford University highlights that the San Joaquin Valley has been sinking at an average rate of nearly an inch per year from 2006 to 2022. This phenomenon, known as land subsidence, is primarily caused by excessive groundwater extraction, particularly for industrial and agricultural purposes. In light of this, Cemex's proposal to rely more heavily on groundwater instead of surface water from the San Joaquin River during its expansion presents significant environmental and economic risks.

One of the most alarming aspects of groundwater depletion is that once land subsides due to over-extraction, underground aquifers permanently lose their ability to store water efficiently. Unlike surface water, which can be replenished through seasonal rainfall or managed reservoirs, groundwater recharge is an extremely slow process, often taking decades or even centuries to restore depleted aquifers. When excessive pumping compacts underground structures, the aquifers' capacity to retain water diminishes irreversibly, meaning that even if groundwater extraction were later reduced, the damage would already be done. This leads to long-term water shortages, further straining the region's already fragile water supply.

Comment 519-7 Cont.

Additionally, the uneven rate of land subsidence creates differential settlement, where certain areas sink faster than others, placing tremendous stress on infrastructure. Roads, bridges, pipelines, and buildings suffer costly damages as the land beneath them shifts unpredictably. The *Stanford Report* notes that millions of dollars have already been spent repairing infrastructure damaged by subsidence, and continued over-extraction of groundwater will only intensify the problem. Cracked highways, misaligned bridges, and damaged water conveyance systems not only pose safety hazards but also disrupt critical services, affecting both urban and rural communities.

Given these consequences, Cemex's decision to increase its reliance on groundwater is highly problematic. Beyond accelerating subsidence, this approach imposes an additional financial burden on local governments, businesses, and residents who must bear the cost of repairing damaged infrastructure. Furthermore, as groundwater reserves become increasingly difficult to access, the cost of water is expected to rise, placing further economic strain on industries and agricultural operations that depend on it.

Comment 519-8

The depletion of groundwater in Fresno County also has severe implications for local residents who rely on wells for their water supply. As aquifers shrink, water tables drop, forcing homeowners, farmers, and businesses to drill deeper wells to access water. This process is not only expensive but also unsustainable. The cost of drilling a deeper well can range from tens to hundreds of thousands of dollars, an expense that many rural residents, particularly those who depend on private wells, may struggle to afford. Water insecurity and financial hardship will become more widespread as deeper wells become a necessity rather than an option.

Additionally, deeper wells require more powerful pumps to extract water, increasing electricity costs for well owners. The deeper the well, the more energy is needed to lift water to the surface, further burdening households and agricultural operations with rising expenses. Small-scale farmers who depend on groundwater for irrigation will be especially vulnerable, as they must either invest in costly infrastructure upgrades or face reduced crop yields due to water shortages. These financial pressures could ultimately affect local food production and pricing, creating ripple effects throughout the economy.

Another risk of deeper groundwater extraction is the potential exposure to lower-quality water. Deeper aquifers often contain higher concentrations of naturally occurring contaminants such as arsenic, nitrates, and heavy metals, which pose significant health risks if not properly treated. Effective water treatment systems to remove these contaminants can be prohibitively expensive,

making them inaccessible to many residents. Those who cannot afford such systems may be left with unsafe drinking water, worsening public health concerns in Fresno County.

Comment 519-8 Cont.

As groundwater levels continue to decline, well failures will become more common, leaving some residents without immediate access to water. During past droughts, numerous homeowners and farmers in the Central Valley reported dry wells, forcing them to rely on costly emergency water deliveries or relocate to areas with more stable water supplies. If Cemex and other industries increase their dependence on groundwater, this crisis will only deepen, making it even more difficult for residents to secure affordable and clean water.

Considering these challenges, local and state authorities must take decisive action to regulate groundwater usage more effectively and promote sustainable water management practices. Without intervention, Fresno County will face worsening financial, environmental, and public health crises in the coming years.

Cemex's plan to intensify its groundwater reliance poses a serious threat to both the region's environment and economy. Given the irreversible damage caused by land subsidence and the immense costs associated with groundwater depletion, adopting a more sustainable water management approach is imperative. Instead of accelerating depletion, Cemex should be required to implement robust water conservation strategies, explore alternative sources, and invest in infrastructure that mitigates its impact on subsidence. Failing to do so will only deepen the ongoing crisis, making long-term recovery increasingly challenging and costly.

Transportation Infrastructure.

Comment 519-9

Cemex's proposed expansion also places a significant burden on the region's already strained transportation infrastructure. The company has explicitly acknowledged in its Draft Environmental Impact Report (DEIR) that the planned increase in mining activity will lead to a substantial rise in traffic congestion in the vicinity of the quarry. Furthermore, Cemex has conceded that it has no plans to mitigate the effects of its transportation fleet on local roads. This stance is both irresponsible and unacceptable, as it disregards the very real consequences that intensified industrial traffic will have on public infrastructure, road safety, and the surrounding community.

Heavy commercial vehicles, particularly the massive trucks used to transport mined materials, impose a disproportionately high burden on public roadways compared to personal vehicles. These trucks exert immense stress on pavement, causing accelerated wear and tear, more frequent maintenance requirements, and a drastically reduced lifespan for existing transportation infrastructure. Road surfaces that are not designed to withstand continuous heavy truck traffic deteriorate quickly, leading to potholes, cracks, and structural failures that compromise both safety and drivability. Despite being the primary source of this damage, Cemex has shown no willingness to take financial or logistical responsibility for the inevitable deterioration their fleet will cause. Instead, taxpayers and local government budgets will be left to absorb the costs of road repairs and infrastructure reinforcement, an unfair and avoidable financial burden that should rightfully fall on Cemex.

Comment 519-10

Beyond the degradation of infrastructure, Cemex's increased trucking operations introduce considerable safety risks to local communities. The significant rise in truck traffic—especially from heavily loaded semi-trailers—will create hazardous driving conditions on roads already congested with daily commuters, school buses, local business traffic, and pedestrian activity. Large commercial trucks require much longer stopping distances than standard vehicles, making them particularly dangerous in sudden traffic slowdowns, emergency situations, or when navigating intersections where smaller cars and pedestrians may be present. These risks are further amplified by the fact that the proposed expansion is adjacent to Fresno's largest public park, an area frequently visited by families, cyclists, and joggers. Introducing high volumes of heavy gravel-hauling trucks into a corridor where recreational activities take place is not only reckless but poses a direct threat to public safety—one that Cemex has failed to adequately address in its expansion proposal.

Comment 519-11

Another critical concern is the potential for increased noise pollution, air pollution, and vibrations caused by the continuous operation of Cemex's trucking fleet. The constant movement of large industrial vehicles will contribute to excessive diesel emissions, worsening air quality in a region that already struggles with pollution-related health issues such as asthma and respiratory conditions. Additionally, the vibrations caused by heavy trucks traveling over local roads may weaken nearby structures, causing property damage over time—yet another cost that Cemex refuses to acknowledge or take responsibility for.

Comment 519-12

The failure to mitigate these impacts is not just an oversight but an act of negligence. It would be both irresponsible and unjust for Fresno County to allow this project to proceed without enforcing strict conditions that hold Cemex accountable for its contribution to infrastructure degradation and public safety risks. At a bare minimum, Cemex should be required to contribute to local road maintenance funds, implement traffic management solutions such as designated truck routes and off-peak hauling schedules, and incorporate safety measures to protect pedestrians and commuters from increased accident risks. These requirements are not excessive; they are necessary to ensure that the local community does not suffer from the consequences of a private company's industrial expansion.

Comment 519-13

Ignoring these impacts in favor of corporate convenience sets a dangerous precedent—one that prioritizes private profit over public well-being. If Cemex is allowed to operate without accountability, it will signal to other industries that they, too, can exploit public infrastructure without consequence. To prevent this, Fresno County must take decisive action to protect its roads, its residents, and its long-term economic stability by requiring Cemex to implement meaningful solutions that mitigate harm to transportation infrastructure, traffic flow, and public safety. Anything less would be an abdication of responsibility, leaving the community to bear the costs of a problem they did not create.

Comment 519-14

Fresno Has Enough Gravel

Cemex's request for an extensive new mining expansion along the San Joaquin River is entirely unnecessary, particularly given the overwhelming surplus of gravel already available in Fresno County. While the company argues that additional mining is essential to sustain the region's construction industry, state geological data and independent reports tell a very different story.

Comment 519-14 Cont.

According to an article by Gregory Weaver in *Fresnoland*, Fresno County currently possesses nearly 200% more gravel than it needs for the next 50 years. Furthermore, the Kings River alone contains an estimated 2 billion tons of surface gravel—an astonishing volume that could supply regional demand for the next 500 years without requiring any further mining expansions. These figures make one fact undeniably clear: the demand for gravel has already been met many times over. There is no genuine economic or infrastructural necessity for additional gravel extraction along the San Joaquin River.

If local demand is already secured for centuries to come, what then is the true purpose of Cemex's expansion? The answer is simple—profit. Unlike projects that serve a legitimate public need, such as infrastructure development, job creation, or economic stimulus, this expansion offers no tangible benefit to Fresno County's construction industry, housing market, or workforce. Gravel supply is not a limiting factor for development in the region, making Cemex's proposed expansion not only redundant but also entirely self-serving.

Rather than contributing to the public good, Cemex's mining project would only serve to oversaturate the market with unnecessary gravel, prolonging mining operations without any practical justification. If this project moves forward, it will not make construction materials more affordable, nor will it enhance local infrastructure. Instead, it will allow Cemex to strengthen its corporate hold over an already overstocked resource, ensuring that its operations—and its profits—continue at the expense of the community.

If Fresno were experiencing a genuine gravel shortage, this project might at least warrant some debate. However, given the documented surplus, approving this expansion would amount to little more than reckless environmental destruction. Expanding mining operations near Lost Lake Park would permanently scar a delicate and irreplaceable ecosystem, degrading air and water quality while further polluting one of the most environmentally vulnerable rivers in the country.

The San Joaquin River has already suffered decades of environmental degradation from mining, agriculture, and industrial pollution. In a time when conservation efforts should be prioritized, it is both irrational and irresponsible to continue sacrificing the health of this vital waterway for Cemex's corporate gain. With Fresno's construction industry having no urgent need for additional gravel, there is simply no justification for further exploiting this already stressed natural resource. The region should not be forced to bear the environmental costs of an expansion that serves no greater good beyond the financial interests of a multinational corporation.

Comment 519-15

Cemex is Untrustworthy

Cemex has an extensive and well-documented history of regulatory violations, demonstrating a persistent pattern of noncompliance that raises serious concerns about the company's ability—or willingness—to adhere to future regulatory agreements. According to data from *Violation Tracker* by Good Jobs First, Cemex has committed 667 violations, resulting in a staggering $52,384,115 in penalties. These infractions span critical areas such as environmental regulations, workplace safety, and employment practices, painting a troubling picture of a corporation that repeatedly disregards legal and ethical standards in favor of its business interests.

Comment 519-15 Cont.

A deeper analysis of these violations reveals the extent and severity of Cemex's noncompliance. Environmental violations account for a significant portion of the company's infractions, with 81 recorded offenses totaling $43,564,276 in fines. These violations likely include breaches of air and water quality regulations, failures in hazardous waste management, and other environmentally destructive practices. The sheer magnitude of these penalties suggests that environmental harm is not an occasional oversight but a systemic and recurring consequence of Cemex's operations. Rather than implementing long-term corrective measures, the company appears to accept environmental fines as a cost of doing business.

Equally concerning is Cemex's track record of workplace safety violations. With 577 citations amounting to $6,356,849 in fines, the company has demonstrated a repeated failure to uphold even the most basic safety standards, putting its employees at serious risk. The high frequency of these violations indicates a failure to prioritize worker protection despite multiple penalties. If Cemex consistently neglects employee safety, it is reasonable to question its commitment to upholding environmental regulations or fulfilling mitigation promises associated with its mining expansion.

Beyond safety and environmental infractions, Cemex has also been penalized for employment-related violations, facing nine penalties totaling $2,462,990. These infractions likely involve labor law breaches such as wage theft, discrimination, or failure to comply with fair labor standards. While this category has fewer recorded offenses, it adds another layer to the company's troubling history of noncompliance. The recurrence of legal issues across multiple regulatory domains suggests that Cemex does not merely make occasional mistakes but rather operates within a corporate framework that prioritizes profitability over regulatory adherence.

This history should not be dismissed as a collection of isolated incidents. Instead, it should be understood as part of a broader, systemic issue within Cemex's corporate culture—one in which legal violations and financial penalties are seen as minor obstacles rather than serious obligations requiring corrective action. A company with such an extensive record of noncompliance has demonstrated time and again that it prefers to pay fines rather than invest in meaningful reforms. This raises a crucial question: if Cemex has continuously ignored regulatory requirements despite facing significant financial penalties, what assurance does the public have that it will behave differently when expanding its Rockfield quarry?

Regulatory agreements are built on the foundation of trust—trust that a company will adhere to mitigation requirements, abide by environmental laws, and operate responsibly. However, Cemex's history suggests that even when faced with consequences, it prioritizes corporate interests over compliance. If the company is granted permission to expand its mining operations, there is little reason to believe it will uphold its environmental obligations or implement the necessary safeguards to prevent harm.

Past behavior is often the best predictor of future actions, and Cemex's track record strongly indicates that it may either fail to follow mitigation requirements or cut corners to maximize profits. The risk of environmental degradation, increased pollution, and safety hazards is simply too great to ignore. Given Cemex's well-documented history of regulatory violations, it is neither reasonable nor responsible to grant the company an expansion without demanding substantial,

enforceable commitments to transparency, accountability, and environmental stewardship. Anything less would be a gamble with the well-being of the community, the workforce, and the fragile ecosystem of the San Joaquin River.

Comment 519-15 Cont.

Conclusion

Comment 519-16

Cemex's proposed expansion offers no legitimate public benefit, provides no meaningful economic advantage to Fresno's residents, and directly contradicts well-documented geological data that confirms an abundant gravel supply for centuries. The only entity that stands to gain from this project is Cemex itself—at the cost of environmental degradation, infrastructure damage, public health risks, and the financial burden placed on local communities. This expansion is not about meeting a genuine demand for construction materials; it is about maximizing corporate profits while offloading the consequences onto taxpayers, residents, and the environment.

If this project is approved, it will not be because Fresno County lacks gravel or requires new mining operations to sustain its development. It will be because corporate influence has been allowed to override the public interest, enabling Cemex to exploit the region's resources while shifting the long-term costs onto the community. Furthermore, Cemex's history of noncompliance and regulatory violations should serve as a major red flag. Past behavior is a strong predictor of future actions, and Cemex has shown that it is more inclined to pay fines than implement meaningful reforms. Granting a company with this kind of record expanded mining rights near one of California's most fragile waterways is not just irresponsible—it is a direct invitation for further environmental harm and regulatory neglect.

The environmental consequences of this expansion would be severe and irreversible. Cemex's increased reliance on groundwater would accelerate land subsidence, a problem that has already caused significant infrastructure damage across the San Joaquin Valley. Sinking land not only threatens roads, bridges, and pipelines but also permanently reduces the capacity of underground aquifers, exacerbating long-term water scarcity. At a time when sustainable water management is more critical than ever, allowing an industrial operation to deplete groundwater supplies for an unnecessary mining project is reckless and short-sighted.

Additionally, the expansion would introduce heightened safety risks and financial burdens for the community. These vehicles will place enormous strain on local roads, accelerating deterioration and leading to costly repairs—expenses that Cemex has openly stated it does not intend to mitigate. The presence of more gravel-hauling trucks in an area adjacent to Fresno's largest public park also raises significant public safety concerns, particularly for pedestrians, cyclists, and families who frequent the area.

If Fresno County approves this expansion, it will be setting a dangerous precedent that prioritizes corporate convenience over environmental responsibility, public safety, and long-term economic stability. The decision to allow this project to proceed would signal that industrial polluters can continue to exploit public resources with little regard for the lasting damage they cause. Rather than allowing a multinational corporation to dictate land use policy, local authorities must stand

Comment
519-16 Cont.

firm in protecting the community's interests, rejecting short-term corporate gains in favor of sustainable environmental stewardship and responsible resource management.

This expansion is unnecessary, destructive, and entirely misaligned with Fresno County's long-term needs. Local decision-makers must reject it outright and instead commit to policies that prioritize conservation, infrastructure integrity, and public well-being over corporate profit. The San Joaquin River has already suffered decades of environmental abuse—approving another extractive project that will further degrade this critical waterway would be an irreversible mistake. Instead of permitting more industrial destruction, Fresno County should focus on sustainable development strategies that protect natural resources, safeguard public health, and uphold the best interests of future generations.

Kind Regards,

Aaron Lowe

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From: miyoung
To: Randall , David A.
Subject: Concerns about CEMEX
Date: Monday, March 10, 2025 3:21:48 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

To whom it may concern,

Comment 520-1

Cemex's proposed expansion of its mining operations near the San Joaquin River raises significant concerns about environmental degradation, legal liabilities, and economic burdens on the surrounding communities. As an industrial operation with a well-documented history of regulatory violations, Cemex's intensified mining activities will have far-reaching consequences that extend beyond Fresno County. The expansion poses threats to surface and groundwater resources, transportation infrastructure, and local economies, all while being unnecessary given the existing surplus of gravel in the region. This document examines the key risks associated with Cemex's expansion and why its approval would be a costly mistake for both the environment and the public.

Comment 520-2

Cemex's operations will inevitably introduce pollutants into the San Joaquin River, a shared natural resource that flows through multiple counties before reaching the Sacramento-San Joaquin Delta and ultimately the San Francisco Bay. Given the river's extensive reach—beginning in the Sierra Nevada, feeding into Millerton Lake, and then flowing through Fresno, Madera, Merced, Stanislaus, and San Joaquin Counties—any contamination originating from Cemex's site in Fresno County will not remain localized. Instead, pollutants will travel downstream, affecting water quality, ecosystems, and public health across a vast region.

Industrial mining operations like Cemex's generate multiple sources of water pollution, including:

- Sediment runoff from excavation and blasting, which can cloud water, block sunlight, and harm aquatic life.
- Heavy metals and chemicals from industrial machinery, which can seep into groundwater and surface water supplies.
- Fuel, oil, and other industrial byproducts that contaminate the river through surface runoff during storms or equipment failures.

Because the San Joaquin River serves as a critical water source for agriculture, drinking water, and wildlife habitats, these pollutants pose a serious risk not just to Fresno and Madera Counties, but also to every downstream community. Farmers in Merced, Stanislaus, and San Joaquin Counties rely on river water for irrigation, and contamination could lead to crop damage, soil degradation, and financial losses. Additionally, the Sacramento-San Joaquin Delta, which provides drinking water to millions of Californians, would be directly affected by upstream pollution.

Comment 520-3

Beyond the ethical concerns of polluting neighboring counties, Cemex also exposes itself to significant legal liabilities. There is legal precedent for intrastate lawsuits over water pollution and usage, where counties, cities, or state agencies sue upstream polluters for damages. Key

cases, such as Missouri v. Illinois (1906) and Los Angeles County Flood Control District v. Natural Resources Defense Council (2013), illustrate the financial and reputational risks Cemex faces should its operations lead to downstream pollution.

Comment 520-3 Cont.

Furthermore, Cemex's expansion plan includes increased reliance on groundwater, exacerbating the already dire issue of land subsidence in the San Joaquin Valley. Studies from Stanford University indicate that the valley has been sinking at nearly an inch per year due to excessive groundwater extraction. Once aquifers lose their capacity to store water efficiently, replenishment becomes nearly impossible, leading to long-term water scarcity and costly infrastructure damage. This not only threatens agricultural sustainability but also burdens local governments with expensive road and bridge repairs due to uneven land sinking.

Comment 520-4

Cemex's expansion will also place an immense burden on local transportation infrastructure. In its Draft Environmental Impact Report (DEIR), Cemex acknowledged that the proposed increase in mining operations would significantly heighten traffic congestion in the area. However, the company has made it clear that it does not intend to mitigate the effects of its transportation equipment on local roads.

Comment 520-5

Heavy commercial vehicles, particularly large trucks used for hauling mined materials, exert extreme stress on roadways, accelerating deterioration and increasing maintenance costs. Rather than taking financial or logistical responsibility for these damages, Cemex's refusal to contribute to road maintenance shifts the burden onto taxpayers and local governments. Additionally, the increased truck traffic near Fresno's largest public park introduces heightened safety risks, particularly for pedestrians, cyclists, and families frequenting the area.

Comment 520-6

Comment 520-7

Cemex's push for a massive new mining expansion along the San Joaquin River is entirely unnecessary given the overwhelming surplus of gravel already available in Fresno County. According to geological surveys, the county has nearly 200% more gravel than it needs for the next 50 years. Additionally, the Kings River alone contains 2 billion tons of surface gravel, a volume sufficient to meet regional demand for the next 500 years without requiring further mining expansions.

Comment 520-8

These figures highlight the redundancy of Cemex's proposed expansion. With demand for gravel already secured for centuries, the only entity that stands to benefit from this project is Cemex itself. Unlike projects that fulfill a clear public need—such as infrastructure development or job creation—this expansion serves no meaningful purpose for the community. Instead, it would oversaturate the market with an unnecessary resource while causing permanent environmental damage to an already fragile ecosystem.

Cemex has a well-documented history of violating regulations, suggesting a persistent pattern of noncompliance. According to data from Violation Tracker, Cemex has committed 667 violations, accumulating over $52 million in penalties. These infractions span multiple areas, including environmental regulations, workplace safety, and employment practices, demonstrating a broad and systemic disregard for legal and ethical standards.

Comment 520-9

A closer examination of these violations highlights the extent of the issue:

- Environmental Violations: Cemex has been penalized 81 times, paying $43.5 million in fines for environmental infractions, including air and water quality violations.
- Workplace Safety Violations: The company has been cited 577 times, resulting in $6.3 million in fines, indicating a consistent failure to maintain proper workplace conditions.

- Employment-Related Violations: Cemex has faced 9 penalties totaling $2.4 million for labor law infractions such as wage theft and unfair employment practices.

Comment 520-9 Cont.

This pattern of repeated violations suggests that Cemex prioritizes business interests over regulatory compliance, often opting to pay fines rather than implementing meaningful reforms. If Cemex is granted permission to expand its Rockfield quarry, there is little reason to believe it will uphold mitigation requirements, given its track record of noncompliance.

Comment 520-10

Cemex's proposed expansion is fraught with environmental, legal, and economic risks. By intensifying mining operations near the San Joaquin River, the company threatens water quality, accelerates groundwater depletion, burdens local infrastructure, and endangers public safety. Additionally, the expansion is entirely unnecessary given Fresno County's existing surplus of gravel, making the project little more than an exercise in corporate profiteering at the community's expense.

Cemex's extensive history of regulatory violations further calls into question its ability to responsibly manage an expanded mining operation. Given the foreseeable environmental destruction, financial burdens on taxpayers, and legal liabilities, approving this expansion would be an irresponsible decision. Instead, Cemex should be required to implement stringent pollution controls, invest in sustainable water management practices, and take financial responsibility for infrastructure maintenance. Failing to do so will result in long-term damage that far outweighs any potential economic benefits of the project.

Fresno County must prioritize environmental sustainability, public health, and economic fairness over corporate interests. Allowing Cemex's expansion to proceed without accountability would set a dangerous precedent, jeopardizing the future of the region for generations to come.

Thank you,

Miyoung Lowe

From:	Kim Lucero
To:	Randall , David A.
Cc:	sweaver@riverparkway.org
Subject:	Comments on CEMEX DEIR
Date:	Monday, March 10, 2025 11:58:03 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

As we were driving up to Millerton the other day, we noticed an area along Friant Road and wondered what was going on or what was being built. Was it an extension for Woodward Park or more areas to enjoy nature. We then came across an article regarding the mining, drilling, and blasting along the San Joaquin river. From my understanding the hole is going to be twice as deep as Millerton lake and close proximity to the river bank. This will cause chemical pollution into our environment and water resources, which not only affects our wildlife but our everyday life. I wonder why they want to pursue our San Joaquin river, do we not have enough resource gravel mining available NOW!!! With the estimated 400K trucks being sent along Friant road annually will further impact our air quality, our current air quality now is one of the worst in California, this will definitely add to it. We should be adding more biking, hiking, and walking trails for our families to enjoy nature, not a massive hole and pollutants in the air and our water supply. I Live in Clovis and I thought it was "Gateway to the Sierras", not "Gateway to the Polluted Sierras". This project will ruin the environment and our everyday life. I have been working for the Clovis Unified School District for over 15 years and my husband is a retired Fresno Police Officer who served for 25 years, who gave his oath to serve and protect our community and families. Living here for over 30 years and raising a family here, this is just so upsetting that our supervisors are considering this project, There's no need for this project, aren't we here to protect our future for our kids and their kids? Reconsider approving this project!

Kim and Marty Lucero

Comment 521-1

Comment(s) 521-2 521-3

Comment 521-4

From: Mandy macias
To: Randall , David A.
Subject: Comments on the Rockdale CEMEX EIR
Date: Monday, March 10, 2025 5:55:19 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good afternoon. My comments are of my own opinion and based on what available documentation I could access. Comment 522-1

As a member of the greater local tribal community, and specifically an enrolled member of the Dunlap Band of Mono Indians, located in eastern Fresno county, I have concerns for the upcoming renewal. The published documents were too large to access or download for my personal computer. Of what I could review regarding tribal outreach and impacts, it appeared to be lacking. And for an endeavor such as a 100 year extension, I would hope your efforts were done by someone with expertise of tribal outreach and political experience. While there were public notices I saw no efforts for tribal meetings or forums. With the recognition of tribal sovereignty and knowledge of unique sensitive material, a public forum would not be the anticipated or appropriate venue to discuss tribal concerns. Any data secured prior to 10 years ago is outdated by recent discovery trends, and as constantly evolving governments, the leadership changes with elections and political interests. Your outreach should reflect accurate outreach contacts and should be conducted in good faith, not as an action to be accounted for. I don't recall outreach directly and found out about the proposal through networks. An archaeological inventory would not be inclusive of cultural resources such as life way practices, spiritual significances, and genealogical and ancestral knowledge. The San Joaquin River is a geographical marker, a life sustaining resource, and a place of origin for tribal communities. It is a cultural landscape and habitation place with many tribal resources buried by the ever changing water flow created by the Friant Dam. A pedestrian survey and superficial inventory would not reflect an accurate exam of the landscape. Comment 522-2

If you failed to reach tribal member in your outreach efforts I believe it to be in error. Perhaps your list of contacts is outdated and does not reflect the current administrations, or reflects individuals that are no longer with us. This is a common error and is repeated regularly by agencies and businesses attempting tribal outreach without knowledge of the community. There are several local organizations and agencies with specific expertise that could have assisted, especially since the area of the quarry is along the river, a well known tribal resource, adjacent to recorded resources of local significant, and the trend for tribal interest in quarry projects has been shown to be extensive in the past. Comment 522-3 Also, to be clear, while the environmental comment period may be coming to a close, the discovery or exposure, as well as consultation with tribes is considered ongoing due to the potential to encounter previously unidentified resources as the project progress. This should be noted in the documents. Comment 522-4

I believe cultural resources or archaeological resources will be encountered and suggested you consider having staff with specific archaeological expertise available to identify such resources from general river rock. I'm also suggesting you consider incorporating local tribal archaeological monitors at the onset of any new excavation.

Comment 522-5

Regarding the extension of the permit for 100 years, I feel this is too long of a period. This time should be reduced to 25 years at the most.

Comment 522-6

In summary, your tribal consultation seems lacking, the inventory is not sufficient, the cultural landscape where the project is located is significant, the documents were not accessible, and the permit window is too longs.

Comment 522-7

Regards -
Mandy Macias

From:	Florence Maly
To:	Randall , David A.
Subject:	CEMEX Rockfield Expansion DEIR
Date:	Monday, March 10, 2025 3:39:45 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 10, 2025

David Randall, Senior Planner
County of Fresno
Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear Mr. Randall,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the Cemex Rockfield Expansion Project. I believe there are significant environmental, cultural and community impacts associated with this project. I urge you to review carefully all impacts and address significant flaws in the DEIR before even considering any approval. Comment 523-1

The San Joaquin River is a precious resource that we must honor and revere and begin to correct the damage remaining from past activities, not create more damage and mis-use of this abused river.

Specific concerns I have are as follows: Comment 523-2

!. Cumulative Impact Neglect:
The DEIR fails to adequately address the cumulative impacts of the project when combined with other existing and planned projects in the area. While the DEIR should address impacts related to water quality, noise levels, air pollution, and traffic, it does not offer specific data. It should demonstrate specific requirements to avoid or lessen the cumulative problem in relation to air pollution, a cumulative impact by its nature. CEQA Guidelines, Section15130(a) mandates that EIRs discuss cumulative impacts when they are "cumulatively considerable"; failure to adequately assess could be a violation of CEQA.

2. Impacts on the San Joaquin River Watershed: Comment 523-3
Wildlife: the DEIR does not adequately analyze potential impacts of blasting on wildlife. The examples of habituation of wildlife to mining operations are for surface mining, not deep rock proposed here. Furthermore, what impact would there be to aquatic life in the river, especially the Chinook Salmon. The document cites old studies conducted in Alaska that are unlike the San Joaquin River environment.
Critical Habitat: The document has a "Mischaracterization of a regulated habitat. The Waste Wash Conveyance Ditch at the Plant site qualifies as a stream, and diverting or obstructing its natural flow, altering its bed, channel or bank; or depositing any material into this feature would be subject to provisions of California Fish and Wildlife Code Section 1600. Comment 523-4
Surrounding Land Uses: Cemex is currently encroaching on a designated Ecological Reserve, with no apparent measures to halt or mitigate this activity. Comment 523-5
Geological Issues: There is limited scope on the stability of the pit wall. The stated mitigation of "monitoring" the wall is completely ridiculous. There are no measures for a Comment 523-6

collapse of the wall between the pit and the river, which could have the potential to dump toxic water and even equipment into the river. There is also limited discussion of disturbing the underlying soil/rock stability with blasting; and on the impact of operations on existing groundwater levels and domestic wells.

Comment 523-6 Cont.

3. Tribal Resource and Cultural Resources:
There is a lack of transparency of impacts on Tribal Cultural Resources due to confidentiality concerns.. The DEIR references a Cultural and Paleontology Resource Inventory, but it is not included as an appendix. How do we know that the project has adequately consulted with local tribes and taken appropriate steps to protect culturally significant sites, raising questions of environmental justice and respect for Native Americans, specifically the original inhabitants of the region along the San Joaquin River, the Dumna.

Comment 523-7

4. Cemex Corporation:
Safety record: Their human and environmental safety records are available and they are very poor. There seems to be no Corporate responsibility for protecting their employees, the environment and their surrounding communities.

Comment 523-8

Restoration: What assurance do we have that restoration work will ever be done? There is mention that the site will look better at the end of the 100 year project with the planting of some trees. This is ludicrous. Restoration starts before the project starts, and continues throughout the life of a project. Cemex seems to be ignoring this.

Comment 523-9

Funds: Cemex states they cannot mitigate many of the traffic and roadway issues because they do not have the funds. This is also ludicrous. Cemex is a multi-international firm worth billions. Vulcan Materials paid for traffic improvements in Madera County as a condition for their Austin Quarry. Hold Cemex to the same standard.

Comment 523-10

Given these concerns, and many more, I urge the agency to require Cemex to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

Comment 523-11

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter. It is time to heal our river.

Sincerely,
Florence Maly

From: Mel Mark
To: Randall , David A.
Subject: CEMEX Rockfield Comments
Date: Monday, March 10, 2025 6:22:05 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David,

I appreciate the opportunity to provide comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant environmental and community impacts associated with this project, I have several concerns that must be addressed before any approval moves forward.

Comment 524-1

1. **Impacts on the San Joaquin River Watershed**
   The expansion site is located within the San Joaquin River floodplain, a critical water source for the region. Increased mining activities could further degrade water quality by introducing sediment, pollutants, and potential contaminants into the river system. Additionally, changes in groundwater levels could disrupt the hydrology of the area, affecting both wildlife and agricultural water users downstream. The DEIR must provide a more thorough analysis of these risks and include stronger protections to prevent harm to the watershed.

2. **Air Quality and Dust Emissions**
   The project will generate substantial dust and particulate matter, exacerbating air quality issues in an area that already experiences high levels of pollution. This is particularly concerning for vulnerable populations, including children, the elderly, and those with respiratory conditions. The DEIR should require stricter dust control measures, increased air quality monitoring, and a plan to minimize diesel emissions from equipment and transportation.

Comment 524-2

3. **Biological Resource Impacts**
   The San Joaquin River Parkway provides critical habitat for a wide range of species, including protected and sensitive wildlife. Expanding mining operations could lead to habitat destruction, displacement of wildlife, and disruptions to ecological connectivity. The DEIR must ensure that habitat restoration and mitigation efforts are sufficient to offset these impacts, with clear commitments to long-term monitoring and preservation of key biological resources.

Comment 524-3

4. **Traffic and Noise Concerns**
   The project is expected to increase heavy truck traffic along local roads, raising

Comment 524-4

concerns about road safety, noise pollution, and wear and tear on infrastructure. Increased traffic will also contribute to greenhouse gas emissions, further impacting air quality. The DEIR should outline more robust traffic management strategies, noise mitigation measures, and alternatives to reduce the project's transportation footprint.

Comment 524-4 Cont.

5. **Cumulative Environmental Effects**
   When considered alongside existing and proposed development projects in the area, the CEMEX expansion could contribute to significant cumulative environmental degradation. The DEIR must take a comprehensive approach to evaluating these combined impacts, rather than assessing the project in isolation. This includes examining long-term effects on water resources, biodiversity, air quality, and climate resilience.

Comment 524-5

Given these concerns, I urge the agency to require CEMEX to conduct further analysis, strengthen mitigation measures, and fully explore less harmful alternatives. Public transparency and accountability are essential to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is prioritized in this decision-making process.

Comment 524-6

I'm sure you have received lots of comments with sentiments similar to mine, allow me to add some personal anecdotes: I am a lover of wildlife, especially birds, and frequent Ball Ranch and Lost Lake several times a week. We are blessed here with the location the valley provides below the Sierras. I urge you to go out yourself and enjoy watching these delicate species we are so very lucky to cohabitate with. It is our duty to be good stewards of the land and ensure future enjoyment and prosperity for generations to come.

Thank you for your time and consideration. I look forward to your response and continued discussion on this important issue.

Sincerely,
Mel Mark

From: Allison Martinez
To: Randall , David A.
Subject: DEIR for CEMEX Rockfield Expansion
Date: Monday, March 10, 2025 12:02:25 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good morning David,

Comment 525-1

Thank you for the opportunity to submit my thoughts about the potential CEMEX Rockfield Expansion Project.

Our family has lived in the Fresno area for decades and utilizes the river for exercise and enjoyment. I am grieved our County Supervisors disregard the negative impacts of the current gravel production operation by extending their permit. Additionally, I am seriously concerned about the potential expansion and the effect it will have on the river itself along with the surrounding area and impact on we homeowners along the Friant Road corridor.

Comment 525-2

I urge your agency to require CEMEX to provide additional analyses, enhanced mitigation measures, and less harmful alternatives. The long-term health of the San Joaquin River watershed and surrounding communities' health and enjoyment is a most critical issue which should stand at the forefront of any decision.
Thank you for your time and consideration, I look forward to your response. Sincerely,
Allison Martinez
1905 E Hogan Ave
Fresno, CA 93730

Yours, O Lord, is the greatness and the power and the glory and the victory and the majesty, for all that is in the heavens and in the earth is yours. I Chronicles 29:11

From: Crystal Martinez
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Monday, March 10, 2025 3:36:09 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 10, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to communicate my concerns about Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project jeopardizes the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 526-1

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. Our water is vital to life. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

Comment 526-2

What are DEIR's solutions for protecting water?

The DEIR must identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

What is CEMEX's plan if major flooding occurs?

What is the plan if flooding breaches the levee and captures the quarry pit?

Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 526-3

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 526-4

Will DEIR evaluate the groundwater data at different flow rates?

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

Comment 526-5

What is the DEIR's timeframe and exact location of the trail to be constructed?

What is the DEIR's plan for proposed trails to meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public

access?

Comment 526-5 Cont.

How will the DEIR hold CEMEX responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project?

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated.

Comment 526-6

Will the DEIR fully analyze these impacts and identify appropriate mitigation measures for the impacts?

The DEIR identifies several unavoidable negative impacts.

The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.

Comment 526-7

Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements.

Comment 526-8

How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards?

The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario.

Comment 526-9

Why was this approach taken instead of analyzing the full environmental cost of continued mining?

One of my biggest concerns is air quality impacts. Our quality of life will be impacted negatively. The DEIR mentions an increased cancer risk. This is not acceptable.

Comment 526-10

Another area of concern is the threat to wildlife. The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Comment 526-11

How will the DEIR comply with existing regulations for protecting our wildlife?

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines.

Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Will this section be rewritten and recirculated for public comment?

Comment 526-12

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public

review before the finalizing the environmental impact report for the project.

Thank you for your attention to this matter.

Sincerely,

Kevin and Crystal Martinez
661 E. Teal Circle
Fresno 93730

From:	Brett Mason
To:	Randall , David A.
Subject:	CEMEX Project Comment
Date:	Monday, March 10, 2025 10:39:45 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

All Concerned,

I want to register my reservations concerning the approval of a 100-year lease to the CEMEX corporation that will certainly result in the degradation of an already threatened waterway. Please respond to the following questions: Comment 527-1

1. How does the CEMEX corporation intend to confine the waste of their operation and prevent it from contaminating the San Joaquin river? Comment 527-2
2. What measurable standards are put into the lease for prevention of damage to the waterway and what options for redress does the county have if CEMEX does not abide by those standards? Comment 527-3
3. How much tax revenue is expected from the 100-year lease? Comment 527-4
4. What campaign contributions has the CEMEX corporation made to supervisors who will be voting on the issue?
5. What positive impacts (besides tax revenue) are expected for Fresno county residents? Comment(s) 527-5 527-6
6. What other locations have been studied as alternatives to expanding the current site near Ball Ranch?

Thank you for you time and attention.

--
Respectfully,
Brett A. Mason
209.628.8585

From: Sylvia Mata <Tatianna123@earthlink.net>
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield
Date: Monday, March 10, 2025 3:34:22 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 10, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality,public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all. Comment 528-1

Impacts on Water Quality & the San Joaquin River Comment 528-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

* What is CEMEX’s plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit? Comment 528-3
* Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Additionally, the groundwater data used for the DEIR was conducted duringa low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites. Comment 528-4

Impacts on the San Joaquin River Parkway & Recreation Comment 528-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

Comment 528-5 Cont.

* The DEIR should identify the timeframe and exact location of the trail to be constructed.
* The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan’s requirement for a 300-foot buffer between mining operations and public access
* The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 528-6

Lack of Mitigation for Visual,Traffic, and Air Quality Impacts

Comment 528-7

The DEIR identifies several unavoidable negative impacts, including:

* Scenic Degradation: The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
* Traffic Congestion: Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on how mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 528-8

* Air Quality: The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 528-9

Threats to Wildlife

Comment 528-10

The DEIR fails to adequately analyze the impact on species like Swainson’s hawk, Tricolored blackbird, Burrowing owl, and Western red bat.Drilling, blasting, and excavation could disrupt nesting and migration patterns,but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers,and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Comment 528-10 Cont.

Conclusion

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Comment 528-11

Thank you for your time and consideration.

Sincerely,

Sylvia Mata
9360 N Blackstone Ave
Fresno, CA 93720

From: Tess McClellan
To: Randall , David A.
Subject: Comment on Proposed CEMEX Expansion
Date: Monday, March 10, 2025 1:52:26 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear David,

As a Fresno resident, Central Valley Camera Club leader, and conservationist, I urge you to consider alternatives to the proposed CEMEX Rockfield Expansion project.

Comment 529-1

The San Joaquin River has suffered greatly already and deserves our protection, especially with ongoing drought and pollution concerns. Our air quality in the valley has also been continually evaluated as extremely harmful, and further mining and development will only increase this harm despite assurances from CEMEX to the contrary.

Comment(s) 529-2 529-3

The area around the proposed expansion is important to Fresno's biodiversity and it is already encroaching on the Environmental Reserve. I am an avid birder and these habitats will face destruction and pollution with far-reaching consequences we cannot yet even fully understand. For example, the Swainson's Hawk breeding grounds within a half mile of the proposed development have not been fully evaluated for threat. Ball Ranch and Lost Lake are two of our county's best places for families to spend time in nature, and the noise, pollution, and increased traffic will have a negative impact on these beautiful parks. These are also some of the only safe, car-free areas where locals can exercise and relax in relative peace and quiet. Mental and physical health of our residents will be impacted.

Comment(s) 529-4 529-5

Comment 529-6

Our local camera club, Central Valley Camera Club, has many photographers who also use the beauty of this area for client photoshoots, especially for family portraits. While this may seem trivial to some, it would directly affect the income of local photographers, not to mention their artwork. Ball Ranch is also home to some of the best birding photography Fresno offers. Both Lost Lake and Ball Ranch are wonderful locations for group photo walks and are used frequently by our local Audubon Society as well.

Comment 529-7

We do not have many true green spaces left in the county due to non stop housing expansion and development, let alone the traffic deaths wildlife face (especially along Friant road). Increased traffic means increased threat for countless species. Rarely do I see Friant road free of roadkill from the already present traffic. The blasting from the mine may also drive wildlife closer to the housing developments and traffic.

Comment 529-8

Given also the proposed length of the expansion project, it is hard to accurately predict what other harms could be done within *one hundred years.* Our children and grandchildren will suffer with the potential consequences of this expansion.

Comment 529-9

Furthermore, the Environmental Impact Report also highlights the relative low economic regional benefit the project would bring to Fresno. It is hard to justify the proposed expansion given all of these concerns and many more. Please consider at the very least an alternative location, or if this project is at all in any Fresno resident's best interest, or just benefits CEMEX's corporate ownership.

Comment 529-10

Sincerely,
Tess McClellan, Staff Member of Central Valley Camera Club, Member of Queers Outside Hiking Club
3/10/25

March 10, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 530-1

Impacts on Water Quality & the San Joaquin River

Comment 530-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 530-3

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 530-4

Impacts on the San Joaquin River Parkway & Recreation

Comment 530-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 530-6

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 530-7

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 530-8

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 530-9

Threats to Wildlife

Comment 530-10

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and

excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Comment 530-10 Cont.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 530-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,

Donna McCloskey

3031 Redington

Clovis, CA 93619

From: Gracie McKesson
To: Randall , David A.
Subject: NO MINING!!!
Date: Monday, March 10, 2025 8:01:14 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

=3/10/2025

David Randall, Senior Planner
County of Fresno
Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. Comment 531-1

1. Impacts on the San Joaquin River Watershed

I believe that all of our water ways and green spaces should be protected from any and all forms of emissions and mining projects.

2. Air Quality and Dust Emissions Comment 531-2

The Central Valley is already heavily impacted by the bad air quality and pollution that settles in our valley. There is no need to make it worse and increase the numbers of youth asthma but ejecting mining pollution into our air.

3. Biological Resource Impacts Comment 531-3

Fresno and the surrounding areas are blessed to be so abundant of biological diversity. It is our duty as patrons of this land to protect our wildlife and our environment.

4. Traffic and Noise Concerns Comment 531-4

High levels of noise and traffic are scientifically proven to be adverse to health. Why negatively affect the quality of life of those living in surrounding areas?

5. Cumulative Environmental Effects Comment 531-5

These green spaces affected by the mining are fundamental to the health and wellness of not only the wildlife but to our human communities. Access to clean and safe natural spaces are vital for positive mental health, family bonding, and community development.

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

Comment 531-6

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,
Gracie McKesson

March 10, 2025.

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall:

I am writing regarding the CEMEX proposal to expand its mining operation on the San Joaquin River. Comment 532-1

I am opposed to this project for a number of reasons:

(1) CEMEX, a Mexican company, is proposing this type of mining on the San Joaquin because it is illegal in Mexico.

(2) The project will go to a depth of 600 feet, which will destroy that part of the river both for recreation and wildlife habitat. Comment 532-2

(3) The use of blasting for the mining will create intolerable noise for people within miles of the site, frighten pets and wild animals, and ruin the water quality. Comment 532-3

(4) The mining will further prevent access to the river by Fresno area residents--there is already very little access to the river. We need more access to the river, not less. Comment 532-4

(5) As the mining is proposed to last 100 years, it will inflict its damage for generations to come, which will have no opportunity to protect themselves and their environment from the project. Comment 532-5

(6) It appears that the current Environment Impact Study has severely underestimated or simply ignored the extreme deleterious effects of this project on Fresno Air Quality. Comment 532-6
I am deeply concerned about the extremely serious degradation of our Fresno air quality that this project would cause. The use of explosives to mine rock sends an enormous amount of rock duct into our air, as well as the airborne chemical products of the explosives used. There is no way to mitigate that result, so the blasting must not be allowed to occur.

(7) Fresno already has some of the worst air quality in the United States. My neighborhood has families with young children, and it's very well known that poor air quality has negative effects on the brain development of children such that it lowers their IQ's.

So I respectfully request that you all in your power to reject any proposal of CEMEX to continue its mining of the San Joaquin River in order to protect the lives of those of us who live in the wide Fresno Area.

Comment 532-7

Thank you for your time and consideration.

Sincerely,

Gloria Medina-Sancho
10676 N. Coronado Circle.
Fresno, CA 93730

From: Dinora Mendoza
To: Randall , David A.
Subject: Opposition to the CEMEX Rockfield Expansion Plan
Date: Monday, March 10, 2025 9:29:58 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am writing to formally express my opposition to the proposed CEMEX Rockfield Expansion Plan as I have serious concerns regarding its potential negative impacts on the local environment, community, and public health. Comment 533-1

First, I would like to highlight the environmental concerns associated with the expansion. The increased extraction of natural resources and the expansion of industrial activities at the Rockfield site could lead to significant ecological damage. The loss of wildlife habitat, the risk of air and water pollution, and the disruption of local ecosystems are all significant issues that need to be carefully considered. I believe the potential environmental consequences far outweigh the benefits that this expansion may bring.

In addition to environmental concerns, the expansion could also negatively affect the well-being of local residents. The increased traffic, noise, and dust from quarrying operations would significantly disrupt the peace and quality of life for people living nearby. Furthermore, the potential health risks associated with exposure to airborne particulates and other pollutants are a real concern that must be taken seriously. Comment 533-2

Finally, I urge you to consider the long-term sustainability of the region. The proposed expansion risks compromising the natural landscape and resources for future generations. While industrial growth is important, it should not come at the expense of preserving the health of the local environment and community. Comment 533-3

I respectfully request that you reconsider moving forward with the Rockfield Expansion Plan and explore alternative solutions that prioritize both economic development and environmental protection. Engaging with the local community and conducting more thorough environmental impact assessments could help to ensure that the needs of both industry and the public are met in a balanced and responsible manner. Comment 533-4

Thank you for your attention to this matter. I look forward to your response.

Sincerely,

Dinora Mendoza

From: Dale Merrill
To: Randall , David A.
Subject: CEMEX Proposal
Date: Monday, March 10, 2025 2:54:38 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 534-1

I want to voice my strong opposition to the proposed CEMEX 100 year agreement. I am a frequent hiker and trail rider in the Ball Ranch and Sycamore Island river front and strongly feel that the CEMEX would ruin this wonderful public resource.
Respectfully,
Dale Merrill

Sent from my iPad

Received
~~APPROVED~~
COUNTY OF FRESNO
MAR 10 2025
DEPARTMENT OF PUBLIC WORKS & PLANNING
DEVELOPMENT SERVICES DIVISION

To: Fresno County Public Works and Planning

From Diane Merrill dbm624@gmail.com

March 6, 2025

Re: Proposed Cemex Rockfield Expansion

I am a longtime Fresno resident and also a longtime supporter of the San Joaquin River Parkway. My family and I have and enjoyed outdoor recreation along the San Joaquin River for many years.

Comment 535-1

The San Joaquin River corridor is a valuable, nearby, and accessible outdoor recreation area for Fresno County residents, especially for those in the Fresno/Clovis metropolitan area.

The proposed Cemex Rockfield Expansion Project would be located next to Lost Lake Park, and not far from other recreation areas along the San Joaquin River. I am very concerned about the negative impact the project would have on air quality in the San Joaquin River area and the people who live, work or enjoy recreation along the San Joaquin River.

Comment 535-2

Fresno County has a serious air quality problem with particle matter 2.5 pollution. The San Joaquin Valley Air Pollution Control is taking steps to reduce particle matter 2.5 pollution and to alert residents when pollution levels are high. **CEMEX's proposed project has the potential to significantly increase PM 2.5 pollution in a popular outdoor recreation area near the Fresno/Clovis Metropolitan area.**

The U.S. Environmental Protection Agency has an information piece entitled Particulate Matter (PM) Basics. It states that: "Particulate matter contains microscopic solids or liquid droplets that are so small that they can be inhaled and cause serious health problems. Some

particles less than 10 micrometers can get deep into your lungs and some may even get into your bloodstream. Of these, particles less than 2.5 micrometers in diameter, also known as fine particles or PM 2.5, pose the greatest risk to health."

Comment 535-2 Cont.

Cemex activity at the proposed quarry site over the proposed 100 year period of operation would be harmful to the respiratory heath of the people who live, work, and enjoy outdoor recreation along the San Joaquin River.

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Diane Merrill
Dbm624@gmail.com

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Ms. Merrill

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From: James Minton
To: Randall , David A.
Subject: CEMEX
Date: Monday, March 10, 2025 6:19:49 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior Planner
County of Fresno
Fresno, CA

Dear David,

I am a 40 year resident of Clovis, California and I appreciate the opportunity to submit comments on the Draft Environmental Impact Report for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with this project approval. Comment 536-1

1) Impacts on the San Joaquin River Watershed

My residence is reasonably close to the Cemex plant. I have drilled 4 wells on my rural property, chasing an ever declining water table. What will be the impact of continuously pumping water out of a 600' hole near the river? Will all that water pumping further deplete an already impacted water table? An environmental impact statement for CEMEX needs to address impacts to our limited underground water supply.

2) Air quality and dust emissions

Working as an Allergist in this highly polluted air basin, I have seen first hand the impacts of air pollution. One in 4 children in our county have asthma and numerous studies link proximity to busy streets and freeways with asthma severity. The emissions of diesel trucks and dust contribute enormously to the disease burden of our children. The Cemex plant is a major contributor of these emissions. Comment 536-2

3) Biological Resource impacts

Clear cold water is essential to fish habitat, including restoring Salmon to the San Joaquin River. Loss of the fishery impacts the entire riparian ecosystem, including the birds and even river otters that rely on fish. I kayak the San Joaquin river almost weekly and see these beautiful birds including Bald Eagles, Swainson's hawks and Osprey on a regular basis. What a tragedy it would be for these birds to disappear from our area due to noise pollution and water quality degradation. Comment 536-3

4) Traffic and noise concerns

I live on Behymer Ave which is a busy and narrow 2 lane road. As Clovis subdivisions are rapidly approaching Behymer, this congestion will increase markedly. I already see numerous CEMEX trucks traveling this road, adding to the noise and congestion. The limited infrastructure in this area does not support expansion of the CEMEX plant. Comment 536-4

5) Cumulative Environmental Effects

In addition to air and noise pollution and impacts to local traffic, there is an even more Comment 536-5

important reason to not grant CEMEX a 100 year lease extension. This has to do with the limited opportunity for outdoor recreation in Fresno. The San Joaquin River is the only natural green space for our City. Having lived in areas such as Boulder, Colorado with extensive open spaces around the city, I have seen how access to natural areas impacts quality of life as well as improves property values. The Parkway trust should be allowed to expand the only natural area adjacent to our city for all to enjoy. Hearing the blasts and machinery noise from an expanded CEMEX plant is not compatible with creating a natural area space for all of our area residents to enjoy!

Comment 536-5 Cont.

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long term health of the San Joaquin River watershed and surrounding communities is protected.

Comment 536-6

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,

James L Minton MD
5192 E Behymer Ave
Clovis, CA 93619
559-281-8690

From: Samai Munoz
To: sweaver@riverparkway.org; Randall , David A.
Subject: Comment on CEMEX Rockfield Expansion Project
Date: Monday, March 10, 2025 1:05:11 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

3/10/25
David Randall, Senior PlannerCounty of FresnoFresno, CA Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David, I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. 1. Impacts on the San Joaquin River WatershedThere are many different ways throughout the entirety of the project that creates a negative impact on the watershed, river, and water in the area. Some are labeled as LTS or PS but in context of our type of environment, no impact feels less than significant to me. Nor do I think it would be of very little significance to the people who enjoy recreation and nature in the area. And much much less do the animals that reside within the area that depend on the water. Even minor impacts can create ripple effects that magnify as they continue to impact places, people, and species. 2. Air Quality and Dust EmissionsThe air quality impact 4.3-2 is categorized as significant requiring a mitigation measure. The mitigation measure requires the use of water. But water impacts also require mitigation measures. There are layers of natural resources being negatively impacted and their solution is to use natural resources. For the amount of money being extracted out of these projects, very little has been invested in better measures to counteract the possible damage being done and it is apparent. 3. Cumulative Environmental EffectsI find this report illuminating on the efforts to reduce impact to our natural environment, our region, and to our people and animals. It is appalling that from these reports there must be alternatives to the project including less years and less time on the site but yet the request is 100 years. The amount of time needs to be reduced significantly. It should also be re-evaluated often. The impact from this project if permitted, of 10 years could be in a magnitude that would ripple through generations. Please reconsider this project.

I ask the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter. Sincerely,
Samai Munoz

Comment 537-1

Comment 537-2

Comment 537-3

Comment 537-4

From: Leticia Murrietta
To: Randall , David A.
Subject: CEMEX Expansion
Date: Monday, March 10, 2025 4:08:00 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 538-1

This will serve to express my opposition to the proposed expansion of CEMEX. It is my understanding that if the proposal is approved, CMEX is allowed an additional 100 years of mining and the creation of a 600 foot deep mining pit caused by hard rock blasting. This activity poses a threat to our water quality and impacts fish and wildlife according to experts.

Please do not approve the proposal.

Thank you.

Leticia Murrietta

Friday Mar 7, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 539-1

Impacts on Water Quality & the San Joaquin River

Comment 539-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 539-3

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 539-4

Impacts on the San Joaquin River Parkway & Recreation

Comment 539-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 539-6

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 539-7

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 539-8

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 539-9

Threats to Wildlife

Comment 539-10

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 539-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,
Jorge Negrete
45362 S. Oakview Dr. Oakhurst CA 93644

JORGE NEBRETE
45362 S. OAKVIEW DR
OAKHURST CA 93644

FRESNO CA 936

RECEIVED 7 MAR 2025 PM 2 L

MAR 10 2025

FRESNO COUNTY PW & PLANNING

David Randall, Senior Planner
County OF Fresno Department OF Public Works and Planning
Development Services and Capital Project Division
2220 TULARE STREET, SIXTH FLOOR
FRESNO, CA 93721

93721-210699

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Jorge Negrete
45362 S. Oakview Dr.
Oakhurst, CA 93644

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Mr. Negrete

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From:	Katharine Nelson
To:	Randall , David A.
Subject:	CMEX Expansion Comment-area resident
Date:	Monday, March 10, 2025 10:59:50 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Thank you for allowing residents the opportunity to have input regarding the proposed expansion of the CMEX company mining expansion proposal in our beloved San Joaquin River valley. Comment 540-1

I have lived in the nearby Woodward Lake neighborhood since moving to Fresno in 2016. We chose to live in this area of town specifically for the access to the beautiful river valley, which I continue to frequent almost every day. I know many people choose to live near there for the same reason. The whole Copper River area has grown so much just since I've been here. The weekends are packed with fellow-outdoor lovers along the river valley walkways. I know the river valley contributes to our property values. Comment 540-2

I am concerned of the environmental impacts that the new mining type and the depth of the pit will have to the area-both aesthetically and practically. I hope that the potential environmental impacts will be thoroughly investigated in terms of possible problems with water/ air quality and the negative impact on the wildlife (fish, birds and mammals that live in the area). And what will it look like?? I remember visiting Butte, MT and seeing the blight of the Berkeley Pit. It went from providing economic prosperity to a toxic lake that cannot support life. Comment 540-3

We have so little official "green space" in the Fresno area. I hope that all efforts have been made to investigate the potential harm to our beautiful gem of a river valley. Thank you for your thorough consideration. Comment 540-4

Sincerely,

Katharine Nelson
397 E Salmon River Dr
Fresno, CA 93730
970-370-1668

From:	Clerk/BOS
To:	District 1; District 2; District 3; District 4; District 5; Nerland, Paul; Ortiz, Olivia; Hill, Edward; Buck, Samantha; Flores Becker, Amina
Cc:	Seidel, Bernice; Espino, Sal; White, Steven; Jimenez, Bernard; Randall , David A.
Subject:	FW: Cemex proposal
Date:	Monday, March 10, 2025 8:53:57 AM
Attachments:	image001.png

Good Morning,

Received email below via District 5. This submission is not related to a current agenda item.

Dean Dela Cruz | Deputy Clerk II
Board of Supervisors
2281 Tulare St., Room 301, Fresno, CA 93721
Main Office: (559) 600-3529, Option 4
deandelacruz@fresnocountyca.gov
The County of Fresno is an Equal Opportunity Employer

From: District 5 <district5@fresnocountyca.gov>
Sent: Monday, March 10, 2025 8:47 AM
To: Clerk/BOS <ClerkBOS@fresnocountyca.gov>
Subject: FW: Cemex proposal

FYI

From: kathie nesbitt <kathieanddavenes6@gmail.com>
Sent: Sunday, March 9, 2025 1:23 PM
To: District 5 <district5@fresnocountyca.gov>
Subject: Cemex proposal

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK Report Suspicious

Dear Mr. Magsig:

Comment 541-1

I am writing regarding the CEMEX proposal to expand its mining operation on the San Joaquin River.

I am opposed to this project for a number of reasons:

(1) CEMEX, a Mexican company, is proposing this type of mining on the San Joaquin because it

is illegal in Mexico.

(2) The project will go to a depth of 600 feet, which will destroy that part of the river both for recreation and wildlife habitat.

Comment 541-2

(3) The use of blasting for the mining will create intolerable noise for people within miles of the site, frighten pets and wild animals, and ruin the water quality.

Comment 541-3

(**4)** The mining will further prevent access to the river by Fresno area residents--there is already very little access to the river. We need more access to the river, not less.

Comment 541-4

(**5)** As the mining is proposed to last 100 years, it will inflict its damage for generations to come, which will have no opportunity to protect themselves and their environment from the project.

Comment 541-5

(**6)** It appears that the current Environmental Impact Study has severely underestimated or simply ignored the extreme deleterious effects of this project on Fresno Air Quality.
I am deeply concerned about the extremely serious degradation of our Fresno air quality that this project would cause. There is no way to mitigate the effects of the enormous amounts of rock dust that would be sent into our air by blasting.

Comment 541-6

(7) Fresno already has some of the worst air quality in the United States. This Cemex proposal would make it significantly worse.

So I respectfully request that you do all in your power to reject any proposal of CEMEX to continue its mining of the San Joaquin River in order to protect the lives of those of us who live in the wide Fresno Area.

Sincerely,
Kathie Nesbitt

From:	peter
To:	Randall , David A.
Subject:	Cemex Project
Date:	Monday, March 10, 2025 11:01:12 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior Planner

County of Fresno

Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

Comment 542-1

1. Impacts on the San Joaquin River Watershed

2. Air Quality and Dust Emissions

Comment 542-2

3. Biological Resource Impacts

Comment 542-3

4. Traffic and Noise Concerns

Comment 542-4

5. Cumulative Environmental Effects

Comment 542-5

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected.

Comment 542-6

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,
Peter Newell

From:	Christina Charlene Quintana Olague
To:	Randall , David A.
Subject:	CEMEX DEIR PUBLIC COMMENT
Date:	Monday, March 10, 2025 7:11:04 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good afternoon,

Comment 543-1

My name is Christina Olague and I'm a concerned Fresno County resident. I was made aware that CEMEX is proposing a massive impact on our one and only San Joaquin River, which has already been called The Most Endangered River in America, according to American Rivers and Scientific American (source:https://www.scientificamerican.com/article/americas-most-endangered-river-san-joaquin-in-california/).

Comment 543-2

I've also been made aware of the fact that Fresno has a massive gravel surplus, which is predicted to provide enough local gravel for Fresno's construction needs over the next 500 years, according to the California Geological Survey (source:https://fresnoland.org/2025/03/06/cemex-blast-mine/?utm_campaign=linkinbio&utm_medium=referral&utm_source=later-linkinbio).

Comment 543-3

The impacts of this proposed projects do not offer any benefits to our local community and in fact impose great harm and duress to our one last and only local waterway. Why would any resident of our beautiful Fresno want to see natural waterways degraded any further? Why would anyone want to blast a crater, nearly twice as deep as Millerton lake, off the shores of our one and only endangered San Joaquin River, when there is absolutely no need for gravel?

As a voter, I firmly believe the CEMEX Company's profits and campaign donations should not have the glaring level of targeted sway over local city officials decision-making to this degree.

In summation, I absolutely oppose this proposed project and it's environmental impacts on our natural waterways.

Thank you for your time.

Best regards,
Christina Olague

From: Suzy Abi-Rached
To: Randall , David A.
Subject: Cemex
Date: Monday, March 10, 2025 8:44:08 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment
544-1

March 10,2025 David Randall, Senior Planner
County of FresnoFresno, CA Subject: Comments on CEMEX Rockfield Expansion Project DEIR Dear David,

I would like to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. This project will likely have substantially negative impacts on the surrounding environment/ecosystem. Aside from the actual damage to the land and waterways, the increased pollution, both air and noise, will be detrimental to the people that use the area and the animals that live there.
If this project is to move forward, it should be with all of those aspects fully considered and supported above all. We can't continue to put profits ahead of lives. Thank you for your time and consideration of these comments. Sincerely, Suzanne Olguin

From:	Patricia Oren
To:	Randall , David A.
Subject:	CEMEX 100-Year Permit
Date:	Monday, March 10, 2025 7:59:49 PM

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Report Suspicious

Mr. Randall,
I am writing to formally express my opposition to the proposed 100-Year Permit for the CEMEX mining operation and to challenge the adequacy of the Draft Environmental Impact Report prepared for this project. The report, as currently drafted, does not sufficiently or accurately assess the environmental, ecological, and community impacts that this long-term operation will have on the San Joaquin River and surrounding areas.

Comment 545-1

The impact on wildlife habitat, water quality, air pollution, noise pollution, groundwater depletion, cumulative environmental impacts, community health, all major concerns.

Comment 545-2

I request that the Planning Department reconsider this permit in light of the inadequacies of the Environmental Impact Report and demand a more thorough environmental review before any decisions are made.

Comment 545-3

Thank you for your time and consideration.

Sincerely,
Patricia Oren

Sent from my iPhone

From: Eli Ortiz
To: Randall , David A.
Subject: CEMEX PROJECT
Date: Monday, March 10, 2025 11:55:31 PM

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Report Suspicious

Comment 546-1

Do not approve the mining expanding project. You're ruining the chance of future generations to enjoy our natural resources.

From: Hailey Owji
To: Randall , David A.
Subject: Proposed Cemex project at lost lake
Date: Monday, March 10, 2025 10:11:14 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 547-1

Dear supervisor ,
As a North Fresno resident ,living close to Proposed Cemex project area,
We are against expansion of this project to lost lake .
Some of major concerns are noise pollution ,water/river pollution ,air pollution , plus additional traffic on Friant , Copper and Willow Street.
These are residential areas and Public safety will be jeopardized.
We will appreciate ur attention to this matter .
Sent from my iPhone

Sarah Parkes
6804 N Backer Ave
Fresno, CA 93710
cairns.sarah0@gmail.com
559-346-7726

March 10, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Develop Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Comments on CEMEX Rockfield Quarry Modification Project EIR No. 7763

Dear Mr. Randall,

Comment 548-1

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. The San Joaquin River Parkway has been an important and meaningful piece of my professional and personal life over the last 18 years, and I am committed to its continued preservation and to expanding opportunities for people in the San Joaquin Valley to experience its wonder and resources as I've been privileged to. I am deeply concerned about the proposed Cemex Rockfield Expansion Project's adverse and, in many cases, unreparable impacts on the San Joaquin River, the San Joaquin River Parkway, regional air and water quality, recreational opportunities, public safety, and wildlife. Additionally, I find many of the proposed mitigation measures inadequate and some impacts entirely lacking mitigation.

Comment 548-2

Impacts on the San Joaquin River Watershed and Water Quality
The proposed project involves mining operations adjacent to the San Joaquin River, including blasting and drilling a 600-foot deep pit. The DEIR acknowledges that the project will reduce river flows and recognizes the connection between groundwater and river water, raising concerns about river water potentially flowing into the mining pit or reclamation pond (Appendix G-3).

- The DEIR fails to demonstrate how the project will comply with the Sustainable Groundwater Management Act (SGMA), particularly its requirement to prevent significant and unreasonable depletions of interconnected surface waters.
- It appears that the DEIR inadequately assesses how groundwater pumping and excavation will impact surface water flows and the river's beneficial uses. Additional study is necessary to fully understand how downstream water users and ecosystems will be impacted.

- What specific mitigation measures will be required of CEMEX to prevent reductions in river flows and ensure compliance with SGMA regulations, and how will they be monitored?

Comment 548-2 Cont

Given that climate change is increasing the frequency and severity of extreme weather events, a significant concern is how CEMEX will prepare for and respond to major flooding events, such as the flood of 1997. If a flood causes the San Joaquin River to breach the levee and capture the quarry pit, it could permanently alter the river's hydrology, making future reclamation efforts nearly impossible.

Comment 548-3

- The DEIR must fully analyze the long-term consequences for water quality, habitat integrity, and downstream flood risks if the river captures the Quarry pit, providing detailed modeling and mitigation measures for this scenario. A comprehensive assessment should be conducted to evaluate these risks under various climate change scenarios.
- In the event of river capture, who will bear the responsibility for mitigation and restoration? What legally binding financial and logistical commitments has CEMEX made to ensure that taxpayers and local agencies are not left to cover the costs of remediation and flood control?

The geologic survey (Appendix F-1) indicates that the deepest groundwater level found was at 34 feet. Per the report, it appears that Tetra Tech conducted the study in August of 2021. During that month, Friant Dam releases averaged 260-280 cubic feet per second per the USGS water monitoring tool. The DEIR should evaluate the groundwater data at different flow rates since the document admits the interconnectedness of ground and surface water at both the Plant and Quarry sites.

Comment 548-4

Section 4.4.9 of the Surface Mining and Reclamation Plan (Appendix B-1) provides a brief description of how explosives will be received, the equipment used, and the removal of unused explosives. This section states that dynamite will not be used but doesn't provide any information about the nature or type of explosives that will be used during blasting. Further, the Vibra-Tech Blasting Protocols report (beginning on page 1245 of Appendix 2 PDF) summarizes blasting protocols and provides "best practices" for flyrock control and mitigating groundwater and surface water contamination. The report states that there should be an inventory of the types of explosive materials on site. Additionally, the report states that interaction between muck piles and storm water will be managed, but not how.

Comment 548-5

Comment 548-6

- The DEIR inadequately analyzes the impacts of blasting as it does not specify the nature of the explosives that will be used. Fresno County should require CEMEX to complete a more thorough analysis of the impacts of blasting on water quality that includes detailed information on the types of explosives expected to be incorporated into the blasting plan.
- The DEIR should also be more specific in HOW the interaction between storm water and blasted rock muck piles will be managed. How will the interaction between stormwater and blasted rock muck piles be managed to prevent contamination,

erosion, and downstream impacts? What specific measures will be implemented to ensure compliance with water quality regulations?

Comment 548-6 Cont.

Impacts on the San Joaquin River Parkway

Comment 548-7

Table 4.16-1 includes out-of-date and incorrect information regarding recreation facilities near the project sites. In November 2024, the San Joaquin River Parkway and Conservation Trust opened Ball Ranch and Ledger Island under contract with the San Joaquin River Conservancy for public access 7 days per week. The current operating conditions are much more robust than described based on information dated to 2021. Additionally, both Sumner Peck Ranch and the Coke Hallowell Center for River Studies are open daily for free public recreation access. The DEIR does not adequately analyze the impacts of the project based on current existing conditions of recreational facilities.

Comment 548-8

The DEIR Project Objectives section (ES-3) includes a goal to "provide potential Parkway trail easements." The Surface Mining Reclamation Plan (Appendix B-1) references past discussions between CEMEX and the San Joaquin River Conservancy but lacks clarity on commitments and timelines.

The DEIR must provide greater clarity regarding the proposed trail development associated with the project. Specifically:

- The timeframe and exact location of the trail must be clearly identified.
- The San Joaquin River Parkway Master Plan (Buffer.3 policy) requires a 300-foot buffer between trails and active mining sites, separated by physical barriers. The DEIR must demonstrate how the proposed trails comply with this requirement.
- Since the trail is being presented as a community benefit of the project, the DEIR must explicitly state that CEMEX is responsible for its construction and long-term maintenance. This aligns with the County's General Plan Policy TR-A1.15—"the County shall seek funding for construction and maintenance of bicycle facilities and trails."

Additionally, the DEIR should disclose:

- What actions CEMEX is currently taking in collaboration with the San Joaquin River Conservancy to develop plans for trail easements.
- The anticipated timeline for securing easements, finalizing designs, and initiating the construction of the trails described in the DEIR.

Comment 548-9

I also have concerns about the noise impacts that will result from processing aggregate materials as well as blasting and drilling. The Plant Site and Quarry Site are in close proximity to public and private lands, providing recreational opportunities along the San Joaquin River. Today, a walk through Ball Ranch would expose you to the stark visual and aesthetic impacts of the processing equipment and the disruptive noise of rock crushing, negatively impacting the physical and mental health benefits of spending time in open spaces. When the processing equipment is moved to the quarry site, coupled with the

noise from blasting and drilling, visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch will experience significant impacts from the project. Clearly, the project will negatively impact recreational amenities in proximity to the project. Additional analysis is needed to mitigate these impacts fully.

Comment 548-9 Cont.

Inadequacy of Proposed Mitigation Measures for Significant Unavoidable Impacts

Comment 548-10

The DEIR documents three significant and unavoidable impacts:

1. 4.1-1 and 4.1-2: Substantial effects on a scenic vista and visual character.
2. 4.17-1: Conflicts with transportation plans.

Impacts 4.1-1 and 4.1-2: The project will substantially affect a scenic vista and degrade the existing visual character or quality of public views. The proposed mitigation measure—staining exposed rock only after each phase is completed—is entirely inadequate, as it does nothing to minimize the visual degradation during the project's active lifespan. This represents an improper delay in implementing required mitigation measures, which is not permitted under CEQA.

- Project neighbors, Parkway users, and the broader community should not be subjected to these significant impacts for the next 100 years; mitigation measures must be implemented proactively as impacts occur rather than deferred indefinitely.

Additionally, the DEIR states that significant and unavoidable impacts at two intersections cannot be fully mitigated due to uncertain funding and timelines for necessary improvements.

Comment 548-11

- The County must not approve a project with known, significant, and unavoidable traffic impacts without a clear timeline and guaranteed funding for necessary roadway improvements. The DEIR must clearly document financial assurances and timelines for road improvements required to mitigate the projects transporation impacts.
- Comprehensive contingency plans must be established to address increased congestion, and safety concerns for local residents, Parkway users, cyclists, and commuters.
- The DEIR should outline the specific measures that CEMEX will be required to implement to address roadway impacts, including damage to vehicles from falling rocks, broken windshields, and debris accumulation in bike lanes.
- There must be enforceable requirements for truck covering, roadway cleaning, and financial responsibility for road maintenance and repairs to ensure public safety and infrastructure protection.

Impacts on Air Quality

Comment 548-12

The DEIR's air quality analysis compares emissions from the proposed expansion to existing mining operations rather than a no-project scenario (4.3.3.3). I believe this analysis methodology minimizes the project's actual impact, especially since neither the Plant Site nor Quarry Site operations have previously undergone the CEQA process.

- Fresno County should require further air quality analysis to establish a baseline that assumes no project rather than comparing emissions from the proposed expansion to existing conditions. It is appropriate to evaluate the project's full impact against a scenario where mining ceases to assess the project's true impact on air quality.

Comment 548-12 Cont.

Table 4.3-24 shows that the proposed project may exceed cancer risk thresholds, a potentially significant impact. The DEIR states that mitigation measure 4.3-2 will reduce this impact to a less-than-significant level.

Comment 548-13

- The DEIR must state who will be responsible for monitoring CEMEX to ensure that mitigation measure 4.3-2 requirements are correctly implemented and what enforcement mechanisms will be put into place to ensure compliance, including what consequences CEMEX will face if it fails to meet these requirements.

Impacts on Wildlife

Comment 548-14

The DEIR must be revised to fully assess the project's potential impacts on wildlife, including threatened and sensitive species, and to ensure compliance with state and federal protections.

- The current analysis (Table 4.4-1) is too limited and may have overlooked species that could be significantly affected by the project. To capture all relevant occurrences of special-status species, Fresno County should require additional analysis, expanding the special-status search radius to the industry standard nine-quadrangle.
- The mitigation measure for nesting birds 4.4-1c appears inadequate per the CA Department of Fish and Wildlife policies for protecting nesting birds. Several key concerns should be addressed:
    - There is a lack of clear, enforceable monitoring duration. The measure states that the biologist "may decide whether ongoing nest monitoring is warranted," which creates uncertainty and leaves too much discretion without a defined standard. The mitigation should specify the required monitoring frequency and duration if an active nest is found. Ongoing monitoring should be required.
    - The buffer zones mentioned in the DEIR are not adequate for certain sensitive species (Swainson's hawk and Bald eagle), particularly raptors or other large birds, which require larger species-specific buffers.
    - The DEIR must demonstrate compliance with applicable laws, including the California Endangered Species Act, the federal Endangered Species Act, and CDFW guidelines for species protection.

Comment 548-15

The analysis of the impacts on fish is based on Alaska Department of Fish and Game standards for the Proper Protection of Fish, resulting in a finding that the impacts will be less than significant, with no mitigation required. Additionally, the DEIR lacks analysis of how deeper mining could impact river flows and, consequently, spring-run Chinook salmon.

Comment 548-16

- The County must not rely on Alaska standards to assess impacts on California rivers unless it can be demonstrated that the site conditions under which those standards were developed are directly comparable to the existing conditions of the San Joaquin River.
- CEMEX should be required to conduct a more thorough analysis of how deeper mining could affect river flows and the potential consequences for spring-run Chinook salmon, ensuring that the evaluation is based on site-specific data and California-relevant standards.

Comment 548-16 Cont.

Delayed Mitigation Measures and Production Threshold Concerns

Comment 548-17

The DEIR fails to ensure that the critical mitigation measures will be implemented in a timely manner, as some are only triggered when CEMEX reaches the 3.0 million tons (MT) production threshold. This raises serious concerns:

- There is no guarantee that CEMEX will ever reach the 3.0 MT threshold, meaning these mitigation measures could be indefinitely delayed or never implemented at all.
- Mitigation must be tied to actual environmental impacts rather than production levels. The County must require that these measures be implemented based on cumulative impacts over time, not conditional production milestones.
- A clear enforcement mechanism must be established to ensure that all necessary mitigation measures are carried out, regardless of whether CEMEX reaches the specified production levels.

Comment 548-18

Given the significant environmental, public safety, and community concerns outlined, the DEIR fails to assess the project's long-term consequences adequately. The San Joaquin River, its fragile ecosystems, and the residents and visitors who depend on it for clean air and water deserve a far more rigorous evaluation. Fresno County must require additional analysis, enforce stronger mitigation measures, and secure binding financial commitments from CEMEX before considering project approval. However, the best course of action is to reject this project outright—preventing irreversible damage to the San Joaquin River and the Parkway and avoiding the creation of a 600-foot-deep scar that will outlast generations. The County has a choice: allow this project to permanently alter the landscape or take action now to ensure these lands are restored for future generations. Reclaiming these lands today would leave a far better legacy than a deep, abandoned pit.

Thank you for your time and consideration of these comments, questions, and requests.

Sincerely,

Sarah Parkes
cairns.sarah0@gmail.com
559-346-7726

From: tpearson123@mac.com
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Monday, March 10, 2025 12:26:03 PM

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Report Suspicious

March 10, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all. Comment 549-1

Impacts on Water Quality & the San Joaquin River

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions. Comment 549-2

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit? Comment 549-3
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites. Comment 549-4

Impacts on the San Joaquin River Parkway & Recreation Comment 549-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully Comment 549-6

analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 549-6 Cont.

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 549-7

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 549-8

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 549-9

Threats to Wildlife

Comment 549-10

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 549-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Our family lives in Woodward Lake development and we are very concerned about noise, air pollution and increased truck traffic on Friant Road if this 100 year lease extension is allowed to go forth.

It is time to make Fresno County a better place to live. Expanding the San Joaquin River area for recreation: fishing, hiking, camping, bird watching, cycling, family outings of all sorts is an important part of the quality of life in the greater Fresno area.

Thank you for your time and consideration.

Sincerely,

The Pearson Family

10667 N. Coronado Circle

Fresno, CA 93730

From:	Steven W Pearson
To:	Randall , David A.
Subject:	CEMEX expansion
Date:	Monday, March 10, 2025 6:37:58 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good day Mr Randall. We have not been prone to add our thoughts on local events, but with this project we see nothing but red flags. Comment 550-1

We have lived in the Millerton area for almost 12 years now, and pass this location several times a week. There is already an endless convoy of trucks on Friant Rd adding to traffic. The size and weight of these vehicles breaks down the road surface much faster than regular vehicle traffic. They play havoc on our cars, especially windshields, which we have had to replace on multiple times due to rock damage from these trucks.

The size of the project is also concerning. A 600' deep pit? Really? And will they fill this pit back in when they're complete? And what with constant expansion of the city, and home building, this location will not be considered a remote location for much longer. It certainly appears that this will be within an area of city influence area soon. Comment 550-2

The final thing that bothers us is the time frame that will be allowed for the expansion to operate. ONE HUNDRED YEARS is a ridiculous number. Do you really think that there will not be changes in even the next 5 or 10 years that should require a re-look or reassessment of the operation of this project? Comment 550-3

We hope those involved with this decision will choose to act responsibly.

We thank you for the opportunity to air our concerns.

Steve and Connie Pearson
21362 Ruscello Ln
Friant, CA 93626

March 10, 2025

David Randall, Senior Planner
County of Fresno
Fresno, CA

David,

As a frequent volunteer along the river, I write this letter to urge you to address the air quality, noise pollution, water pollution, and wildlife protection issues that the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project fails to consider effectively. Comment 551-1

Regarding the air quality, what measures will Cemex take to ensure the air pollution they will be causing is minimized, and how can we hold them accountable as well as how can they hold themselves accountable? Comment 551-2

Regarding noise pollution, Cemex already ruins the current natural space around them with their production noises. How can we hold them accountable to the noises they will be making during the process of the pit? Comment 551-3 Have they considered how that will affect the wildlife? If so, how will they ensure the wildlife remains in the area? Comment 551-4

Lastly, have they spoken to local ranchers and talked to them about the effects this will have on their cattle and other livestock? How will Cemex ensure the wildlife such as the fish, deer, birds, and critters aren't harmed? How will they hold themselves accountable, and how can we hold them accountable?

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Comment 551-5

Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Sincerely,
Celeste

From: Alan Pinkerton
To: Randall , David A.
Cc: sweaver@riverparkway.org; Alan Pinkerton
Date: Monday, March 10, 2025 9:02:20 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 10, 2025

David Randall, Senior Planner
County of Fresno
Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David,
I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. As a frequent user of the San Joaquin River corridor between Friant and Sycamore Island, I have several concerns that I urge you to address prior to moving forward with approval. Comment 552-1

The DEIR says that project emissions may exceed cancer risk thresholds. DEIR pg. 4.3-63. The DEIR says that because mitigation measures would reduce emissions, the DEIR did not evaluate population-wide cancer burden. DEIR at pg. 4.3-64. CEQA requires that the analysis be performed before taking into account implementation of mitigation measures.

Inadequate analysis of the potential effects of the project on the state listed as threatened Swainson's hawk. With more than four dozen breeding season occurrence records of this species within 2 miles of the project site (eBird 2025) and numerous potential nest trees within 0.5 mile, the project could impact Swainson's hawk. Construction activities such as blasting, excavating, trenching, or using other heavy equipment that disturbs or harms a Swainson's hawk or substantially modifies its habitat could constitute a significant impact. To meet California Department of Fish and Wildlife (CDFW) recommendations for mitigation and protection of this species, protocol surveys would need to be conducted within a 0.5-mile radius around all project activities. If active nesting is identified within the 0.5-mile radius, consultation with that agency would be required. Comment 552-2

Mischaracterization of a regulated habitat. The Waste Wash Conveyance Ditch at the Plant Site likely qualifies as a stream, and diverting or obstructing its natural flow; altering its bed, channel, or bank; or depositing any material into Comment 552-3

this feature would be subject to provisions of California Fish and Game Code Section 1600 et seq.

Comment 552-3 Cont.

Public Safety especially as it relates to the Quarry Site is a concern for the future once the site is abandoned. This could be analyzed under the Hazard category as the Fresno County General Plan Implementation Program HS-E.B includes a statement that "The County shall, as part of the development review process, ensure that new development does not create manmade safety hazards.

Comment 552-4

The public safety hazard that the quarry will represent after the project is complete 100 years or so from now (and maybe before) is a significant concern that needs further analysis and mitigation measures. With the stepped but vertical walls and a surface water elevation more than 400 feet below the trail elevation, the open quarry will not be suitable for fishing, swimming, boating, kayaking, canoeing, floating or anything else. But it will be ATTRACTIVE, especially to preteens and teenagers. Rest assured fences that will keep people out. What will happen when one or more of the public falls into the pit or worse yet drowns in the pit after the site is abandoned? I question if the County Search and Rescue is trained and equipped to deal with body recovery in 400 feet of water.

The flood hazard analysis is limited to the FEMA 100-year floodway and floodplain and states the "the floodplain does not encroach into the Quarry Site" as shown on Figure 4.10-1.
The continued development of the berm between the river channel and the Quarry Site will constrain the river and will create a choke point especially at the north end of the Quarry Site where the easterly bank of the river is more vertical. According to the 100-Year Hydraulic Results found in the Hydraulic Analysis in Appendix G-1, the flood water surface elevation between Stations 20 and 21averages out to 313.27 feet. Without a constraining bank between Stations 20 and 21 on the east side of the river additional water flow will likely push to the east across the north side of the Quarry Site. The Executive Summary includes the following caveat: The Bureau of Reclamation owns and manages the dam, and, during unforeseen events, may be required to release water into the San Joaquin River at rates that could exceed the river channel capacity (Fresno County 2018a). This sounds like a highly likely "train wreck" to me.

Comment 552-5

The threshold of significance used is inappropriate at this site. Noise along area roadways used by truck traffic already exceeds the General Plan normally acceptable standard of 60 dBA in residential areas. The threshold used doesn't make sense in an area where residents are already exposed to high levels of noise. Any increase of noise should be considered significant. See DEIR Table 4.13-6 at pg. 4.13-28 and Table 4.13-13 at starting at pg. 4.13-49.

Comment 552-6

Comment 552-7

Table 4.16-1 Recreation Facilities Near the Project Sites – Some of the table sources are dated to 2021. Several properties listed (namely Ball Ranch and Ledger Island) were not formally open to the public then. These properties are now operated by the San Joaquin River Parkway and Conservation Trust under a contract with the San Joaquin River Conservancy. There is more public use of the sites under current conditions that the project should analyze.

The description of the San Joaquin Fish Hatchery does not fully encompass the recreational facilities available, including FINS and the Parkway Trail from the hatchery to Lost Lake Park. It is more than "limited public access" today.

The descriptions of Ball Ranch and Ledger Island do not encompass the current operational status of public access availability 7 days a week.

The descriptions of the River Center and Peck Ranch state public access by permission, which is not entirely accurate. The properties have regular operating hours and is open to the public daily.

As you can tell from my response I am concerned and adamantly opposed to extending any expanded and future use of the CEMEX Rockfield site on the San Joaquin River. Please add me to any future correspondence concerning the future of this proposal.

Respectfully,

Alan Pinkerton
1495 Ben Hur Road
Raymond CA 93653
alanspinkerton@gmail.com

To: David Randall
Senior Planner Fresno County Public Works & Planning Department Development

From: Dr. Christopher Pluhar
Fresno, CA
christopher.pluhar@gmail.com

Date: March 10, 2025

Subject: citizen comment on *C E M E X R O C K F I E L D Q U A R R Y ROCKFIELD MODIFICATION PROJECT (EIR 7763) AND UNCLASSIFIED CONDITIONAL USE PERMIT APPLICATIONS NOS. 3666 AND 3667 DRAFT ENVIRONMENTAL IMPACT REPORT*

To whom it may concern;

Comment 553-1

This letter constitutes public commentary of a local citizen on the subject draft EIR. I recognize that the Fresno area requires a local aggregate supply in order to maintain a local healthy economy and minimize the climate impacts of shipping large quantities of heavy low-value material large distances. However, the proposed project and its alternatives suffer from some important shortcomings. A useful comparison operation is Vulcan Materials' Austin Quarry, which does/will do much the same type of operation, but significantly: 1) Austin Quarry is not directly adjacent to one of California's largest rivers, 2) Austin Quarry is much further from significant population than the proposed activity.

Concerns:

Comment 553-2

Impact 4.10-1, 4.10-2, 4.10-3

Flood.

1) It is well known that 100-year-flood levels can change due to urbanization of a watershed https://www.sciencedirect.com/science/article/pii/S0022169418308242, other floodplain modifications https://onlinelibrary.wiley.com/doi/abs/10.1002/hyp.8261, and climate change https://nhess.copernicus.org/articles/17/2199/2017/. Our region is specifically predicted to experience increased flood extremes, e.g., https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1752-1688.2011.00546.x. The proposed project uses FEMA flood projections from 27 years ago and adjusts for local topographic change. These 27 years included all ten of the ten hottest years on record (https://journals.ametsoc.org/view/journals/bams/101/5/bams-d-19-0215.1.xml). Winter storms are expected to deliver increased proportions of rain compared to snow, meaning that past snowpack storage will be decreased and winter runoff increased. These well-known trends towards increased future flood hazard are not addressed by the EIR, though they are "reasonably forseeable". A flood overtopping or eroding and breaching the buffer zone between the proposed quarry pit and the San Joaquin River would deliver sediment, equipment, and potentially hazardous materials directly to the river. This would not be an acceptable outcome.

Comment 553-3

2) The draft EIR contains the following, completely-unsupported claim "*During historic flow events, including the January 1997 flood event of approximately 60,300 cfs, the existing*

easterly channel bank along the Quarry Site did not experience significant erosion and the bank has never breached into the Quarry Site." The draft EIR apparently does not demonstrate that no erosion took place, and therefore any conclusions upon which this is based are speculative, such as the assertion that significant bank erosion will not occur during the project period of 100 years. An attempt should be made to measure historic channel erosion, which could be done with historical airphoto records.

Comment 553-3 Cont.

Impact 4.7-3, 4.7-4, & 4.7-07

Soil slope stability

Comment 553-4

Upon dewatering the site, hydraulic head between the San Joaquin River and the quarry will substantially increase, causing the flow of water through the buffer to increase, potentially triggering sapping/piping of higher-permeability soil zones and triggering slope degradation by that mechanism. This will be exacerbated by proposed installation of water recharge trenches along the buffer between the river and the quarry. Piping/sapping problems are well-known to trigger river levee failures by washouts as well as slope failure. The geophysical seismic logs span only a tiny fraction of the perimeter of the quarry site and could easily miss some variations in the depth of soil-bedrock interface that may be significant in this regard. In addition, the lateral variation in alluvial soils means that it could be easy to miss zones of preferential groundwater/soil piping/sapping problems. Additional geophysical surveying along the entire perimeter between the river and quarry site, including groundwater-sensitive techniques such as resistivity, would be important to identify problem areas. Groundwater cutoff walls should be considered to mitigate the potential sapping/piping problem as well as groundwater infiltration to the quarry site.

Impact 4.7-3 & 4.7-07

Rock slope stability

Comment 553-5

Kinematic analysis can reveal slope instability that occurs from rock discontinuities, such as fractures, foliation, and/or faults. Elements in the draft EIR:

- "*The geological data obtained from ROC-1 through ROC-7 could not be utilized for kinematic analyses due to the absence of the dip directional information. The geological data obtained from MW-5D through MW-7D also could not be utilized for kinematic analyses due to the absence of both the dip angle and dip directional information. Only geological information obtained from the 4 geophysically logged borings MW-1D through 4D are available for kinematic analyses. Although helpful, this information is not considered sufficient to support developing meaningful or reliable kinematic models for stability evaluations of the planned mining slopes for the mining area extending over 280 acres*".
- "*It is our opinion that groundwater monitoring data reported on December 14, 2018 are based on open standpipe data and therefore do not provide information about the continuity of the groundwater flow, distribution of aquifers and aquitards, and consequently they do not provide the key information for the pore pressure distribution within the slope stability model. Therefore, the pore pressure distribution for the slope stability model was "backcalculated" as to provide an acceptable Factor of Safety for the proposed slopes.*

This "backcalculated" groundwater regime/pore pressure distribution will need to be verified either by focused field investigation consisting of installation of piezometers and permeability packer tests prior to the commencement of the mining operations, or by development of a mitigation plan combined with implementation of a monitoring program during mining." In other words, critical elements of the slope stability, pore water pressures, are not known, but values were inserted into the calculations to give acceptable answers. Elevated pore water pressure is typically the proximal cause in slope failures.

Comment 553-5 Cont.

- Abundant rock fractures occur within the granitic bedrock at a wide range of orientations:
  - ROC-1 89 fractures in a 253 ft deep borehole, averaging 1 fracture per 2.8 ft
  - ROC-2 42 fractures in a 228 ft deep borehole, averaging 1 fracture per 5.4 ft
  - ROC-3 30 fractures in a 208 ft deep borehole, averaging 1 fracture per 6.9ft
  - ROC-4 56 fractures in a 203 ft deep borehole, averaging 1 fracture per 3.6 ft
  - ROC-5 34 fractures in a 217 ft deep borehole, averaging 1 fracture per 6.4ft
  - ROC-6 152 fractures in a 260 ft deep borehole, averaging 1 fracture per 1.7 ft
  - ROC-7 38 fractures in a 208 ft deep borehole, averaging 1 fracture per 5.5 ft

  MW boreholes also contain significant fractures. This highlights the possibility of wedge failure at a much wider variety of orientations than those analyzed, as show in the "MW" borehole kinematic analyses – every intersecting arc is a potential wedge failure. The boreholes sample only a vertical section with no lateral extent, while the project excavations will have a very long lateral extent, exposing any and all fractures that are not parallel to the rock slope.

Other facts

- Unloading a rock mass by excavation by the proposed large amount is known to trigger fracturing in bedrock as the stress state of the material is substantially altered. This would enhance the number, length, aperture, interconnection, and groundwater conductivity of the fracture network, all of which would reduce slope stability.
- Significant dEIR space is devoted to the strength of the granitic rock mass. This is only important for "rock bridges" in between the rock fractures. To first order, the rock mass is held in place by friction on the rock fractures and the strength of the rock bridges.

As such, the proposed slope stability design is largely speculative. Given the large potential negative impact of a slope instability compromising the buffer between the San Joaquin River and the quarry, this seems unacceptable. "*groundwater regime/pore pressure distribution*" should be measured in order to adequately address slope stability concerns. The kinematic analyses should also include the spatial variation of factors of safety in the modeled slopes.

Impact 4.7-11

Comment 553-6

Paleontology

The draft EIR states "*No known fossil localities in the project area from the Natural History Museum of LA County vertebrate collections (McLeod 2017, 2019, cited in Appendix F-2). The closest Natural History Museum of LA County locality on record (LACM 7254) occurs in older Quaternary deposits 30 miles northwest of the project area and immediately northeast of*

Chowchilla." In fact, a bison fossil was found along the San Joaquin River floodplain margin a few miles downstream from the project site (Dundas, Robert G.**,** Yesenia Ibarra, Frederika J. M. Harmsen and Peter K. Van de Water (2009) *Bison cf. B. latifrons from the Late Pleistocene Broach Locality, Fresno, California.* Current Research in the Pleistocene, v.26, pp.149-151), highlighting the need for the paleontological mitigation, and suggesting that a more-thorough literature review may be needed.

Comment 553-6 Cont.

Impact 4.10-10, 4.10-12

Groundwater Impacts

Recharge ditches are proposed to return dewatering water to the subsurface along the west side of the quarry site, adjacent to the San Joaquin River. Thus, some would flow through the subsurface into the river, and some would move back into the quarry. This activity would artificially raise the water table in this area, exacerbating the possibility of slope instability and piping/sapping erosion described above.

Comment 553-7

Other

Public Safety and Wildlife

Quarry walls are proposed to be benched with 50-foot-high highwalls to a depth of 600 ft below grade. If the mine site fills with water to the claimed level following operations, this would leave a public safety hazard in perpetuity as well as a trap for non-avian animals.

Comment 553-8

The forgoing reasons, among others no doubt expressed by the public, indicates that additional planning and justification is needed for the proposed work or its alternatives. If the goal is to mine hard rock for aggregate, it may be done anywhere within a huge swath of the Fresno/Clovis/Madera area with much less impact. The proposed activity and alternatives displays too many negative impacts or potential impacts.

Comment 553-9

Sincerely,
Christopher J. Pluhar

From: alexpam@mail.com
To: Randall , David A.
Subject: Feedback regarding (DEIR) No. 7763 CEMEX Rockfield Expansion Project.
Date: Monday, March 10, 2025 3:00:52 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 10, 2025
To: David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear Mr. Randall,

I have lived in Fresno my entire life. I would like to voice my concerns regarding the Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project.

Comment 554-1

This project poses multiple threats to the quality of life in the Fresno/Madera area.

Any projected benefits of this project are far outweighed by the harm and detrimental impact it will cause.

It threatens the San Joaquin River, local water quality, air quality, public safety, wildlife, and public recreation.

Comment 554-2

Many of the proposed mitigation measures are not adequate. There even are some impacts that don’t have any mitigation planned.

Deep mining will have a great impact on water quality and the San Joaquin River.
Mining next to our precious resource of our San Joaquin River is putting the profits of one company against the health and safety of residents (both human and animal). It raises serious concerns about water loss and contamination. The Draft Environmental Impact Report (DEIR) recognizes that mining could reduce river flows, however it does not any straightforward solution.
The DEIR should identify the impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

Comment 554-3

There has already been a president where flood waters breached the levee and the quarry pit. Where is CEMEX's plan of precaution?

Comment 554-4

What will happen if the pit becomes a part of the river system? Who will be responsible for cleaning it up or for the long-term damage it would cause?

In addition, the DEIR utilized data for groundwater that was obtained during a period of low river flow. The DEIR should reevaluate the groundwater data, using data. There is groundwater/surface water interaction at both sites as indicated by the DEIR.

Comment 554-5

There is a lack of mitigation for the impact on air quality, traffic, and appearance.

Comment 554-6

The quality of our air will be negatively impacted by the CEMEX project. The DEIR acknowledges that there will be a negative impact on air quantity but does not fully appreciate the severity of the impact. Rather than comparing emissions to current

Comment 554-7

operations, the DEIR should make comparisons to what it is like without such a project. The underestimates impact of the project's impact by not taking this into account the full environmental impact of additional mining.

Comment 554-7 Cont.

Congested traffic and road damage are expected outcomes of this project. The project will have a significant impact on traffic. However where is the guaranteed funding and plan for road improvements? How will the County keep CEMEX accountable for debris, damage to the road, and other safety hazards?

Comment 554-8

The project will be a blight to our scenic views. With any proposed mitigation occurring only after the harm takes place, for example, rock staining after mining phases. This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA

Comment 554-9

The CEMEX project creates threats to Wildlife.
Years ago we had a thriving salmon population and wetlands. We have lost 95% of it due to previous poorly made decisions that did not protect the river. The DEIR fails to adequately analyze the impact on species like Swainson’s hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns. Why have those impacts not identified or evaluated? The proposed mitigation measures do not comply with existing regulations for protection.

Comment 554-10

In addition, it is not appropriate for the DEIR to use Alaska-based standards to assess fish protection instead of California-specific guidelines. How can these be standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

Comment 554-11

Comment 554-12

The biology section of the DEIR does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce impacts. It creates more questions than it answers. It should be fully reevaluated, rewritten, and recirculated for public comment.

Comment 554-13

Deep mining will have a negative impact on the San Joaquin River Parkway & Recreation
CEMEX has referenced “potential” trail easements for public use, yet the DEIR does not garner any actual commitments for this, nor a timeline.

The timeline for construction and exact locations of any trails to be constructed should be identified and committed by the DEIR prior to any implementation of the CEMEX project.

The DEIR should describe how the proposed trailsmeet the San Joaquin River Parkway Master Plan’s requirement for a 300-foot buffer between mining operations and public access.

The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

Comment 554-14

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. Blasting, rock crushing, and drilling crest will create noise that will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts have not been evaluated. The first priority should be wellbeing of the community, rather than the financial benefit of CEMEX.

The DEIR should fully analyze these impacts and identifyappropriate mitigation measures for all impacts.

Comment 554-15

In conclusion, the severe impact by the proposed CEMEX project on the river, wildlife, air quality and public safety, should be enough for the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. This additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project

Thank you for your time and consideration.
Sincerely,
Pamela Pokrovsky
5749 E. Christine Ave
Fresno, CA 92727

Sent using the mobile mail app

From:	Joan Poss
To:	Randall , David A.
Subject:	No to Cemex which continues to pillage one of Fresno"s greatest natural resources!!
Date:	Monday, March 10, 2025 4:34:11 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear County Senior Planner,

You have the opportunity to stand up to and halt the degradation of the beloved San Joaquin River by Cemex which wants to drill a 600 foot deep pit very close to the river. This means blasting which will not only impede the salmon which have been neglected for years but also the fish being raised at the fish hatchery. The blasting will impact those who canoe the river, walk, hike and bicycle in this natural setting.

Comment 555-1

Comment 555-2

This pit will be three times larger than the highest building in down town Fresno. The multitude of trucks on the roads near the river will cause hazards to motorists as well as bicycle riders and walkers and nearby residents.

Comment 555-3

There is an easy solution. There are many other sand and gravel resources. It's time for Cemex which has invaded the river for over 100 years to give up blasting and drilling in the backyard of our beloved resource.Ra

Comment 555-4

Mr. Randall, I hope you will go for a walk, canoe, hike or whatever is your pleasure near or at the river.

Yours, truly,

Joan Poss

From: JJ Pri
To: Randall , David A.
Subject: CEMEX
Date: Monday, March 10, 2025 6:28:35 PM

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Report Suspicious

Sent from my iPhone
I am submitting our opinion on the CEMEX request. We are senior citizens and feel the impact of this request would be detrimental to our beautiful San Joaquin River. To request 100 more years of mining is ridiculous. I hope Fresno Development will deny this request.

Comment 556-1

Sincerely,
William & Jessica Priddy

From: Asdruval Ramirez
To: Randall , David A.
Subject: Public Opinion About: CEMEX Rockfield Expansion Project
Date: Monday, March 10, 2025 10:06:40 AM

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Mr. David Randall,

Comment 557-1

I have a few comments regarding the proposed Cemex Rockfield Expansion Project:

- **Economic and Environmental Justification:** There is considerable doubt regarding the necessity of this project. Data indicates that our region already possesses a substantial surplus of aggregate resources, which calls into question the economic justification for extending mining operations for an additional 100 years. The projected job benefits seem minimal when weighed against the potential long-term environmental degradation and community disruption.

- **Project Impacts:** The plan poses significant risks to our community and environment. The projected deep blasting and drilling could result in excessive noise, dust, vibration, and water quality issues, particularly affecting the San Joaquin River and nearby residential areas. The expected increase in truck traffic also raises concerns about road damage and public safety.

Comment(s) 557-2 557-3

- **Project Documentation Inadequacies:** Upon review, the technical appendices and project description appear to underestimate the long-term environmental and community impacts. In particular, the analysis does not fully address potential adverse effects on the local ecosystem or adequately outline the risks associated with a 600-foot deep pit and sustained high-volume truck traffic.

Comment 557-4

- **Safeguard and Mitigation Measures:** I recommend that the County require additional and more robust mitigation measures. These should include:

    - Stricter controls on blasting operations and continuous monitoring of environmental impacts.
    - A comprehensive traffic management plan to address the increased truck movements.
    - Clear, enforceable commitments to restore and protect the impacted areas, including enhanced reclamation efforts beyond the current proposals.

Comment 557-5

In light of these concerns, I urge the Board to re-examine the need for this project and to insist on more rigorous safeguards before any further approvals are considered.

Thank you for your attention to these issues.

Sincerely,
Asdruval Ramirez
Resident, Fresno County
5815 W Swift Ave Fresno, CA 93722

From: Jillian Ramirez
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Monday, March 10, 2025 9:08:14 PM

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Report Suspicious

March 10, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 558-1

Impacts on Water Quality & the San Joaquin River

Comment 558-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

Comment 558-2 Cont.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?

Comment 558-3

- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 558-4

Impacts on the San Joaquin River Parkway & Recreation

Comment 558-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.

- The DEIR should describe how the proposed trailsmeet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access

- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational

Comment 558-6

sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 558-6 Cont.

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 558-7

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.

- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR.

Comment 558-8

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 558-9

Threats to Wildlife

Comment 558-10

The DEIR fails to adequately analyze the impact on species like Swainson’s hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and

migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Comment 558-10 Cont.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 558-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,

Jillian Ramirez
7532 N Trellis Cir, Fresno, CA 93720

From:	radleyreep@netzero.net
To:	Randall , David A.
Subject:	CEMEX Rockfield Quarry Modification Project EIR
Date:	Monday, March 10, 2025 4:39:55 PM
Attachments:	2025 - 03-10 - Comment Letter on the Draft EIR for the CEMEX Project along the San Joaquin River - Submitted to the County of Fresno by Radley Reep this Date.pdf 2009 - 02-18 - Flood Insurance Rate Map 1030 of 3525.pdf 2009 - 03-18 - Provost & Pritchard Memorandum - Evaluation of the Beck Property for Effluent Storage & Reclamation.pdf 2011 - 02-01 - Testimony of Joe Glicker before the Fersno County Board of Supervisors - Administrative Record for Fresno County Superior Court Case No. 11CECG00726 - Pages 008846 - 008448.pdf 14 - 05-14-2014 - Letter from Dennis Bacopulos - Exhibit C.pdf

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Report Suspicious

March 10, 2025

Dear Mr. Randall,

Please find attached my comment letter on the Draft EIR for the CEMEX Rockfield Quarry Expansion Project. The letter includes four attachments.

Thank you,

Radley Reep

Radley Reep
557 W. Escalon, No. 101
Clovis, CA 93612

March 10, 2025

David Randall, Senior Planner
Fresno County Public Works and Planning Department
2220 Tulare St., 6th Floor
Fresno, CA 93721

SUBJECT: DRAFT EIR (SCH No. 2020060123) FOR THE CEMEX ROCKFIELD QUARRY MODIFICATION PROJECT (DECEMBER 2024)

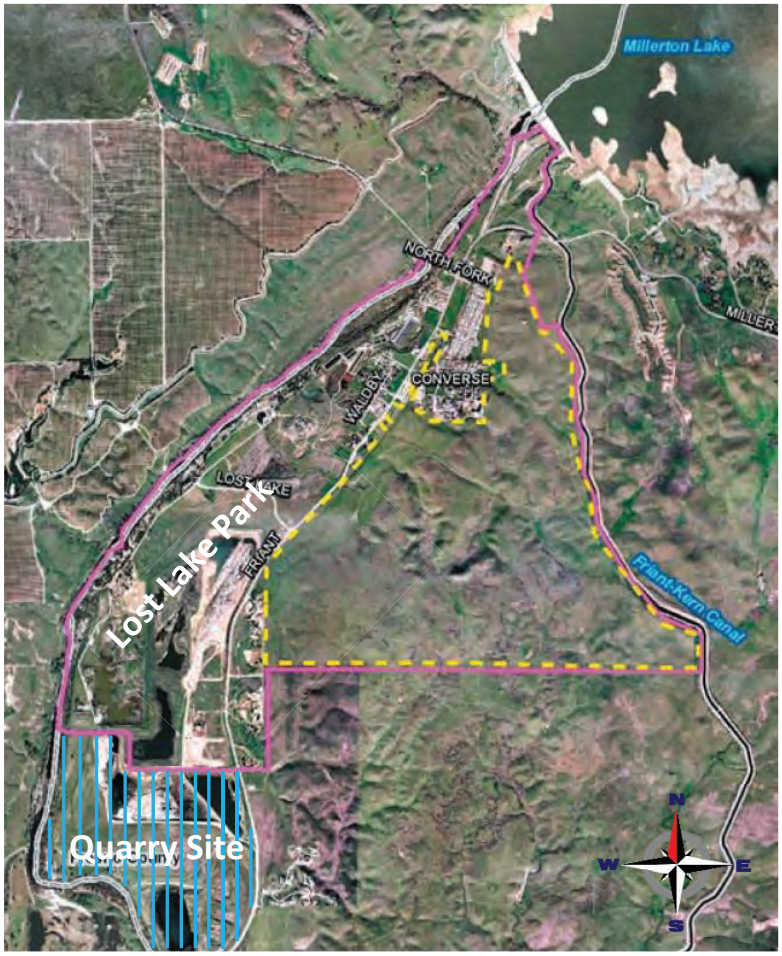
Dear Mr. Randall:

These comments on the CEMEX Rockfield Quarry Project Draft Environmental Impact Report (EIR) address hydrological conditions adjacent to and directly north of the Quarry Site. Comment 559-1

Having read the Draft EIR for the CEMEX mining project as well as County documents related to the proposed Friant Ranch housing project northeast of the Quarry Site and the Lost Lake Park Master Plan, I've come to the conclusion that the Draft EIR fails to include all significant information about groundwater and surface water flows north of the project site.

The purpose of this comment letter is to present that information, to ask for additional review and to propose a new adverse impact and environmental mitigation measure.

The map are the right shows the project Quarry Site (blue striping), the proposed Friant Ranch housing development project (yellow boundary line) and the proposed expansion of the Friant Community Plan (pink boundary line).



Comment 559-2

Groundwater in the vicinity of the Quarry Site generally flows from north to south, which means that ground water underlying Lost Lake Park will be captured in the future quarry pit. According to an analysis by EMKO Environmental, Inc., at present and under normal conditions, the inflow of groundwater into the quarry pit is approximately 95 acre-feet per year.[1]

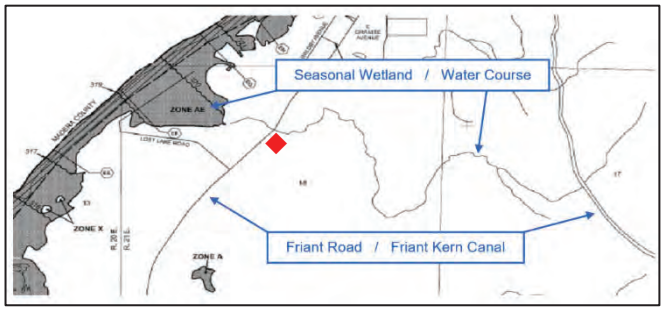
Comment 559-2 Cont.

But there are several conditions under which groundwater flow into the quarry pit could be much higher. The sources of water are these (1) rainfall on hills one to two miles northeast of the Quarry Site, (2) treated effluent from the wastewater treatment plant for the Friant Ranch housing project, (3) flood waters from the San Joaquin River and (4) water diverted from the outlet of the fish hatchery to ponds within the park.

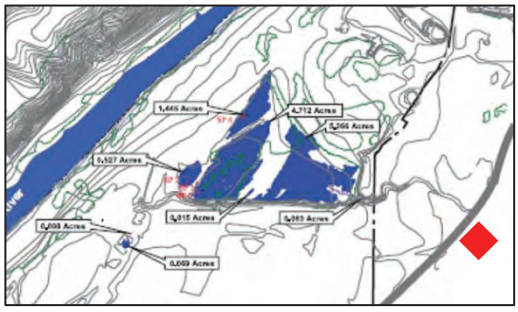
Rainfall

Comment 559-3

Below are two illustrations. The illustration at the left is from a portion of a FEMA flood insurance map[2] showing a water course flowing east to west that drains an area east of Friant Road into Lost Lake Park. The illustration at the right is from the 2011 Lost Lake Park Master Plan.[3] It shows the boundaries of the seasonal wetlands fed by that water source. These wetlands lie just north of the park entrance road (Lost Lake Road). The red diamond ◆ pinpoints the same location on both maps.



Seasonal water course emptying into Lost Lake Park



Seasonal wetlands within Lost Lake Park

Treated Effluent

Comment 559-4

In February 2023, the County of Fresno circulated a revised Draft EIR for the "Friant Ranch Project," which encompasses both a revision of the Friant Community Plan and the proposal for a new Friant Ranch Specific Plan — a 2,270-unit, age-restricted (55+) residential development.

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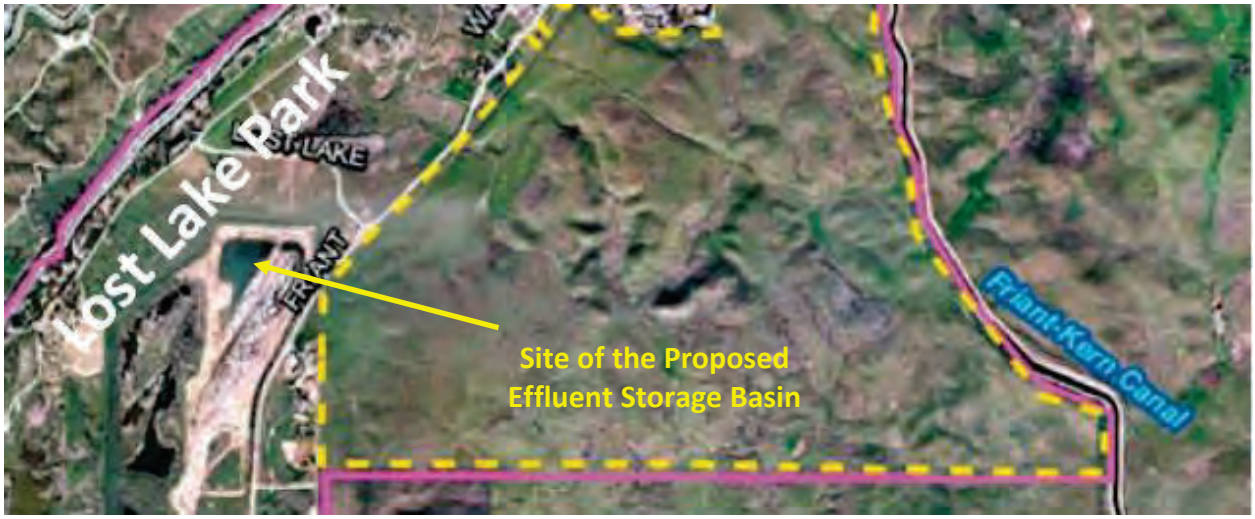
[1] "Based on the aquifer properties from the aquifer pumping tests, KDSA (2021) estimates that the groundwater flow under the Quarry Site in the alluvium and weathered rock is approximately 95 acre-feet per year, or about 60 gpm. In the hard rock, the estimated groundwater flow under the site within the depth interval to be mined is estimated at 80 acre-feet per year, or about 50 gpm. Thus, the total groundwater flow under the site totals about 175 acre-feet per year, or 110 gpm. As noted by KDSA (2021), discharge of treated wastewater from the Friant Ranch development project to the Beck Ranch property, once that development project is completed, would increase the amount of recharge and groundwater flow to the north of the Quarry Site. [DEIR Appendix G-4 (Revised Hydrology and Water Quality Analysis Report, Rockfield Modification Project, Fresno County, California, page 19)

[2] FEMA Flood Insurance Map Panel 1030 of 3525, revised February 18, 2009

[3] Figure 3-4 (Potential Waters of the United States) from the April 18, 2011 Lost Lake Park Master Plan, page 29. The Lost Lake Master Plan is found on the County of Fresno website using this path: Home / Departments / Public Works and Planning / Divisions of Public Works and Planning / Resources and Parks Division / Parks / Lost Lake Recreational Area.

Comment 559-4 Cont.

The project's wastewater facility would be situated on the west side of Friant Road just south of the park entrance. Serving Friant Ranch and other users in the Friant area, the wastewater facility would store tertiary-treated effluent in an existing 25-acre borrow pit commonly known as the "Beck pond."



Several studies over the years have yielded mixed findings as to whether treated effluent from that storage basin would seep into groundwater.

For example, in 2009, Provost & Pritchard Consulting Group concluded that there would be little if any flow to groundwater.[4] The conclusion was based on observations of a similarly-configured pond located at the northeast corner the Quarry Site, which was reported to lose water only through evapotranspiration.

Two years later at a February 1, 2011 Fresno County Board of Supervisors hearing to approve the Friant Ranch Project, a consultant representing CH2M Hill (a company that had designed, constructed and operated wastewater treatment plants in California since 1946), testified[5] that leakage from the Beck pond would likely be between 9 and 12 acre-feet per year (3 to 4 million gallons. The consultant said,

> "*Now there has been an estimate of how much of the water could potentially leak through the bottom of the [Beck] pond into the groundwater system and that's shown here as about 3 to 4 million gallons [per year]. It's the potential leakage out of the pond into the groundwater system….*"

The estimated seepage from the Beck effluent storage pond rose considerably with an October 2012 report by Kenneth D. Schmidt & Associates titled *Groundwater Conditions at and in the*

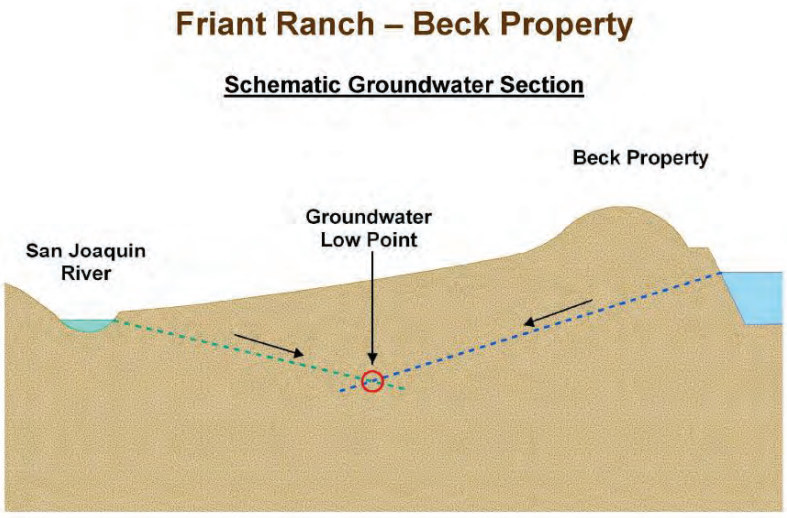
[4] March 18, 2009 memorandum from Provost & Pritchard Consulting Group titled "*Friant Ranch ADEIR Evaluation of the Beck Property for Effluent Storage & Reclamation*," page 2.

[5] Testimony of Joe Glicker, CH2M Hill, before the Fresno County Board of Supervisors for the approval of the Friant Community Plan Update and Friant Ranch Specific Plan as reported on pages 008847 and 008848 in the administrative record for Fresno County Superior Court Case No. 11CECG00726 (Sierra Club, Revive the San Joaquin and League of Women Voters of Fresno vs. County of Fresno).

Vicinity of the Beck Ranch.[6] On pages 34 and 35 of that report are calculations supporting a conclusion that seepage from the storage pond will actually approximate 69-acre feet per year.

Comment 559-4 Cont.

That same report also concluded that seepage would not reach the river, that it would percolate a short distance west and south to neighboring San Joaquin River Conservancy ponds where it would evaporate. As illustrated at the right, the report also concluded that due to a subterranean low point between the ponding basin and river, should effluent migrate farther westward, it would mix with groundwater and travel south toward the Quarry Site.



From a PowerPoint presentation prepared by Friant Ranch LP and shown to the Fresno County Board of Supervisors on February 1, 2011

Flood Waters

On occasion, the San Joaquin River floods. Two notable floods during the last century occurred in December 1937 with a peak flow of 77,200 cfs (cubic feet per second) and in January 1997 with a peak flow of 60,300 cfs. The 1937 flood occurred before Friant Dam was built.

Comment 559-5

River flooding can flood Lost Lake Park. The aerial photo at the right shows flooding in Lost Lake Park during the 1997 flood.

In 1997, flood waters entered the park north of Lost Lake all along the park's one-mile interface with the river. Floodwater completely filled the normally mostly-dry 38-acre lake. My personal observation was that the lake was inches from overtopping its most southern edge (area shown by the red circle). The force of the water was such that a concrete public restroom situated at the north end of Lost Lake disappeared without a trace.

A portion of Figure 6 in *Lost Lake Park Master Plan – Existing Conditions*, prepared by Design, Community & Environment for the County of Fresno, September 16, 2008

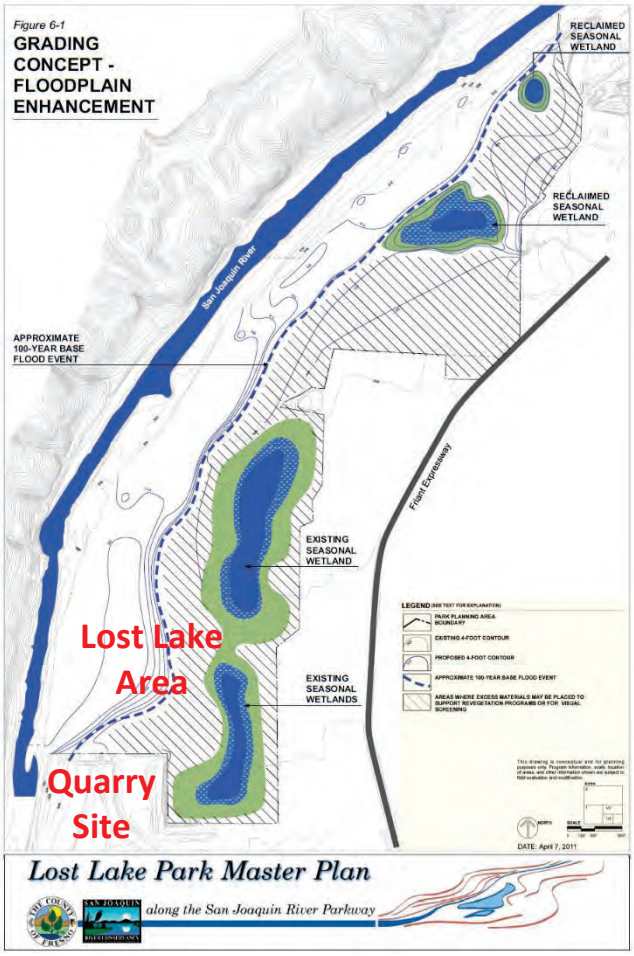
During 1997 and 1998, lake water returned to its prior level, the water either evapotranspiring or traveling south as groundwater to the Quarry Site.

[6] The Schmidt report is attached as Exhibit C to a May 14, 2014 letter from Dennis Bacopulos, Operating Manager of Friant Ranch LP, to the Fresno County Board of Supervisors for a May 20, 2024 Board hearing to approve the wastewater treatment plant designed to serve Friant Ranch.

Water Diversion

Comment 559-6

To improve habitat in Lost Lake Park generally, to prevent young salmon from being entrapped in ponds isolated from the river (the result of flooding) and to improve park safety for the visiting public, the July 18, 2021 Lost Lake Master Plan called for recontouring the entire park,[7] as illustrated in the conceptual drawing at the right.



Source: April 18, 2011 Lost lake Master Plan, page 29

Important to this discussion, the Lost Lake Master Plan also contains a proposal to divert water to recontoured ponds year-round by diverting water from the fish hatchery outlet at the north end of the park to enable water to flow southward through the center of the park.[8] The recontouring would re-establish secondary channel connectivity to the river at the southern end of park. Directing river water to the center of the park could greatly increase the amount of groundwater making its way to the Quarry Site.

Should the bulleted factors below occur simultaneously during an extremely wet year, groundwater flows into the quarry pit could substantially increase in a relatively short period of time.[9]

- Low temperatures and high humidity, decreasing evapotranspiration north of the quarry pit
- Treated effluent at capacity in the wastewater storage basin (maximum hydrostatic pressure)
- Water entering the park from the fish hatchery
- Heavy rain, with rainwater traveling to Lost Lake Park from the hills east of Friant Road
- Floodwater flowing through the center of the park filling ponds to capacity
- High river flow west of the quarry pit with increased infiltration of water into alluvial soils

If water were to accumulate at the Quarry Site faster than it could be removed through the use of recharge trenches, then excavation and/or washing of aggregate at the Quarry Site might

[7] The cumulative total of all earth moving activities is projected to be between 1.5 million and 1.9 million cubic yards of material. The existing 20-foot high piles overburden from prior mining activity within the park would be used to partially fill existing ponds and create gentler terrain throughout the park.

[8] April 18, 2011 Lost Lake Park Master Plan, page 68.

[9] Elevated rainfall in 2023 "resulted in…a rapid increase in groundwater levels across the entire [Quarry Site]…." [Draft EIR Appendix G-6 (*Revised Hydrology and Water Quality Analysis Report*), April 4, 2024, page 3]

need to pause. Should that occur, there may be an interest on the part of mine operators to move water from the Quarry Site to the San Joaquin River. Comment 559-6 Cont.

There being no analysis that I can find in the Draft EIR regarding this matter, I see the need to identify a new potential adverse impact along with a mitigation measure to reduce the impact to a level of insignificance. Comment 559-7

Adverse Impact: Violate surface water quality standards or otherwise substantially degrade the water quality of the San Joaquin River due to water on mined lands entering the San Joaquin River.

Mitigation Measure: The mine operator shall ensure that water does not move from any "mined lands," as defined in Section 2729[10] of the Surface Mining and Reclamation Act, to the San Joaquin River.

In addition to recommending the adverse impact and mitigation measure written above, I also have a request and a question: Comment 559-8

Request: I ask that the Final EIR include an analysis of the combined impact of the environmental conditions described above where rainfall, high river flows and water flowing into Lost Lake Park from flooding, the wastewater treatment facility and the fish hatchery combine to increase water flowing into the quarry pit. Given these conditions, what is the maximum rate at which the quarry pit could fill with water? And given these same conditions, what is the maximum rate at which the recharge trenches could move water out and away from the quarry pit? The analysis should take into consideration the information presented in the March 18, 2009 memorandum from Provost & Pritchard, namely, that the pond at the northeast end of the quarry pit does not offer recharge potential. The analysis should also take into consideration that under these same conditions the recharge trenches on the north side of the quarry pit (adjacent to Lost Lake Park) and the recharge trenches on the west side of the quarry pit (adjacent to the river) are unlikely to move water away from the quarry pit as ground water below those trenches would be moving southward and eastward, respectively, toward the pit.

Question: For me, the Draft EIR does not describe well the hydrological connection between the river the Quarry Site. Page 4.10.113 reads as follows: Comment 559-9

> "*The base flows within the San Joaquin River are typically at or below the elevation of the base of the alluvium on the Quarry Site. Thus, flows from the San Joaquin River toward the Quarry Site within the alluvium can only occur during the infrequent and relatively short-term high flow periods. Due to the recharge trenches along the west side of the Quarry Site, groundwater levels in the alluvium and the weathered rock would be maintained consistent with existing conditions. As a result, there would be no significant change in the*

[10] SMARA §2729 defines *Mined Lands* as "*the surface, subsurface, and ground water of an area in which surface mining operations will be, are being, or have been conducted, including private ways and road appurtenant to any such area, land excavations, workings, mining waste, and areas in which structures, facilities, equipment, machines, tools, or other materials or property which result from, or are used in, surface mining operations are located.*"

volume of potential inflow from the river into the quarry during high flow events through the alluvium and weathered rock as a result of the project."

Comment 559-9

What are the actual elevation differences between the surface of the river at high and low flows compared to the elevations of weathered rock and hard rock at the western edge of the Quarry Site?

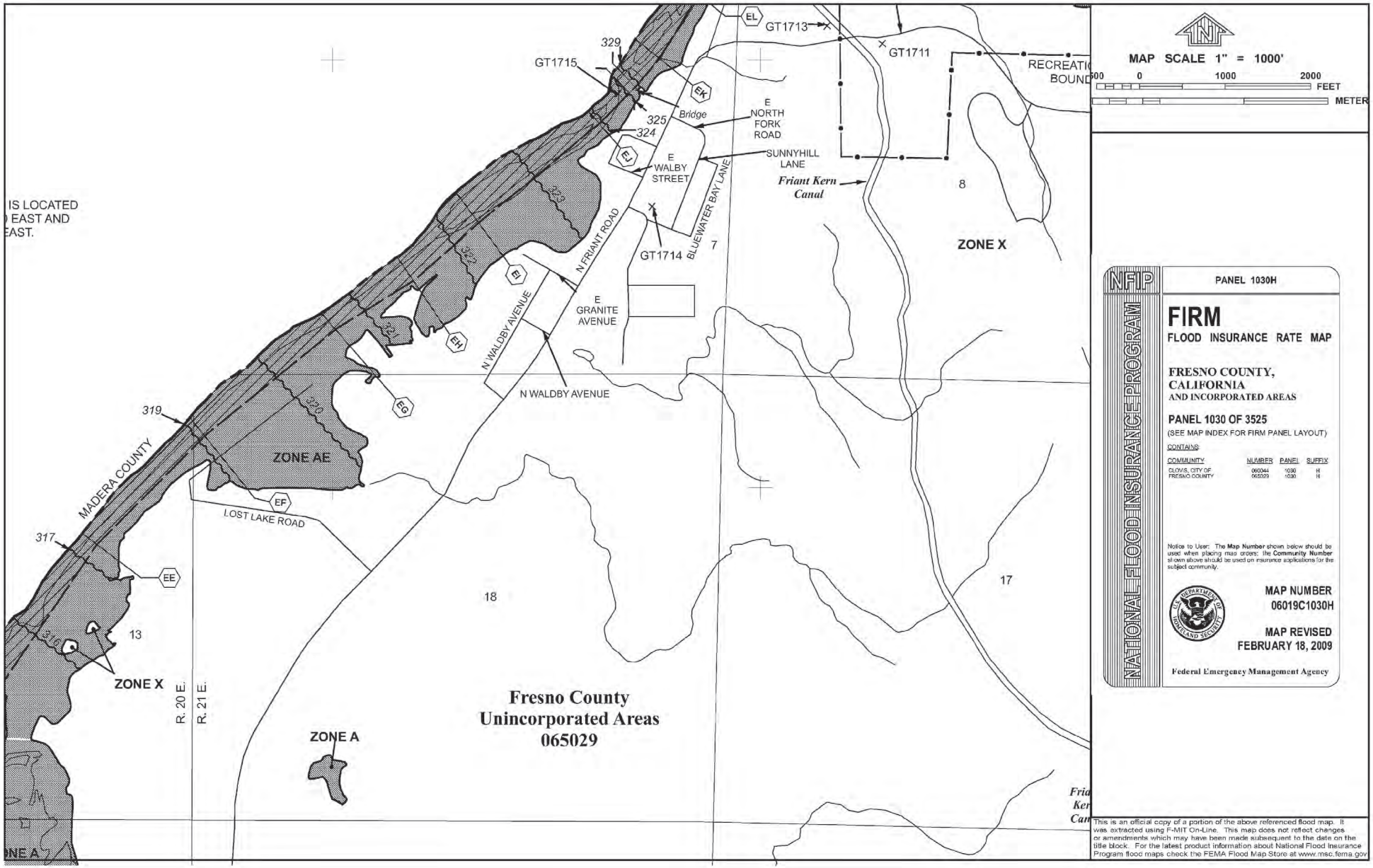
Please find attached the following documents:

Comment 559-10

- FEMA Flood Insurance Map Panel 1030 of 3525, revised February 18, 2009
- March 18, 2009 memorandum from Provost & Pritchard Consulting Group titled "*Friant Ranch ADEIR Evaluation of the Beck Property for Effluent Storage & Reclamation*
- Partial testimony of Joe Clicker before the Fresno County Board of Supervisors on February 1, 2011
- *Groundwater Conditions At and In the Vicinity of the Beck Ranch*, Kenneth D. Schmidt Associates, October 2012 (attached as Exhibit C to a May 14, 2014 letter from Dennis Bacopulos, Operating Manager of Friant Ranch LP, to the Fresno County Board of Supervisors for a May 20, 2024 Board hearing to approve the wastewater treatment plant designed to serve Friant Ranch).

Thank you,

Radley Reep
radleyreep@netzero.com


MAP SCALE 1" = 1000'
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FEET
METER
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PANEL 1030H
FIRM
FLOOD INSURANCE RATE MAP
FRESNO COUNTY, CALIFORNIA
AND INCORPORATED AREAS
PANEL 1030 OF 3525
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
CLOVIS, CITY OF 060044 1030 H
FRESNO COUNTY 065029 1030 H
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER
06019C1030H
MAP REVISED
FEBRUARY 18, 2009
Federal Emergency Management Agency
NATIONAL FLOOD INSURANCE PROGRAM
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov
Fresno County
Unincorporated Areas
065029
ZONE AE
ZONE X
ZONE A
MADERA COUNTY
N FRIANT ROAD
E NORTH FORK ROAD
E WALBY STREET
SUNNYHILL LANE
BLUEWATER BAY LANE
E GRANITE AVENUE
N WALDBY AVENUE
LOST LAKE ROAD
Friant Kern Canal
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MEMORANDUM

To: Bruce O'Neal

From: John Kirk, C.E.G., C.H.G.

Subject: Friant Ranch ADEIR
Evaluation of the Beck Property for Effluent Storage & Reclamation

Date: March 18, 2009

Provost & Pritchard was retained to investigate the suitability of the Beck Property for effluent reclamation use, involving both short-term storage and ultimate disposal of reclaimed wastewater by irrigation of agricultural crops. The following summarizes the property, our investigations, our findings and conclusions.

Beck Property

The Beck property is the former 150-acre CEMEX gravel extraction facility south and east of Lost Lake Park. The site contains an existing mining pit approximately 25 acres in size . The pit has been excavated to hard, resistant granitic bedrock in the deepest parts of the excavation. Native soils overlying the bedrock are highly permeable sands and gravels deposited by the San Joaquin River. The mining pit will be slightly expanded and used as an effluent storage pond for seasonal irrigation of the remaining lands on the site. A maximum of approximately 100 days of effluent will be stored.

A pipeline from the proposed Friant Ranch wastewater treatment plant (WWTP) to the Beck Property would be constructed within disturbed areas directly adjacent to existing Friant Road. Prior to disposal at the site, the effluent will be treated to a level that is consistent with Title 22 requirements for the unrestricted use of reclaimed water. Reclaimed water from the WWTP will be applied to the Beck property at not more than agronomic rates.

The discharge structure to implement disposal on the Beck Property could be comprised of either a structure similar to a Fresno Metropolitan Flood Control District type E outlet (vertical pipe with a cyclone cage around it), or a horizontal pipe protruding from the bank of the pit with a "duckbill" one-way automatic backflow prevention valve.

Field Investigation

A field investigation consisting of test hole drilling and reconnaissance geologic mapping was performed on October 3, 2008. The property explored is a gravel quarry with quarry pits remaining as open ponds. At the time of the field investigation there was some reclamation activity going on. While most of the gravel appears to have been removed, there remain pockets of aggregate continuing to be removed. The pit has

been excavated to bedrock in most areas and was dry at the time of the field investigation. Bedrock exposures were observed by walking the pit bottom. Test hole drilling was by hollow-stem auger. A number of areas on the pit bottom were explored. A relatively thin veneer (nil to 3-4 feet in most areas) of sand and gravel was found to overlie granitic bedrock. The bedrock is highly weathered in the upper portion and has the texture of a coarse grained sand; a highly permeable material. However, below a depth of a few inches to a few feet, the d.g. becomes firm to hard with a low permeability. This becomes firm, resistive bedrock below a depth of about 5 to 20 feet.

Groundwater was not encountered in the borings but groundwater seepage was observed at the soil/d.g. interface. The seepage is the result of groundwater flowing along this interface from groundwater originating from the foothills to the east.

Sand was observed in the pond walls to the north, west and south. Older terrace deposits and d.g. was observed in the pond walls to the east.

Infiltration and Permeability Characteristics

Permeability and infiltration capacity of the sand comprising the pond walls is high. Although no tests were performed, the material likely has an estimated permeability on the order of 5 to 20 feet per day. The underlying d.g. appears to have a moderate permeability estimated at 0.01 to 1.0 feet per day. This permeability would represent the upper few inches to feet, but the underlying hard bedrock is effectively impermeable.

Similar gravel pits located a short distance southwest of the property are owned by the CEMEX company. The CEMEX property has a number of ponds used for precipitation and runoff control. One pond of interest lies at the northeast end of the CEMEX property. This pond is similar in configuration and location in relation to the subsurface geology to the Beck pond. The CEMEX pond was excavated to bedrock and the pond walls on the north, west and south consisted of sand, while the pond wall to the east was in older terrace soils and perhaps bedrock. Jerold Coburn, the CEMEX plant manager, indicated that this pond currently has about 10 to 12 feet of water in it. The high water mark was observed some 4 feet above the current pond surface. He indicated that the only water added to this pond was from precipitation and that the last addition of water to it occurred the previous winter. The pond appears to be losing water solely to evaporation.

If water were applied to the proposed Beck disposal pond, there would be an initial very rapid infiltration capacity into the thin soil layer. As the soil pores filled, the infiltration rate would slow as the pond water head driving force is overcome by frictional losses as the water percolated laterally through the sand. There would be virtually no vertical flow. The pond would build a groundwater mound on the underlying bedrock and become a static feature varying in configuration in response to varying heads of water in the pond. The sole driving force for lateral flow would be evapotranspiration. This would effectively cease below a depth of about 3 to 5 feet in sandy soils. The CEMEX pond was observed to have this same condition of a static groundwater mound with losses to the pond solely due to evaporation.

Hydrologic Connection to the San Joaquin River

The disposal of effluent through irrigation onsite and storage/evaporation into the abandoned mining pit would have minimal impact on water quality in the San Joaquin River, which at its closest point to the pit is 1,500 feet (0.28 mile) to the northeast. Due to impermeable soil conditions and the existing groundwater flow on the site, it is unlikely that a hydrologic connection exists between the Beck Property groundwater and the San Joaquin River.

Furthermore, in the event that effluent from the disposal site actually reaches the San Joaquin River, there would be minimal impacts to water quality as the effluent will be treated to a tertiary level and will meet Title 22 requirements for unrestricted use. This conclusion is also based on the findings summarized by RBI (2008) in "Final Report, Assessment of the Friant Ranch Wastewater Treatment Plant on the Aquatic Biological Resources of the San Joaquin River," an appendix to the Water Quality Impact Assessment - Wastewater Discharge (Provost & Pritchard 2008). The RBI assessment assumed that river discharge of effluent would be required during the winter months with spray disposal on land during the spring, summer, and fall. RBI concluded that the resulting project impact to water quality from such a direct discharge would not adversely affect aquatic biotic resources of the San Joaquin River. Therefore, use of the Beck Property for all discharge throughout the year (i.e. no river discharge) would ensure that effluent does not reach the San Joaquin River. Even if a minimal amount of effluent might reach the river indirectly through the groundwater, no effluent would enter the San Joaquin River without first passing through at least 1,500 feet of alluvium, further filtering already-tertiary-treated water, and thus ensuring no adverse effects to aquatic biotic resources of the San Joaquin River.

The Water Quality Impact Assessment Wastewater Discharge (Provost & Pritchard 2008) evaluated the potential impacts of the use of reclaimed water on local groundwater quality. Because of the proposed level of treatment and the application of recycled water at agronomic rates, the irrigation of the Beck Property or other similarly situated lands with the proposed effluent is not expected to cause or contribute to a violation of a water quality criteria or objectives, and is not expected to cause a significant lowering of water quality in the groundwater.

John H. Kirk, C.E.G, C.H.G

c: Dennis Bacopulos
Bryan Wagner
Jakki McDonald
Tess Dunham
DMcG/ABL

Now Friant Ranch, in fact has evolved and this is the result of the public review process. With many of the folks that are here today, that's resulted in– some items of the community have changed and some they have not. First and foremost, Friant Ranch, and what has not changed, it is always been intended to revitalize the town of Friant and create a gateway to recreation. It has always been planned to serve the senior population that is growing within Fresno County and more importantly, it creates much needed jobs and positive economic impacts for the County.

What has changed is– Will Kettler has outlined is the community has shrunk by 500 homes. The on-site grazing and habitat preservation did increase from 245 acres to over 460 acres and the offsite grazing and habitat increased from 180 acres to over 1,000 acres. But more importantly as a result of input from many stakeholders and many groups, many of which are in this room today, Mrs. Silkwood and the family dedicated considerable resources to creating a wastewater treatment alternative that uses reclaimed water to restore a gravel mine to farming.

Now we understand that there have been important questions and comments regarding this project that should be addressed including questions on the wastewater treatment plant. So to answer these questions and any other question the Board my have on wastewater, here today on behalf of Friant Ranch is CH2M Hill, one of the most experienced wastewater treatment companies in the nation. Best known here in Fresno is the designer, builder and operator of the highly regarded Clovis Wastewater Treatment Plant, a plant that since its opening has been toured 300 times by officials, agency, and environmental groups because of its state-of-the-art technology, its aesthetics; the same technology and aesthetics that CH2M Hill will be using at Friant Ranch. So I'd like to have Mr. Glicker.

Joe: My name is Joe Glicker. I'm with CH2M Hilll and our local address is at 9700 East Ashlan in Clovis at the wastewater plant. CH2M Hill is a company that's been in business since 1946 doing exactly this kind of work; water and wastewater treatment work. We've been designing, constructing, and operating plants. We operate about 200 water and wastewater treatment plants of all types and sizes, all across the country. And here in California, we operate plants in Auburn and Turlock City, and the County Water Authority, Gilroy and Clovis. And the last couple of months we've been doing some due diligence in looking at this project and I'd like to address specific questions that are listed here: What happens to the plant? What happens with failure, safety in operations, the site, and some aesthetics?

And I like to start, we've had some discussion about recycled water. So I like to just explain the quality of the water that's coming out of the plant. What actually happens? You got sewage coming into a wastewater plant. You got recycled water that comes out of that and in California, the governing legislation that Staff has mentioned is called California Title 22. That governs the quality of the water that comes out, and the quality of the water that comes out of the plant must be suitable for landscaping, crop irrigation, unrestricted use in parks and lakes in certain kinds of lake activities with monitoring requirements in some cases and some cases not. The standards that Title 22 water has to meet are similar to drinking water standards. I'm not saying that it is drinking water. Don't misunderstand what I'm saying, but the standards that the water is being treated and the kinds of testing that it goes through is very similar to drinking water standards.

And there are about 250 systems in California that currently are using recycled water; the Clovis here locally. The Clovis plant is a recycled water plant. This shows the treatment process that goes on in the recycled water plant. The raw sewage comes in. It goes through screening steps, some grit removal. It settles out certain sands and other materials that are in the wastewater. It goes through a settling process where the chemicals are added and material is settled out. Then it goes through a biological treatment step where bacteria are grown on the wastewater and use up the nutrients in the water. Next step, it goes through is through a solid separation of membrane. So like some people have them on their homes on their drinking water taps; the membrane filters at the tap. It's a similar kind of a membrane system that the water goes through and finally through disinfection before it gets turned into recycled water.

So that's what recycled water is and I'd like to go through. You had some questions about the water balance and we spent some time looking at the existing water balance work that was done. And I just like to lay these out; these numbers are at build out.

So at full capacity of the plant, you would get between 240 and 250 million gallons of sewage that goes into the plant that all comes out as recycled water and would go into the pond, and you can see here in the graphic what happens to the water that's sitting in the pond. You're getting rainfall that was added to the pond. A certain amount of evaporation that goes out of the pond, and then the water gets reused either at Friant Ranch, in irrigation or on the Beck property in itself for agricultural reuse.

Now there has been an estimate of how much of the water could potentially leak through the bottom of the pond into the groundwater system and that's shown

here as about 3-4 million gallons. It's the potential leakage out of the pond into the groundwater system, but that's not to the river; that's to the groundwater system. And someone can answer the geology. The hydro-geology is complicated if we go into it, but that water does not go directly to the river, it leaks out at the bottom of the pond, it goes into the groundwater.

The reuse system as we've looked at it is very well thought out. The pond is an oversized pond, a large amount of storage. In a typical year, there's about a year and a half of storage in the pond. The kinds of landscape and agricultural uses and the crops that had been selected to be used on the Beck property are the kinds of crops that use reused water well. So it is a system that we feel adequately balances the water and the water that's going into the plant will get used in the reuse operations.

The next issue I wanted to address was the safety in operations and again, there are a lot of federal and state regulations that impose requirements on wastewater treatment plants. The Regional Board, the entity that issues permits for the project, will only issue a permit if we can demonstrate that the disposal capacity is ensured that it will operate the way we say it will. And to address safety concerns, there are a number of federal and state requirements in terms of design criteria; redundancy requirements so if something fails, there's a second; if a pump fails, there's another one to take up the load and so on, safety standards and then monitoring and reporting. So this is a very detailed list of requirements that treatment plants must operate under.

One of the things that we go through when we look at a plant is specific to that plant. What kind of hazards and risks are associated with the plant? We have done that preliminary hazard analysis for this project and it's very clear that all the risks are readily mitigated. In terms of operating the plant, there are no significant risks, nothing unusual. The kinds of risks that we do typically see in treatment plants, the kinds of problems that happen are power failures and so there's backup power will be provided for this project. If a pipe breaks, the sewage from the pipe might get out unto the floor and so where are those drains go so those drains have to get recycled back to the head of the plant. Those kinds of design details would all be part of this project and would be– there's nothing unusual about this project compared to many of the other pro– all the other projects that we've done.

The next area I'd like to talk about is site selection and when we look at any treatment plant, there are a couple of ideal characteristics that we like to see in a treatment plant site. The first is that it's downhill of where you're collecting the sewage from. There's an old saying that sewage runs downhill and so you want

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GROUNDWATER CONDITIONS AT AND IN THE VICINITY OF THE BECK RANCH

Draft Report

prepared for
Wagner & Wagner
Fresno, California

by
Kenneth D. Schmidt & Associates
Groundwater Quality Consultants
Fresno, California

October 2012

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EXECUTIVE SUMMARY

1. Shallow groundwater is present in alluvial deposits or weathered rock near the edges of the excavation to be used for storage of WWTF recycled water (storage pond).

2. The direction of shallow groundwater flow near this excavation was to the west in May 2012 and toward off site excavations west of the Beck Ranch. There was a groundwater-level depression in the area of these off-site excavations. The direction of groundwater flow between the San Joaquin River and these excavations was to the east, also toward this depression.

3. Shallow groundwater in the vicinity of the storage pond flows to the west and is consumed by evaporation in excavations west of Beck Ranch, and does not flow to the San Joaquin River. Seepage of recycled water from the pond will not flow to the San Joaquin River

4. The source of water in the storage pond in Spring 2012 is indicated to be primarily from precipitation and also from groundwater flow from the weathered rock and hardrock to the east and not from San Joaquin River seepage.

5. Transducer measurements of water in the storage pond and the San Joaquin River during Spring and Summer 2012 clearly indicate that the water level in the pond responded primarily to precipi-

tation and evaporation and not to changes in river streamflow. This and other evidence indicates that river water quality will not be affected by use of the excavation for storage of recycled water.

6. Inorganic chemical and stable isotope analyses indicate that the shallow groundwater near the storage pond is not from river seepage.

7. The main water producing materials at and near Beck Ranch are the weathered rock and the hardrock. Little water production is possible from the alluvial deposits, most of which have been removed by gravel mining. Storage of WWTF recycled water in the storage pond will have no impact on the quality of water from supply wells in the vicinity.

GROUNDWATER CONDITIONS AT AND IN THE VICINITY OF THE BECK RANCH

INTRODUCTION

The Beck Ranch comprises 140 acres west of Friant Road and east of Lost Lake Park, south of Friant. Part of the ranch is proposed to be used to store and reuse recycled water from the proposed Friant Ranch Project, which is located to the northeast, and from the community of Friant. An existing gravel excavation in the north part of the Beck Ranch is to be used for storage of recycled water in the winter. The amount of recycled water is projected to be about 895 acre-feet per year at full buildout of the Friant Ranch project and the community of Friant. About 38 acres of alfalfa and 20 acres of landscaping at the Beck Ranch would be irrigated with the recycled water. About 85 acres of land at the Friant Ranch would also be irrigated with recycled water. This evaluation focuses on groundwater conditions beneath and downgradient of the Beck Ranch, and the potential impacts of WWTF recycled water storage and reuse on groundwater quality and on the quality of water in the San Joaquin River.

EXISTING CONDITIONS

Figure 1 shows the locations of the ranch and selected test

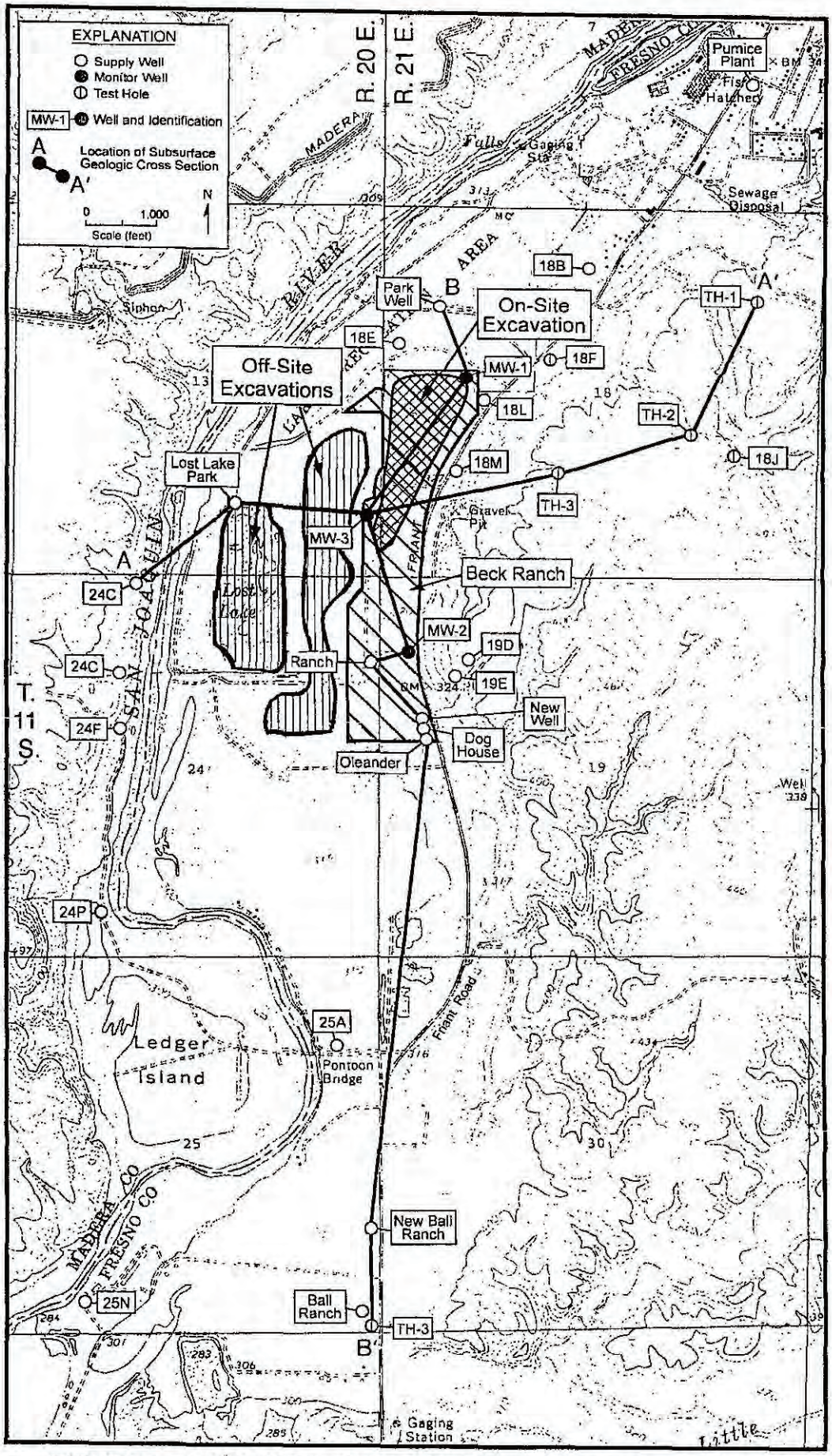


FIGURE 1 - LOCATIONS OF SELECTED WELLS AND TEST HOLES AND SUBSURFACE GEOLOGIC CROSS SECTIONS

holes and wells in the vicinity. Page and LeBlanc (1969) described groundwater conditions in the Fresno area, which includes most of the lands southeast of the San Joaquin River. Janda (1965) described stream terraces and the alluvial deposits near Friant. Schmidt (1977) prepared a report on groundwater conditions at Friant for Fresno County Water Works District 18. Simons (2006) evaluated groundwater flows at the Beck Ranch. Additional hydrogeologic evaluations have been done in the area south of the Beck Ranch for the proposed Ball Ranch project, south of Ledger Island (KDSA, 1996), and southwest of Beck Ranch for the proposed Tesoro Viejo project (KDSA, 2012).

Subsurface Geologic Conditions

The nature of the subsurface geologic materials through which the groundwater flows is important in this evaluation. Janda (1965) delineated a group of alluvial deposits that form terraces along the San Joaquin River channel downstream from Friant Dam. Pebbles and cobbles are common in these deposits, in addition to well-sorted silt and very fine sand which may have originated as glacial rock flour. Janda distinguished these Quaternary deposits primarily on the basis of soil profile development and erosional modification. The various deposits correspond to and were named for units previously mapped east of Modesto. Three forma-

tions were delineated and from oldest to youngest are: 1) Turlock Lake, 2) Riverbank, and 3) Modesto.

The Turlock Lake Formation is the oldest and highest terrace at and near Friant. This formation consists of two units and contains pumice strata which has been mined northwest of Friant. The Turlock Lake Formation crops out in the area east of Friant and west of the Friant-Kern Canal. In the subsurface, the formation may extend beneath younger deposits in the terraces at Friant. The next lower terrace, thorough which the Madera Canal passes on the northwest side of the San Joaquin River, is made of the Riverbank Formation. This formation crops out extensively south of Friant and may extend in the surface beneath a younger terrace at Friant.

The lowest terraces at and near Friant belong to the Modesto Formation. The Modesto Formation forms the floodplain of the San Joaquin River and several higher terraces. Three terraces comprised of this formation occur northwest of the river at heights of about 30, 75, and 110 feet above the river. The town of Friant is located on the 30 and 75 foot terraces of this formation on the southeast side of the river. The present channel of the San Joaquin River is underlain by recent alluvium. The terraces at Friant are indicated to be underlain by granitic rocks, which also crop out in places near the San Joaquin River.

Completion reports are available for a number of supply wells and test holes at Friant Ranch, Beck Ranch, and nearby areas. These indicate that alluvial deposits below the floodplain of the San Joaquin River normally ranged from about 20 to 80 feet in thickness prior to gravel mining. Thicker alluvial deposits are present beneath some of the higher terraces on both sides of the river, where the Riverbank deposits crop out. West of the floodplain, these deposits are indicated to be from 70 to 110 feet thick, and east of the floodplain these deposits are indicated to range from about 85 to 165 feet thick.

Most water production from active supply wells in the Beck Ranch area is obtained from the weathered zone and/or hardrock. In contrast, a number of older wells that were constructed prior to the mid 1960's (when the air rotary method came into use) tapped water in the alluvial deposits. Some of the coarse-grained alluvial deposits beneath the river floodplain between Friant and the south end of Beck Ranch have been removed by mining. Most of the resulting excavations have been left open and some contain groundwater and water from precipitation.

Subsurface Geologic Cross Sections

Janda (1985) prepared a generalized subsurface geologic cross Section (A-A') that extended from the northwest to the southeast

through the area between Friant and Lost Lake. This section indicated that the elevation of the top of the granitic rock was about the same beneath the river as to the southeast (beneath the eastern terraces).

As part of this evaluation, two subsurface geologic cross sections were prepared (Figure 1). These sections show the nature of subsurface materials at the time the wells or test holes were drilled. Because some of these wells were drilled decades ago, some of the alluvial deposits shown are no longer present, due to gravel mining. Cross Section A-A' extends from west of Lost Lake to the east, through two of the monitor wells at Beck Ranch and the south part of the excavation to be used for storage of WWTF recycled water, to the northeast, through three test holes at the Friant Ranch. This section shows subsurface geologic conditions approximately perpendicular to the San Joaquin River. Cross Section B-B' extends from the north at Lost Lake Park to the south thorough the Beck Ranch, including the excavation to be used for storage of recycled water, thence farther south to near Little Dry Creek. This section shows conditions approximately parallel to the river.

Cross Section A-A' (Figure 2) shows the base of the alluvial deposits and the top of the hardrock. Along this section, the thickness of the alluvial deposits generally increases to the east, primarily in the area east of Friant Road, where natural

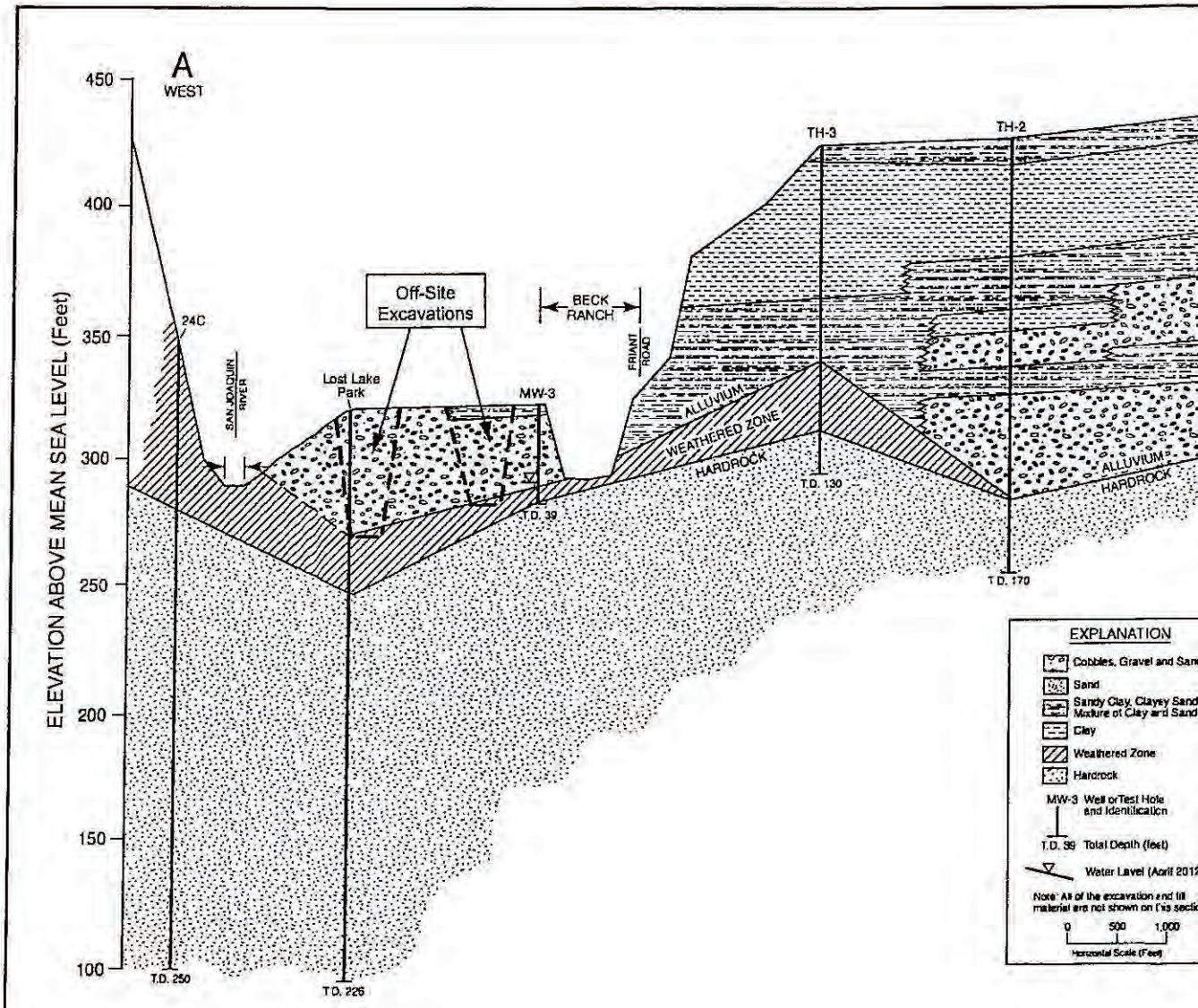


FIGURE 2 - SUBSURFACE GEOLOGIC CROSS SECTION A - A'

land surface elevations exceed 400 feet above mean sea level, compared to about 320 to 325 feet at the Beck Ranch. An exception to this trend is for the former quarry site east of Beck Ranch, where hardrock is locally present at shallow depth. There is a northeast trending ridge of hardrock that is exposed in the middle of the excavation to be used for effluent storage. When water levels are low enough, two separate ponds are present on either side of this ridge. The thickness of the weathered zone ranges from less than five feet to 70 feet along the section. Most of the water produced from below the alluvium in the test holes at the Friant Ranch (east of Friant Road) was from fractures in the hardrock below a depth of about 450 feet. The approximate boundaries of two excavations west of Beck Ranch are also shown on the section. It can be seen that there is no longer continuous alluvium between the excavation at Beck Ranch and the San Joaquin River.

Cross Section B-B' (Figure 3) extends along the river floodplain in the area east of the river (including through the Beck Ranch). The alluvial deposits thicken considerably to the south in the area south of the Beck Ranch along this section, to more than 150 feet thick near the confluence with Little Dry Creek (at Ball Ranch). In contrast to the situation near Friant and at the Beck Ranch, most of the groundwater production at Ball Ranch (south of Ledger Island) and farther downstream is from fairly thick alluvial deposits.

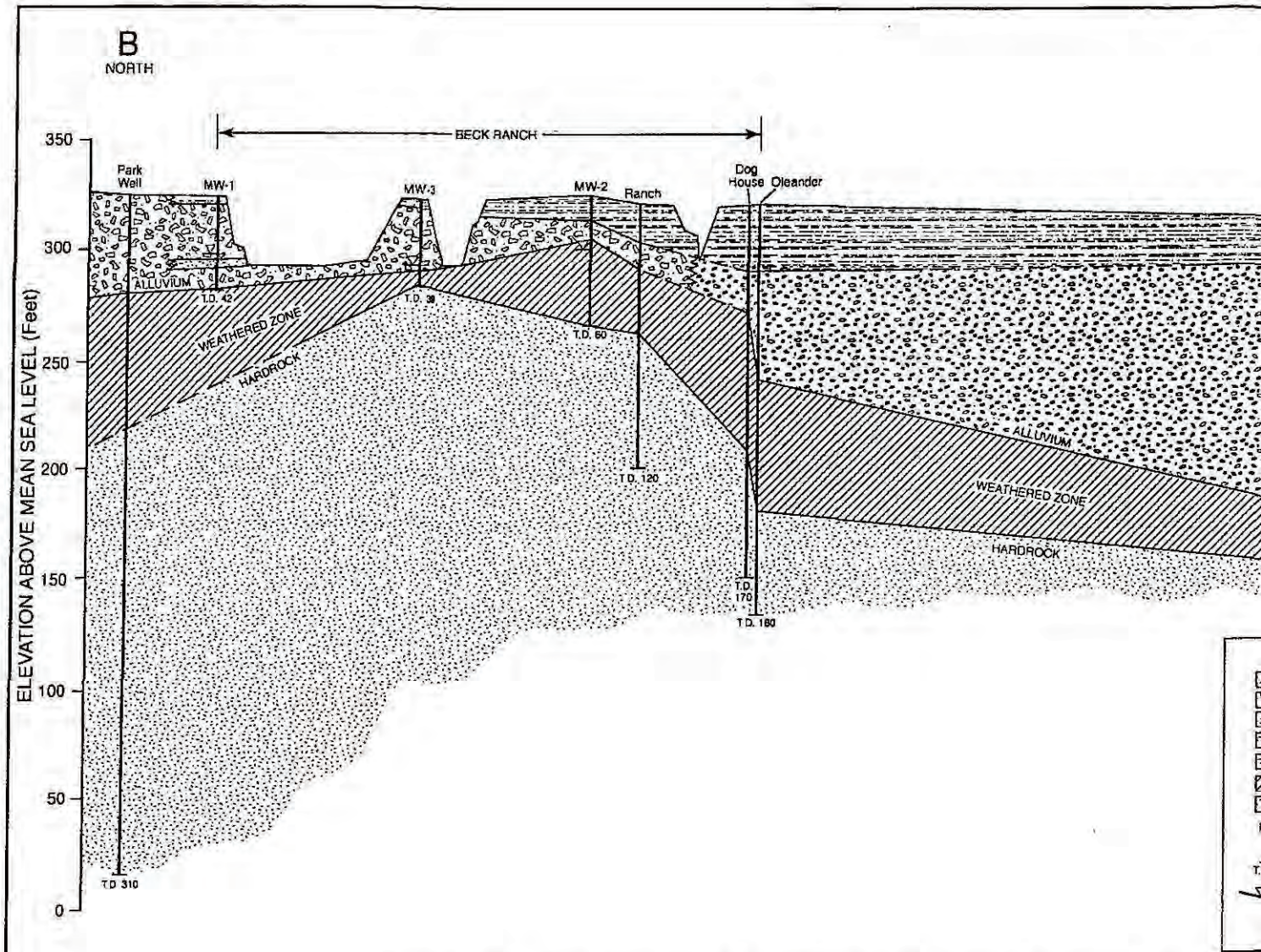


FIGURE 3 - SUBSURFACE GEOLOGIC CROSS SECTION B - B'

The weathered zone ranges in thickness from less than ten to 60 feet along this section. Clay layers become more predominant to the south along Section B-B'. The geologic log for Ball Ranch TH-3 indicates three clay layers (59 to 120 feet, 144 to 150 feet, and 155 to 162 feet in depth) that could be significant confining beds. Logs for other test holes at Ball Ranch indicate even thicker clays farther to the southwest. These clays are indicated to restrict the vertical flow of groundwater in the alluvium. At least four cobble zones were indicated at TH-3. These coarse-grained zones are likely higher permeability pathways for the lateral flow of groundwater.

In summary, there are three types of materials through which groundwater at and near Beck Ranch flows: 1) alluvial deposits, 2) weathered rock, and 3) granitic rock. The shallowest groundwater at the ranch is in alluvial deposits or weathered rock. Most of the alluvial deposits in the vicinity have been removed due to gravel mining. The remaining materials have a limited ability to yield water to supply wells.

Well Data

Supply Wells

Table 1 summarizes construction data for supply wells at the Beck Ranch. Well completion reports are provided in Appendix A.

TABLE 1-CONSTRUCTION DATA FOR SUPPLY WELLS AT THE BECK RANCH

Designation	Date Drilled	Depth (feet)	Depth Cased (feet)	Annular S (feet)
Ranch	11/80	206	73	0-25
Doghouse	12/01	170	78	0-20
Oleander (Dr. Beck)	7/76	180	80	N.A.
New	2/06	310	74	0-20

Data from well completion reports. The Oleander well was deepened from
well.

Records are available for four active wells. Two older wells at the ranch were originally from 50 to 80 feet deep, and are believed to have been open-bottomed (unperforated casing) and primarily tapped alluvial deposits. The active wells range in depth from 170 to 310 feet, and are indicated to tap weathered rock and/or the hardrock, as opposed to the alluvium. The Oleander Well is indicated to produce water primarily from the weathered rock. The Ranch Well and New Well are indicated to produce water primarily from the hardrock. The Dog House well is indicated to produce water from the weathered rock and the hardrock. The air-lifted yields at the end of drilling of each of these wells ranged from about 15 to 25 gpm.

Monitor Wells

Table 2 provides construction data for the new monitor wells at Beck Ranch. Geologic logs and completion diagrams are provided in Appendix B. These wells were designed to tap the shallowest groundwater at the site, and range in depth from 39 to 60 feet. The thickness of the alluvium ranged from 20 feet at MW-2 to 41 feet at MW-1. Hardrock was indicated at a depth of 60 feet at MW-2. Some groundwater was found in the alluvial deposits at MW-1 and MW-3, but groundwater was not present in the alluvial deposits at MW-2. Groundwater in the weathered rock was tapped

TABLE 2- CONSTRUCTION DATA FOR MONITOR WELLS AT BECK RANCH

Well	Date Drilled	Depth (feet)	Depth Cased (feet)	Perforated Interval (feet)	Annul (f
MW-1	4/26/12	42	42	30-40	
MW-2	4/30/12	60	37	30-37	
MW-3	4/27/12	39	38	30-37	

Wells constructed by Johnson Drilling Co., Inc. of Reedley using the c
method. All wells have 6-5/8-inch diameter steel casings.

by MW-2 and MW-3. Water production from these three monitor wells was low, ranging from about 1 gpm at MW-2 and MW-3 to 7 gpm at MW-1. This indicates that the shallow groundwater near the excavation has limited production potential.

Water Levels

Water-level measurements are available for wells tapping the shallowest groundwater (the monitor wells at Beck Ranch), the weathered rock and/or hardrock (in the area north of Ledger Island), and thick alluvial deposits at Ball Ranch. Water-level measurements are provided in Appendix C.

Alluvium and Weathered Zone

Water-level measurements are available for the alluvium and weathered zone from the monitor wells at Beck Ranch. Table 3 provides water-level data for these wells for May 11, 2012. Depth to water ranged from 28.7 to 33.1 feet below the measuring points, and water-level elevations ranged from 288.4 to 295.6 feet above mean sea level. The direction of groundwater flow was indicated to be to the west (Figure 4). The average water-level slope was about 37 feet per mile. This map is considered representative of the shallowest groundwater at the Beck Ranch. Based on the direction of flow, most of the shallow groundwater is in-

TABLE 3- WATER-LEVEL DATA FOR ALLUVIAL MONITOR WELLS (MAY 11, 2012)

Well	Measuring Point Elevation (feet)	Depth to Water (feet)	Water-Level Elevat (feet)
MW-1	322.73	28.70	294.03
MW-2	322.77	27.15	295.62
MW-3	321.42	33.05	288.37

Measuring point elevations surveyed by Provost & Pritchard.

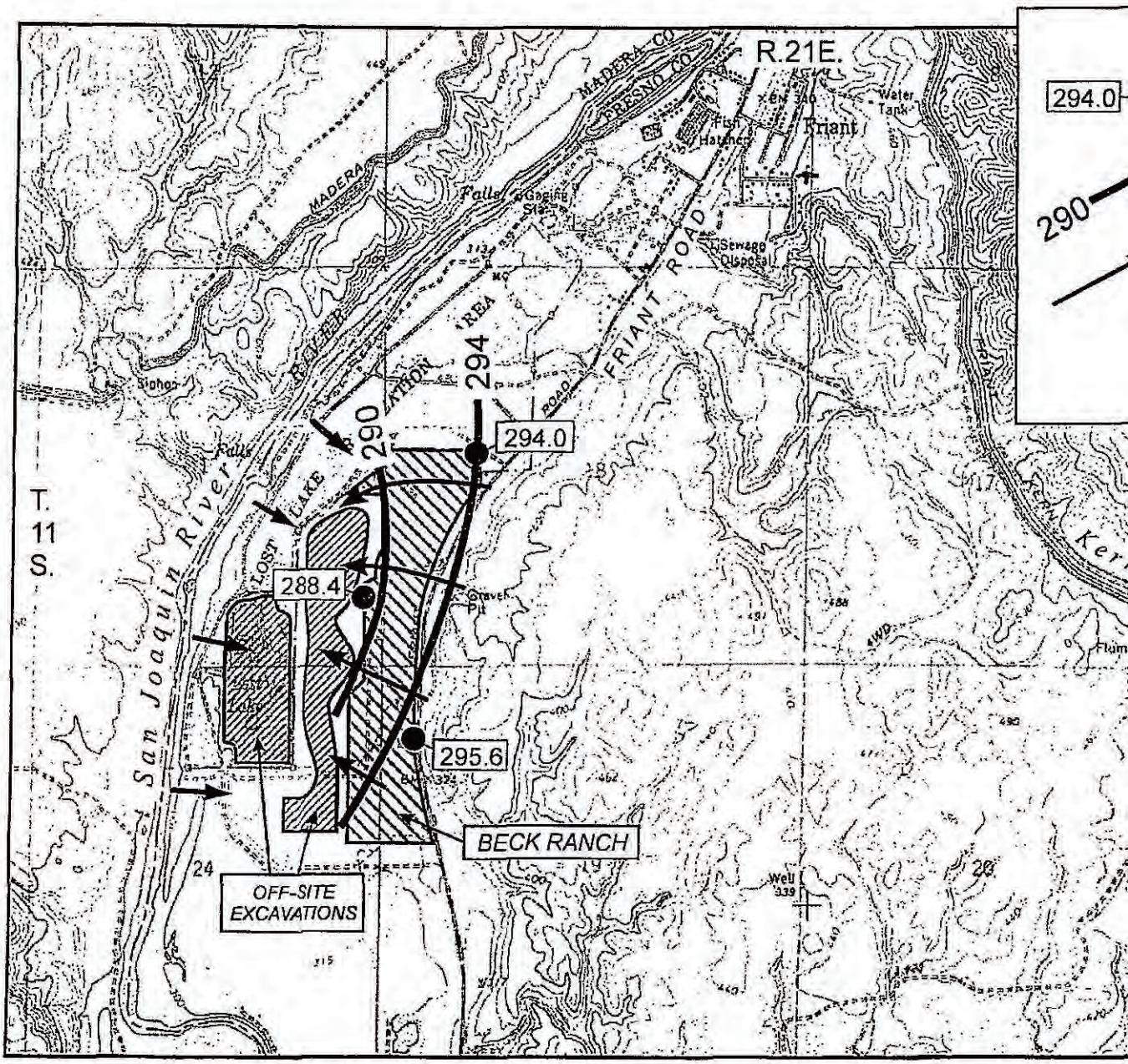


FIGURE 4 - WATER-LEVEL ELEVATIONS AND DIRECTION O
SHALLOW GROUNDWATER FLOW (MAY 11, 2012)

dicated to be derived from weathered and fractured rock east of the ranch. In addition, the groundwater is indicated to move toward the off-site excavations west of the Beck Ranch.

Simons (2006) provided water-level elevations for the mid-2000's for a number of excavations and for the San Joaquin River stage. In general, shallow groundwater in the area east of the river was moving away from the river toward excavations west of Beck Ranch in the mid 2000's. This may have been partly due to dewatering for gravel excavations at that time and due to evaporation of groundwater in these excavations.

Hardrock

KDSA measured depth to water in four deep hardrock test wells at the Friant Ranch on November 12, 1997. Depth of these wells ranged from 662 to 992 feet, and the materials above the hardrock were cased off. Depth to water ranged from 20 to 55 feet, and representative water-level elevations ranged from 314 to 347 feet above mean sea level. The direction of groundwater flow was to the southwest (Figure 5) and the average water-level slope was about 45 feet per mile. More recent water-level measurements are not available for these wells. However, because of the lack of pumping from the hardrock at Friant Ranch, conditions are likely

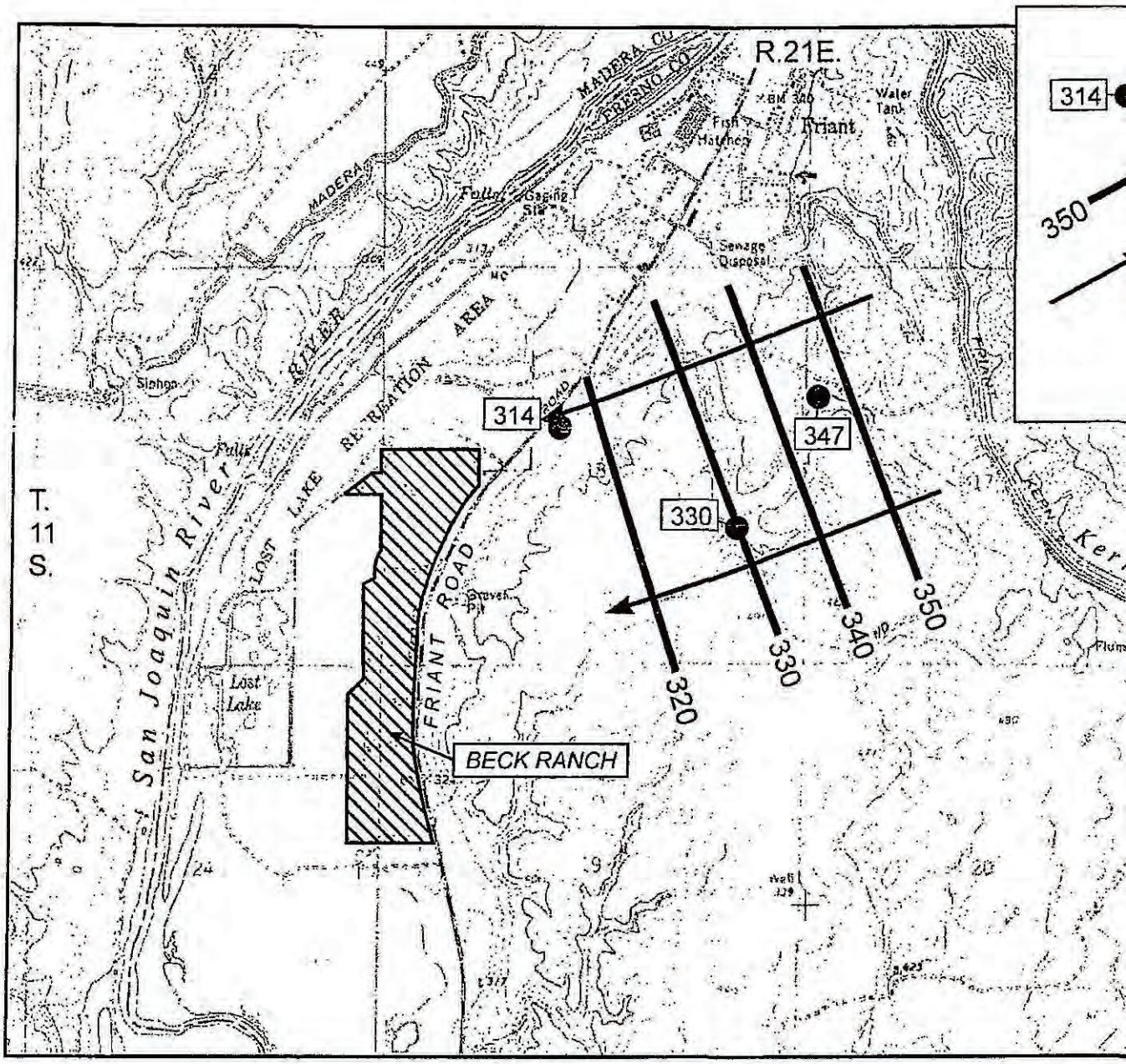


FIGURE 5 - WATER-LEVEL ELEVATIONS AND DIRECTION O
GROUNDWATER FLOW IN HARDROCK (NOVEMBER, 1997)

the same at the present as in 1997.

Simons (2006) provided water-level elevations for three of the Beck Ranch supply wells for 2003-04. Water-level elevations in the wells ranged from about 319 to 322 feet above mean sea level. A southwesterly direction of groundwater flow was also indicated.

Water-level elevations in the hardrock at Beck Ranch have been higher than in the alluvium and weathered rock. Thus groundwater in the hardrock in the area east of the San Joaquin River is indicated to move upward and discharge into the weathered rock, alluvium, and excavations.

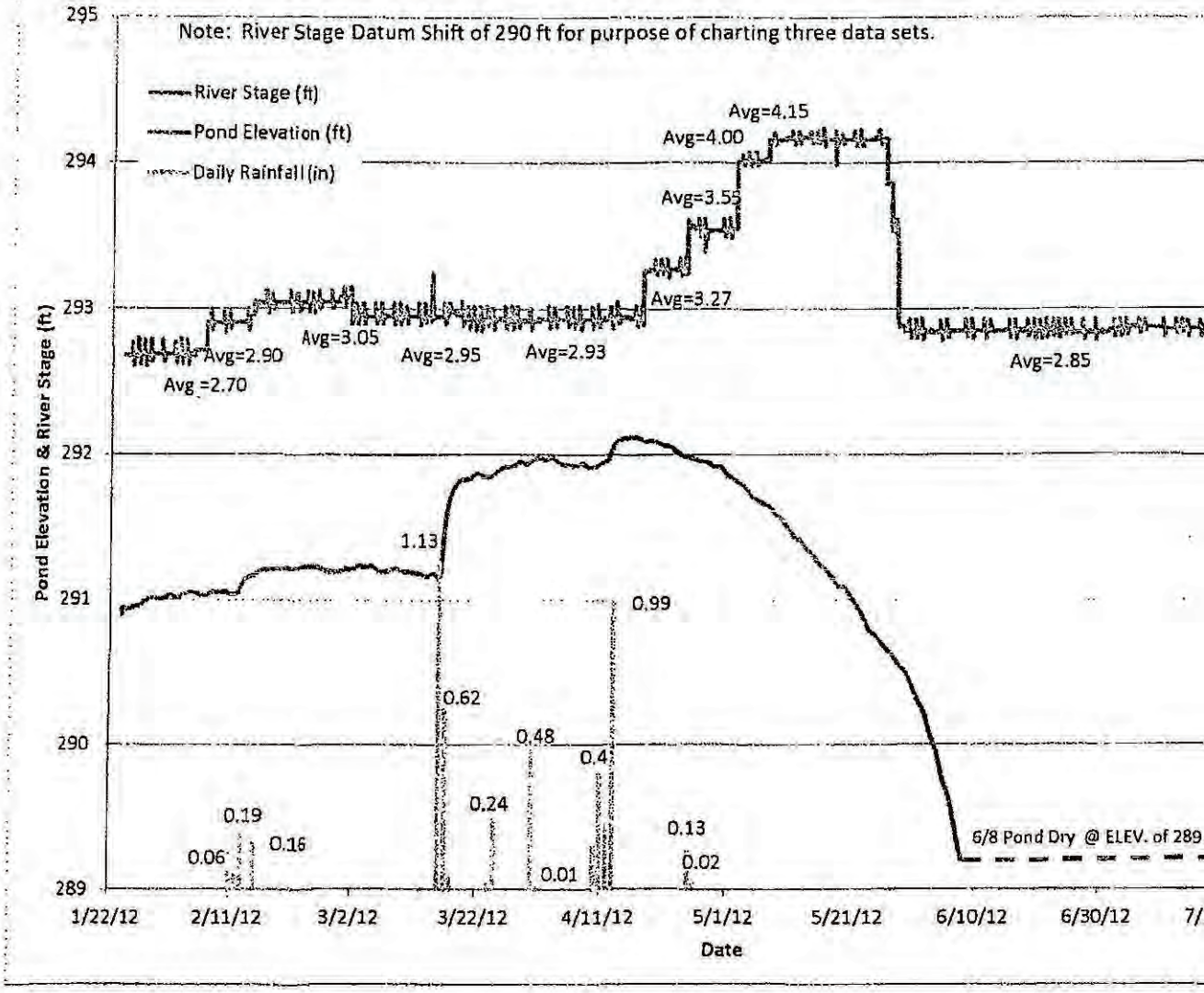
Relation of Shallow Groundwater to River Water

Alluvial deposits along the floodplain of the San Joaquin River in the area upstream of the confluence with Little Dry Creek are indicated to be underlain by hardrock, and hardrock has also been delineated both to the east and west of the alluvial deposits in this area. The groundwater in the alluvium in the lower part of this reach is indicated to be hydraulically connected to the river. However, this does not mean that shallow groundwater beneath the Beck Ranch discharges to the river. The shortest distance between the excavation to be used for WWTF effluent storage at the Beck Ranch and the downgradient San Joaquin River

(to the west) is indicated to be about 2,300 feet. However, the alluvial deposits are no longer continuous between the excavation at the Beck Ranch and the San Joaquin River (Figure 2). Water-level elevations indicate that the shallow groundwater leaving the Beck Ranch and moving to the west enters excavations west of Beck Ranch. This water is then consumed by evaporation.

In late 2011, as part of this evaluation, Provost & Pritchard installed a water-level transducer in the excavation at Beck Ranch to be used for storage of recycled water, to allow continuous water-level measurements. Reclamation operates a transducer to continuously measure the stage of the San Joaquin River at the streamgage near Lost Lake. Figure 6 shows the relation between the stage of the San Joaquin River at Friant, precipitation, and the water level in the excavation for January-July, 2012. Precipitation strongly influenced the water level in the excavation. The water-level rise of almost a foot in the excavation during mid-late March 2012 was entirely due to precipitation. Records for the stage on the San Joaquin River were obtained for 2010-12. The pond level fell significantly in late April 2012, after precipitation ended, even though the river stage rose. This was primarily due to evaporation of water in the pond. These records indicate low river stages ranging from 2.1 to 2.9 feet and high stages from about six to eight feet. Thus the normal range in river stage was about six feet during this period. On May 23,

Pond Elevation at Beck Ranch and SJR Stage at Lost Lake



2012, there were 14 acres of water in the pond and the tributary drainage area was 34 acres.

Sources of Recharge to and Discharge from Shallow Groundwater

The primary sources of recharge to shallow groundwater at the Beck Ranch is upward flow of groundwater from the hardrock and precipitation. The primary sources of discharge from the shallow groundwater at the ranch are evaporation from water in excavations, groundwater outflow to the west, and discharge to phreatophytes. There may be some additional discharge of shallow groundwater to pumping wells, but this is highly unlikely.

In summary, water in the storage pond during Spring-Summer 2012 is indicated to have been derived primarily from precipitation, and secondarily from groundwater inflow from east of the excavation. Shallow groundwater beneath Beck Ranch moves to the west and is consumed by evaporation in the excavations to the west of the ranch.

Aquifer Characteristics

A five-hour pump test was conducted on an alluvial well (7J) at the former Pumice Plant in Friant by Ken Schmidt on April 12, 1977. Well 7J was located about 6,500 feet northeast of the north edge of the Beck Ranch. The well was perforated from 30 to 40 feet in depth. The average pumping rate for the test was

37 gpm. An aquifer transmissivity of 2,330 gpd per foot was indicated by recovery measurements. The average hydraulic conductivity of the ten feet of deposits tapped by the well was thus 235 gpd per square foot.

The highest yielding of the recently installed monitor wells (MW-1) at the Beck Ranch was selected for pump testing for three hours on May 11, 2012. Appendix D contains the measurements for this test. The static water level prior to pumping was 28.7 feet deep. The well was pumped at an average rate of 7.5 gpm. The pumping level near the end of pumping was 32.2 feet. The drawdown was 3.5 feet and the specific capacity was 2.2 gpm per foot of drawdown. Figure 7 shows recovery measurements for the test. A transmissivity of 3,470 gpd per foot was indicated for the alluvial deposits tapped by the well. Using a saturated thickness of about 15.5 feet, the average hydraulic conductivity was 225 gpd per square foot. These pump test results are in excellent agreement, and indicate a relatively small range in hydraulic conductivity (225 to 235 gpd per square foot) of the alluvial deposits between Friant and Ball Ranch. The average hydraulic conductivity from these tests was 230 gpd per square foot.

In summary, the hydraulic conductivity of the remaining alluvial deposits (that have not been mined) averaged about 230

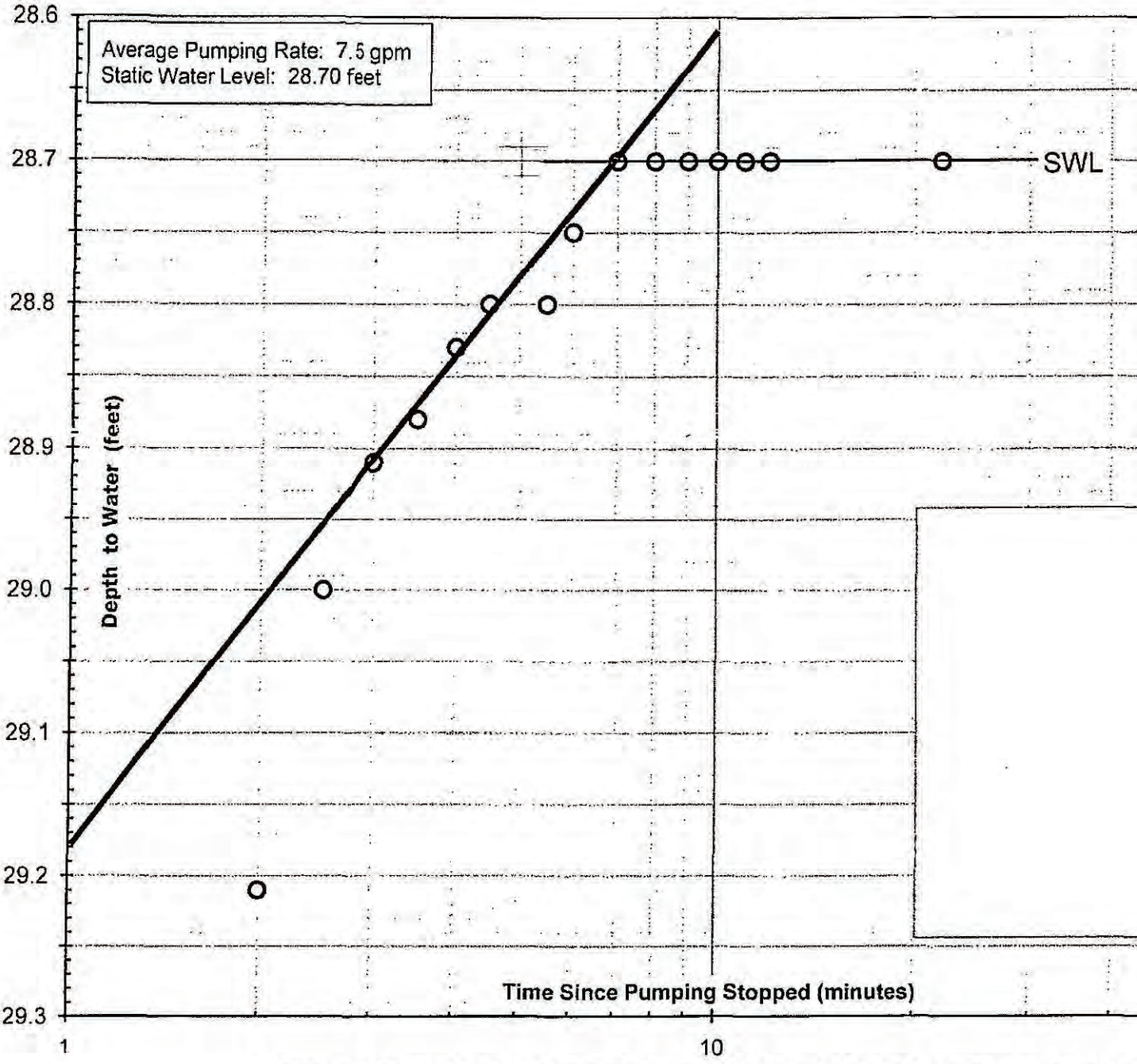


FIGURE 7-WATER-LEVEL RECOVERY FOR MW-1 PUMP T

gpd per square foot in the Friant-Beck Ranch area. This value can be used to estimate the rate of groundwater flow, seepage from the excavation when containing recycled water, and the groundwater-level rises due to water in the excavation. These are discussed in a later section of this report.

Groundwater Quality

Shallow Groundwater

As part of this evaluation, KDSA collected water samples from each of the three new monitor wells at the Beck Ranch and laboratory results are provided in Appendix E. The samples were collected by pumping after well development was completed. The sample for MW-1 was collected near the end of pumping for the three-hour pump test on May 11, 2012. Samples from MW-2 and MW-3 were collected on May 23, 2012 after removing three well volumes of water with a hand pump. The samples were preserved and provided to FGL Environmental in Santa Paula for analysis of inorganic constituents (Table 4). Total dissolved solids (TDS) concentrations ranged from 200 to 290 mg/l. The waters were of the calcium-sodium bicarbonate type. Nitrate (not nitrate-nitrogen) concentrations ranged from less than 1 to 37 mg/l, less than the MCL of 45 mg/l. Iron concentrations ranged from less than 0.05 to 0.07 mg/l, less than the recommended MCL of 0.3 mg/l. Manga-

TABLE 4-CHEMICAL QUALITY OF SHALLOW GROUNDWATER AT THE BECK RANCH

Constituent (mg/l)	MW-1	MW-2	MW-3
Calcium	26	18	45
Magnesium	9	15	12
Sodium	30	27	48
Potassium	5	7	8
Carbonate	<10	<10	<10
Bicarbonate	110	160	280
Sulfate	27	12	18
Chloride	17	11	19
Nitrate	37	16	<0.4
pH	7.8	7.8	7.3
Electrical Conductivity (micromhos/cm @ 25°C)	363	359	559
Total Dissolved Solids (@ 180°C)	260	200	290
Iron	<0.05	0.07	0.07
Manganese	0.02	0.17	0.78
Arsenic (ppb)	4	<2	<2
Date	5/11/12	5/23/12	5/23/12

Samples were collected by KDSA and analyzed by FGL Environmental of Santa

nese concentrations ranged from 0.02 to 0.78 mg/l, compared to the recommended MCL of 0.05 mg/l. Arsenic concentrations ranged from less than 2 to 4 ppb, below the MCL of 10 ppb.

Water samples from the monitor wells were also shipped to the University of Arizona Laboratory of Isotope Geochronology for determination of deuterium and oxygen-18 (the stable isotopes of water). Stable isotopes of water have proven to be valuable in determining the source or sources of a particular body of water. Concentrations of these isotopes vary, depending on factors such as the elevation of the watershed upon which precipitation falls. Thus isotopically light water would be characteristic of San Joaquin River streamflow, much of which originates from high elevations in the watershed. Delta oxygen-18 concentrations in water from the monitor wells ranged from -7.6 to -9.4 parts per thousand (ppt). Delta deuterium concentrations ranged from -62 to -70 ppt. The isotopically lightest water was from MW-3. These isotope concentrations are much heavier than river water (oxygen-18 concentration of about -16 ppt and deuterium concentration of about -120 ppt). The stable isotope results indicate that river water is not the source of groundwater near the storage pond.

Hardrock Wells

Simons (2006) provided the results of sampling water from two

of the Beck Ranch wells and an off-site hardrock well (Cummings) to the east of the Ranch. Table 5 summarizes the results of analyses of these samples by BSK Analytical Laboratories. TDS concentrations ranged from 160 to 330 mg/l. The water were of the mixed-cation bicarbonate type. The pH values ranged from 7.7 to 7.9. Nitrate concentrations ranged from 19 to 25 mg/l, below the MCL of 45 mg/l. Concentrations of iron, manganese, and arsenic were below the MCLs of 0.3 mg/l, 0.05 mg/l, and 10 ppb, respectively.

Trilinear Diagram

For decades, trilinear diagrams have also been useful to evaluate the source or sources of a particular body of water. Figure 8 is a trilinear diagram showing chemical types of the shallow groundwater, groundwater in the hardrock, and typical San Joaquin River water. The anion part of the diagram is considered the most useful because of cation exchange, which influences the relative cation percentages. Water from MW-2, which taps groundwater in the weathered zone is chemically similar to hardrock groundwater. Water from MW-1, which taps groundwater in the alluvium, plots the most distant from river water, confirming that water from this well is not from streamflow seepage.

In summary, analyses of the inorganic chemical constituents and stable isotopes in water from the monitor wells indicate that

TABLE 5- GROUNDWATER QUALITY FOR WELLS
TAPPING WEATERED ROCK AND OR HARDROCK

Constituent (mg/l)	Ranch	Doghouse	Cummings
Calcium	27	17	11
Magnesium	14	8	5
Sodium	22	17	14
Potassium	6	5	4
Carbonate	<1	<1	<1
Bicarbonate	171	99	66
Sulfate	10	9	7
Chloride	10	8	6
Nitrate	25	25	19
Fluoride	0.2	<0.1	0.1
pH	7.9	7.9	7.7
Electrical Conductivity (micromhos/cm @ 25°C)	330	240	180
Total Dissolved Solids (@ 180°C)	250	190	160
Iron	<0.05	<0.05	<0.05
Manganese	<0.01	<0.01	<0.01
Arsenic (ppb)	4.0	3.0	4.3
Date	6/22/04	8/14/05	1/25/06

Samples were collected by Melvin C. Simons and analyzed by BSK Analytical L

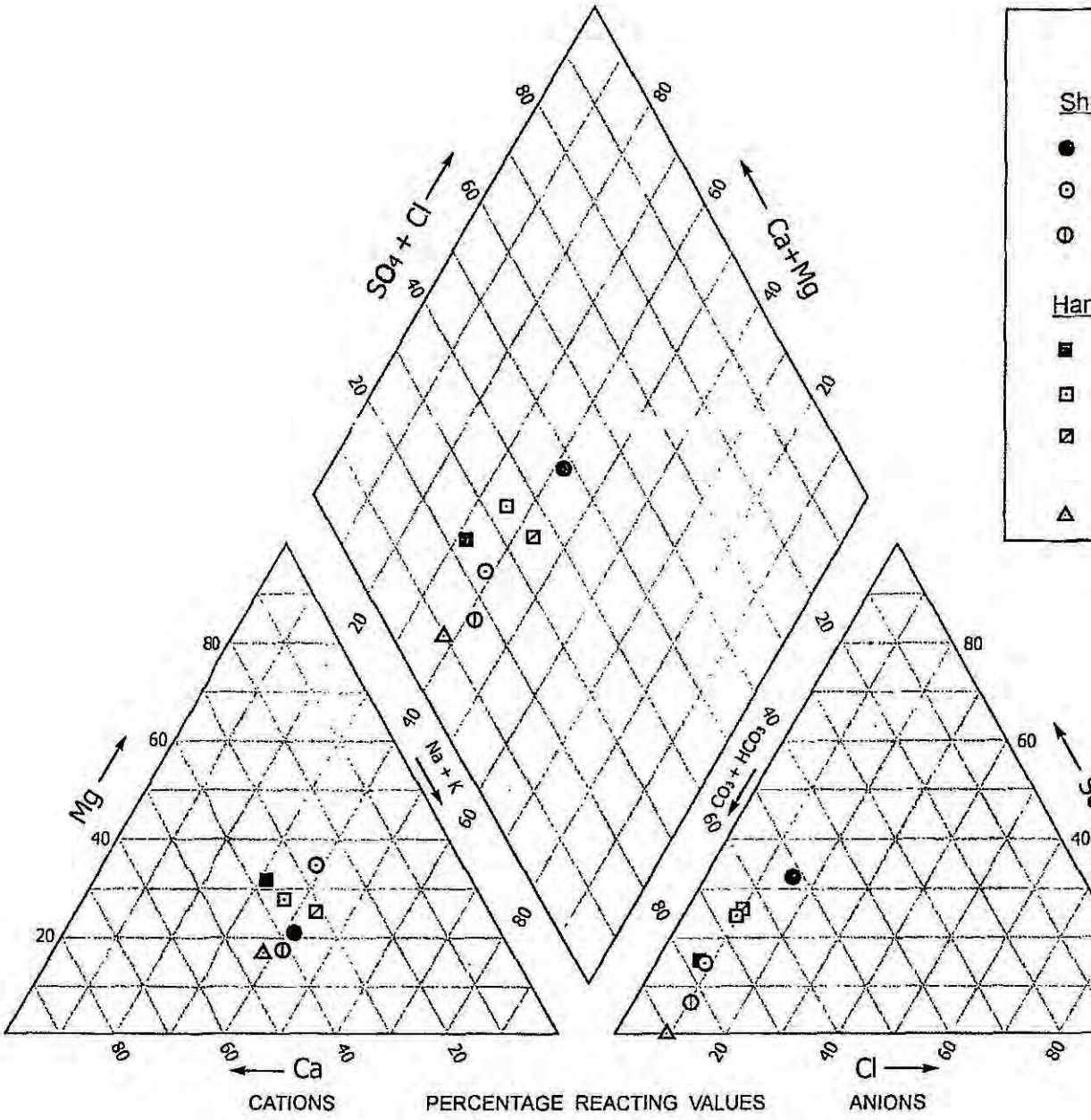


FIGURE 8 - TRILINEAR DIAGRAM FOR WATER SAMPLES

San Joaquin River seepage has not been a source of recharge to shallow groundwater at Beck Ranch. This information confirms conclusions derived from other factors, such as the direction of groundwater flow.

POTENTIAL IMPACTS OF STORAGE AND REUSE OF RECYCLED WATER

Storage of Recycled Water

Important factors in evaluating the fate of WWTF recycled water in the excavation at Beck Ranch include:

1. The water-level rise expected in the excavation.
2. Background groundwater levels relative to the base of the excavation.
3. Evaporation losses from water in the on-site excavation and downgradient excavations (primarily to the west).
4. Projected rate of groundwater flow in the alluvium.

Projected Water-Level Rise in Excavation

It is clear from a review of alluvial photos and other data, that the excavation proposed to be used for storage of recycled water has varied from having no water to having about six feet of water at the deepest location in recent years. Normal rainfall (about 12 inches per year) alone could raise the level by about one foot at the end of the winter, if seepage of water in

the excavation was minimal. This assumes that the pond covers the whole excavation, and not a small part, such as in mid-March 2012. The size of the pond in the excavation was about 14 acres on May 23, 2012. Provost & Pritchard have determined that the amount of WWTF recycled water to be stored during winter months (November-April) would be about 240 acre-feet during a normal rainfall year and up to 320 acre-feet during a 100-year rainfall year. The pond water level would be raised by about eight feet in a normal rainfall year and the pond acreage would be increased to about 30 acres (assuming no water in the pond at the start).

Groundwater in the Alluvium

As of May 2012, there were about 15.5 feet of saturated alluvium at MW-1. The projected maximum water-level rise at MW-1 when recycled water is stored in the excavation would be about six feet (less than eight feet, due to the lake leveling influence). At MW-3, there were about two feet of saturated alluvium in May 2012. The projected water-level rise at MW-3 could be about ten feet, when considering the lake leveling influence. Thus there would be a maximum of about 12 feet of saturated alluvium at MW-3 when recycled water is stored in the excavation.

Background water-level fluctuations in the alluvium at and

near Beck Ranch are indicated to normally be in the range of about five feet. Evaporation from free water surfaces is indicated to be about 4.3 feet per year (65 inches of pan evaporation times a pan factor of 0.8 for small lakes). This evaporation is made up from precipitation falling on the lakes (average of about 1.0 foot per year) and groundwater inflow from surrounding areas. Upward flow of groundwater in the hardrock is indicated to be the primary source of inflow to the excavation.

Rate of Groundwater Flow

Darcy's Law can be used to estimate the rate of groundwater flow in the alluvial deposits that are still present. The average hydraulic conductivity of these deposits, based on four pump tests between Friant and Ball Ranch, in 230 gpd per square foot. The expected hydraulic gradient is about five to ten feet per mile. Using Darcy's Law,

$$v = \frac{KI}{\theta}$$, where

v is rate of groundwater flow (ft/day)
K is hydraulic conductivity (ft/day)
I is hydraulic gradient (ft/ft)
θ is effective porosity.

An effective porosity of 0.30 is considered reasonable for the alluvial deposits in the vicinity of Beck Ranch. For a water-level slope of 37 feet per mile:

$$v = \frac{230 \text{ gpd/ft}^2}{7.48 \text{ gal/ft}^3} \times \frac{37 \text{ ft/mile}}{5280 \text{ ft/mile}} \times \frac{1}{0.3}$$

v = 0.73 foot per day or 260 feet per year.

Influence of Other Excavations

Two excavations are present at and near Lost Lake Park in the area west of the excavation at Beck Ranch (Figure 4). Each excavation with water in it can evaporate about 4.3 feet of water per acre per year. For the projected average of 30 acres of water in the on-site excavation at Beck Ranch, about 130 acre-feet of water per year could be evaporated. Assuming that about 30 acre-feet per year of this water would be from precipitation, the rest (about 100 acre-feet per year) would be from groundwater inflow and recycled water. Because the storage of the recycled water would primarily be in the winter, evaporation losses from the excavation would be more than made up for by precipitation during this period. For the two excavations to the west (combined area of about 110 acres), about 470 acre-feet of water could be evaporated.

Seepage Losses from the Excavation

Seepage losses from the excavation are expected to be primarily due to lateral flow through the alluvium beneath the edges

of the excavation. These losses can be estimated by considering the thickness of alluvial deposits beneath the edges of the excavation. The length of seepage (primarily from the northwest and south sides of the excavation) is about 3,000 feet. The average saturated thickness when recycled water is in the excavation would be about nine feet. Using Darcy's Law,

$$Q = KIA, \text{ where}$$

Q is groundwater flow (gpd)
K is hydraulic conductivity (gpd/ft^2)
I is hydraulic gradient (feet per foot)
A is area of flow (square feet).

For a water-level slope of about 50 feet per mile, which is expected near the edges of the pond,

$$Q = 230 \text{ gpd/ft}^2 \times \frac{50 \text{ ft/mile}}{5{,}280 \text{ ft/mile}} \times (9 \text{ ft} \times 3{,}000 \text{ ft})$$

$$Q = 58{,}800 \text{ gpd or } 69 \text{ acre-feet per year.}$$

Thus this seepage would be evaporated in the excavations west of the Beck Ranch. There would be no impact of recycled water stored in the storage pond on the quality of the San Joaquin River. This is primarily because there is a hydraulic low spot between the storage pond and the river and because of this evaporation.

REFERENCES

Janda R. J., 1965, "Quaternary Alluvium Near Friant, California", in guidebook for Field Conference I, Northern Great Basin and California, International Association for Quaternary Research,

VIIth Congress, pp. 127-133.

Kirk, J., 2009, "Evaluation of the Beck Property for Effluent Storage & Reclamation", Provost & Pritchard, prepared for Bruce O'Neal, Friant Ranch ADEIR, 3p.

Krazan & Associates, Inc., 1995, "Sewage Feasibility Investigation, Dr. Stephen Beck Property, Fresno County, California", prepared for Stephen Beck, 6p.

Provost & Pritchard Consulting Group, 2011, "Friant Ranch Report of Waste Discharge", prepared for Bigelow Silkwood Friant Ranch, LP, 25p.

Schmidt, K. D., 1977, "Report on Groundwater Conditions at Friant, California", prepared for Fresno County Waterworks District 18, Friant, California, 9p.

Kenneth D. Schmidt and Associates, 1996, "Groundwater Supply Report for Ball Ranch, Fresno County, California", prepared for Sienna Corporation, Fresno, California, 19p.

Simons, M.C., 2006, "Analyses of Groundwater Flow Direction, Beck Ranch, Friant", prepared for Beck Ranch, 8p.

From: Rich Rollin
To: Randall , David A.
Cc: sweaver@riverparkway.org
Subject: CEMEX DEIR Comments
Date: Monday, March 10, 2025 10:50:04 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 560-1

Dear David,I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

1. 4.19 1.10 CSA 44C Wells and Quarry Site Interactions

"Impact on water tables for domestic residential wells. The possibility of dropping water tables on the extensive dig is a huge concern for residents. 1) Cemex should install at every residential well a constant water level monitor. This should be monitored monthly by an independent contractor paid for by Cemex. 2) Cemex must provide a bond to protect every residence of this community. If the wells fail or have greatly reduced water production and the homes are no longer realistically habitable, protection for the homeowners must be in place before operations begin. Cemex must be liable and purchase the properties at high market value. There must be a penalty in place to be paid to the resident to cover costs of moving through no fault of their own."

2. 4.13.1.4. Quarry Site Ambient Noise Environment

Comment 560-2

"-The threshold of significance used is inappropriate at this site. Noise along area roadways used by truck traffic already exceeds the General Plan normally acceptable standard of 60 dBA in residential areas. -The threshold used doesn't make sense in an area where residents are already exposed to high levels of noise. Any increase of noise should be considered significant. See DEIR Table 4.13-6 at pg. 4.13-28 and Table 4.13-13 at starting at pg. 4.13-49."

3. 4.16.1 Environmental Setting

Comment 560-3

"Table 4.16-1 Recreation Facilities Near the Project Sites – Some of the table sources are dated to 2021. Several properties listed (namely Ball Ranch and Ledger Island) were not formally open to the public then. These properties are now operated by the San Joaquin River Parkway and Conservation Trust under a contract with the San Joaquin River Conservancy. There is more public use of the sites under current conditions that the project should analyze. o The description of the San Joaquin Fish Hatchery does not fully encompass the

recreational facilities available, including FINS and the Parkway Trail from the hatchery to Lost Lake Park. It is more than “limited public access” today. o The descriptions of Ball Ranch and Ledger Island do not encompass the current operational status of public access availability 7 days a week. o The descriptions of the River Center and Peck Ranch state public access by permission, which is not entirely accurate. The properties have regular operating hours and is open to the public daily.”

Comment 560-3 Cont.

My primary concern is this: the DEIR , as you can conclude from the comments above, is wholly inadequate to the proposed expansion of activity. The DEIR fails in most instances to set out any sufficient regimen of monitoring or mitigation. The DEIR should, at the very least, be re-submitted for public comment. The 45 day comment period was not long enough to address all the inadequacies in the document. if additional comment time is not allowed, then the DEIR should be rejected by the Board of Supervisors as not adequately addressing all aspects of the proposal. Cemex should take the time and expense to do it over and get it right. And finally, the whole project needs to be rejected as it is not needed to serve the economic needs of the area, and it is an environmental and aesthetic disaster.

Comment 560-4

Sincerely, Richard Rollin

From:	Laura Rosenberger Haider
To:	Randall , David A.; Gary Lasky
Subject:	Another problem with CEMEX"s Rockfield Modification proposal
Date:	Monday, March 10, 2025 6:33:57 PM

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Comment 561-1

Road oil was proposed for dust suppression. A material safety data sheet by Ergon, Inc. reveals that road oil may cause flash fires. Also, it states, "Breathing of high vapor concentrations may cause dizziness, light-headedness, headache, nausea, and loss of coordination". (https://msds.ergon.com>files>2017_11_29-sds) Probably road oil would be used when Fresno's water is used up, but instead, they should be required to import water by railroad or electric tanker truck.

From: Kristen Martinez
To: Randall , David A.
Subject: Cement project
Date: Monday, March 10, 2025 11:10:28 AM

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Report Suspicious

To whom it may concern,

I am writing in opposition to the proposed 600’ deep hole. The disruption it will cause to our precious river bottom is not worth it. The parkway trust has put so much effort into making these beautiful walk trails.

Comment 562-1

My family has owned property on the river bottom for 60+ years & would be saddened if this project is allowed to happen. Why does it have to be at the area we worked so hard to preserve? Please re-consider & not do this project. We have land to preserve & to protect.

Thank you,
Kristen Roznovsky

Sent from Yahoo Mail for iPhone

From: Stephanie Ruiz
To: Randall , David A.
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Monday, March 10, 2025 9:18:33 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

03/10/2025

David Randall, Senior Planner

County of Fresno

Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David,

Comment 563-1

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have concerns that I urge you to address before moving forward with approval.

The proximity of the CEMEX quarry and plant sites to the San Joaquin River raises concerns about potential contamination. Although these sites are not directly beside the river, contamination can spread through various pathways. One such pathway includes groundwater leaching, in which contaminants can seep into the groundwater and flow toward the river. To assess this risk, it is crucial to analyze groundwater flow direction to identify potential contaminant pathways that could lead to the river or other bodies of water utilized by the public. Surface runoff is another major factor, as rain can wash contaminated soil, waste, or chemicals into the San Joaquin River. Implementing hydrological models to predict the movement of surface runoff can help assess this risk. Additionally, airborne pollutants from mining activities may settle into the river over time, leading to contamination. There must be a good understanding of how these pollutants will disperse based on wind speed, topography, and weather conditions. Assessing the long-term impact on the San Joaquin River over the next 100 years is crucial to identify the most effective mitigation strategies. Effective

measures could include dust suppression techniques, baseline and ongoing water quality monitoring, and so forth. Furthermore, it is important to establish financial accountability for remediation efforts in case of severe contamination.

Comment 563-1 Cont.

Another concern I wish to express is the potential for this project's emissions to exceed cancer risk thresholds. Since the CEMEX quarry and plant sites are surrounded by publicly accessible areas like Ball Ranch, Sumner Peck Ranch, and Lost Park, a population-wide cancer burden assessment should be conducted to evaluate potential health impacts. It is deeply concerning and confusing that a thorough health impact assessment would not be a priority, especially considering the site's proximity to areas where people regularly visit for recreational purposes. Failing to account for these risks demonstrates a lack of responsibility in addressing potential long-term health consequences for visitors and nearby communities. Public health should be taken seriously, and comprehensive studies must be conducted to ensure that residents and visitors are not unknowingly exposed to harmful pollutants. The absence of such an evaluation raises critical questions about oversight and accountability, emphasizing the urgent need for transparency and proactive risk mitigation.

Comment 563-2

The San Joaquin River serves as a vital source of water, supports diverse ecosystems, and provides recreational and economic benefits to the region. I urge that rigorous environmental assessment and precautionary steps be taken to prevent irreversible damage. Recovery is often difficult and costly, so it is important to ensure that the San Joaquin River is able to be enjoyed for generations to come. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter.

Comment 563-3

Sincerely,

Stephanie Ruiz

From: Monica Ruiz
To: Randall , David A.
Subject: Public Opinion About: CEMEX Rockfield Expansion Project
Date: Monday, March 10, 2025 4:44:15 PM

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Report Suspicious

Dear David Randall,

I am writing to provide my public comments regarding the proposed Cemex Rockfield Expansion Project. I have serious concerns about several aspects of the proposal: Comment 564-1

- **Questioning the Need:** There is considerable doubt regarding the necessity of this project. Data indicates that our region already possesses a substantial surplus of aggregate resources, which calls into question the economic justification for extending mining operations for an additional 100 years. The projected job benefits seem minimal when weighed against the potential long-term environmental degradation and community disruption.
- **Project Impacts:** The plan poses significant risks to our community and environment. The projected deep blasting and drilling could result in excessive noise, dust, vibration, and water quality issues, particularly affecting the San Joaquin River and nearby residential areas. The expected increase in truck traffic also raises concerns about road damage and public safety. Comment 564-2 Comment 564-3
- **Flaws in Project Documentation:** Upon review, the technical appendices and project description appear to underestimate the long-term environmental and community impacts. In particular, the analysis does not fully address potential adverse effects on the local ecosystem or adequately outline the risks associated with a 600-foot deep pit and sustained high-volume truck traffic. Comment 564-4
- **Mitigation Measures:** I recommend that the County require additional and more robust mitigation measures. These should include: Comment 564-5
    - Stricter controls on blasting operations and continuous monitoring of environmental impacts.
    - A comprehensive traffic management plan to address the increased truck movements.
    - Clear, enforceable commitments to restore and protect the impacted areas, including enhanced reclamation efforts beyond the current proposals.

In light of these concerns, I urge the Board to re-examine the need for this project and to insist on more rigorous safeguards before any further approvals are considered. Comment 564-6
Thank you for your attention to these critical issues.

Best,
Monica Ruiz-Cangco
Resident, Fresno County
9118 N Rittenhouse Ln
Fresno, CA 93720

From: Kyan Salehi
To: Randall , David A.
Subject: Vote NO on CEMEX mine proposal
Date: Monday, March 10, 2025 7:12:10 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 565-1

Dear Mr. Randall,

As a resident and property owner of Bluff Avenue, I am completely opposed to CEMEX's mine proposal along the San Joaquin river based on the following:

CEMEX's argument that if the project isn't approved, the Fresno region will lose the economic and environmental benefits of locally sourced materials is completely meritless.

Per Fresnoland investigation, based on thousands of pages of technical documents, environmental reports, and state geological records, CEMEX'S mine proposal is a needless assault on the San Joaquin River to extract materials. State records reveal that the Fresno area already has a staggering surplus of locally sourced gravel which is one of the largest in the state. According to the California Geological Survey, the Fresno metro area currently has nearly 200% more gravel than is needed for the next 50 years coming from local mines. The Kings River has roughly 2 billion tons of easily available surface gravel (enough for 500 years at Fresno's current 4 million-ton annual rate). As such, CEMEX's proposal to blast a new massive crater is completely unnecessary and is purely based on corporate greed. If the Board of Supervisors approve the mine, the asset value claimed by the company would skyrocket. At current gravel prices ($10-$50 per ton), the total gravel forecasted by CEMEX to come from the site could be valued at $2 billion to $10 billion.

Comment 565-2

CEMEX'S mine proposal will have a devastating impact on the San Joaquin River.

CEMEX's plan targets a 300-acre stretch of the San Joaquin River which is already ranked among America's most polluted waterways. Decades of extraction have left virtually no surface gravel intact, according to reporting by The Fresno Bee. The significant additional extraction by the CEMEX's mine proposal would have a massive negative impact on the river's flow, salmon runs and wetlands.

Comment 565-3

CEMEX'S mine proposal will have a significant negative impact on the traffic on Friant Road.

If approved, CEMEX's project would double its gravel output, sending an estimated 400,000 trucks down Friant Road annually (up from 100,000 in the 1980s and 250,000 in 2023). Each truck causes wear equivalent to 5,000 cars, meaning the project would add the impact of 2 billion car trips to north Fresno's streets every year in a region already deadlocked over how to pay for its existing road quality crisis.

The road and traffic conditions on Friant Road are already dreadful. There have been many fatalities at every intersection of Friant. Woodward park attracts significant pedestrians and bicyclists. CEMEX's mine proposal and the significant additional traffic it brings would make Friant Road substantially more unsafe.

Wherefore, I request that CEMEX's mine proposal be denied.

Thank you for your attention.

Regards,

Kyan Salehi, DMD
(559) 300-4132

From: Shirinnaz Shauna Salehi
To: Randall , David A.
Subject: Vote no on CEMEX"s mine proposal
Date: Monday, March 10, 2025 9:22:39 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

As a resident and property owner of Bluff Avenue, I am completely opposed to CEMEX's mine proposal along the San Joaquin river based on the following: Comment 566-1

CEMEX's argument that if the project isn't approved, the Fresno region will lose the economic and environmental benefits of locally sourced materials is completely meritless. Comment 566-2

Per Fresnoland investigation, based on thousands of pages of technical documents, environmental reports, and state geological records, CEMEX'S mine proposal is a needless assault on the San Joaquin River to extract materials. State records reveal that the Fresno area already has a staggering surplus of locally sourced gravel which is one of the largest in the state. According to the California Geological Survey, the Fresno metro area currently has nearly 200% more gravel than is needed for the next 50 years coming from local mines. The Kings River has roughly 2 billion tons of easily available surface gravel (enough for 500 years at Fresno's current 4 million-ton annual rate). As such, CEMEX's proposal to blast a new massive crater is completely unnecessary and is purely based on corporate greed. If the Board of Supervisors approve the mine, the asset value claimed by the company would skyrocket. At current gravel prices ($10-$50 per ton), the total gravel forecasted by CEMEX to come from the site could be valued at $2 billion to $10 billion.

CEMEX'S mine proposal will have a devastating impact on the San Joaquin River. Comment 566-3

CEMEX's plan targets a 300-acre stretch of the San Joaquin River which is already ranked among America's most polluted waterways. Decades of extraction have left virtually no surface gravel intact, according to reporting by The Fresno Bee. The significant additional extraction by the CEMEX's mine proposal would have a massive negative impact on the river's flow, salmon runs and wetlands.

CEMEX'S mine proposal will have a significant negative impact on the traffic on Friant Road. Comment 566-4

If approved, CEMEX's project would double its gravel output, sending an estimated 400,000 trucks down Friant Road annually (up from 100,000 in the 1980s and 250,000 in 2023). Each truck causes wear equivalent to 5,000 cars, meaning the project would add the impact of 2 billion car trips to north Fresno's streets every year in a region already deadlocked over how to pay for its existing road quality crisis.

The road and traffic conditions on Friant Road are already dreadful. There have been many fatalities at every intersection of Friant. Woodward park attracts significant pedestrians and bicyclists. CEMEX's mine proposal and the significant additional traffic it brings would make Friant Road substantially more unsafe.

Wherefore, I request that CEMEX's mine proposal be denied. Comment 566-5

Thank you for your attention. --
Shirinnaz (Shauna) Salehi, Esq.
Contact: 949-636-3663

From:	Kristen Samaniego
To:	Randall , David A.
Cc:	sweaver@riverparkway.org
Subject:	Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Monday, March 10, 2025 2:13:19 PM

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Report Suspicious

Mr. Randall,

My name is Kristen Samaniego. I am a Fresno native, currently living with my family in the outskirts of Fresno County. The San Joaquin River is a landmark for our county as well as one of our largest natural resources. I have deep concerns over the future of our beloved landmark. Cemex's proposed plans to take dynamite to our river will not only put the river itself into danger but countless residents and animals as well. Aside from being a natural resource for plants, animals and humans, it is also a place that many people use for recreational purposes. This frivolous project could have a damning effect on our Central Valley for years to come as countless toxins and pollutants will be pumped into our water and air. It seems as though the belief is that "if we just do this 3 miles out of town, it won't matter" that is just not true at all.The area itself is currently occupied by many residents and animals, whose daily lives would be gravely affected by the extra traffic and noise and additional pollution the project would bring. The river itself could give way creating mass destruction even loss of life and for what? Rock that we already have in excess. Cemex must be stopped. Please hear the cries of Central Valley residents everywhere and protect our beloved San Joaquin River.

Comment 567-1

Comment 567-2

Comment 567-3 567-4

Thank you for your time and concern,
Kristen Samaniego
(A concerned citizen)

Sent from Yahoo Mail for iPhone

From: Isabel Santos-Gonzalez
To: Randall , David A.
Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date: Monday, March 10, 2025 4:46:57 PM

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Report Suspicious

Mr. Randall,

I am writing to express serious concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Comment 568-1

Given CEMEX's history of pursuing destructive, controversial projects in Fresno County and its ultimate goal of lining its own pockets with profits, the proposed mitigations are clearly inadequate. One can hardly believe with confidence that they will actually stick to any meaningful mitigations in the first place.

I am particularly concerned about threats to wildlife and the impact on our city's already horrific air quality. Comment 568-2

On wildlife threats:

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection. Comment 568-3

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment. Comment 568-4

On air quality:

The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining? Additionally, according to a Fresnoland investigation, this project would send an estimated 400,00 trucks down Friant Road annually. This project would add the impact of 2 billion car trips to north Comment 568-5

Fresno's streets, which will not only worsen road quality but also add emissions that our region does not need.

Comment 568-5Cont.

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should explore all possible alternatives to this project. At the very least, it must require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX.

Comment 568-6

Thank you for the opportunity to share my thoughts.

Best,
Isabel Santos-Gonzalez
Fresno, CA 93704

From:	Joan Schoettler
To:	Randall , David A.
Cc:	sweaver@riverparkway.org
Subject:	CEMEX
Date:	Monday, March 10, 2025 3:51:19 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior PlannerCounty of FresnoFresno, CA Subject: Comments on CEMEX Rockfield Expansion Project DEIR Dear David,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

Comment 569-1

4. Traffic and Noise Concerns

1) Potential blasting vibration damage 2) Human perception of vibration and overpressure 3) Building damage (Refer to the noise level at the San Francisco Airport and how decades later they needed to replace all the windows and door for noise control. This may be a factor now and in years to come) 4) Blasting. This is not something we want in our community. It is enough that we have jets blasting over our city disrupting teaching in classrooms, causing people at outdoor events to stop conversations, and making Fresno a much less desirable place to live. 5) Use of noise at Woodward Park, the San Joaquin Parkway, and neighborhood. 6) Noise will affect wildlife.

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter. Sincerely,

Comment 569-2

Joan Schoettler

From:	Joan Schoettler
To:	Randall , David A.
Cc:	sweaver@riverparkway.org
Subject:	CEMEX Expansion - No Thank You
Date:	Monday, March 10, 2025 3:56:04 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior PlannerCounty of FresnoFresno, CA Subject: Comments on CEMEX Rockfield Expansion Project DEIR Dear David,

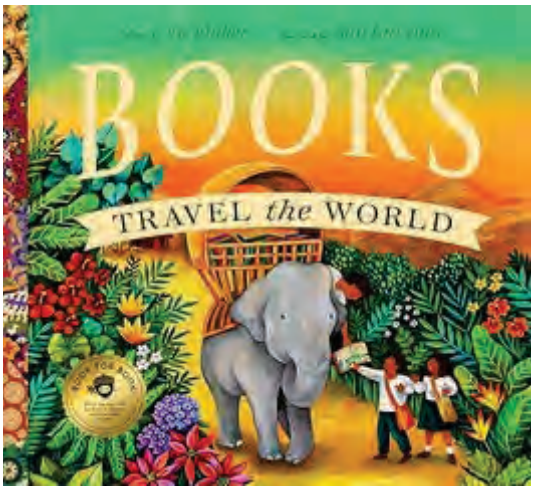
Please for your family, your friends, your community, and the greater community of Fresno, Fresno County, and the San Joaquin Valley, make use this expansion does not take place.

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter. Sincerely,

Comment 570-1

Joan Schoettler
Children's Author
joans@joanschoettler.com
joanschoettler.com
559-906-6557

COMING JULY 1, 2025!



From:	Joan Schoettler
To:	Randall , David A.
Cc:	sweaver@riverparkway.org
Subject:	Comment on CEMEX Rockfield Expansion Project DEIR
Date:	Monday, March 10, 2025 3:35:05 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior PlannerCounty of FresnoFresno, CA Subject: Comments on CEMEX Rockfield Expansion Project DEIR Dear David,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

Comment 571-1

3. Biological Resource Impacts

These are the concerns I have regarding the biological resource impacts: 1) DEIR does not adequately analyze potential impact of blasting on wildlife. 2) Impact on the fish and wildlife in and close to the river 3) Threat to the Swainson's hawk 4) Obstructing the natural flow, altering the river bed channel or bank 5) Protecting the provisions of the California Fish and Game Code Section 1600 et seq. Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter. Sincerely,

Joan Schoettler

Comment 571-2

Comment 571-3

From:	Joan Schoettler
To:	Randall , David A.
Cc:	sweaver@riverparkway.org
Subject:	Comments on CEMEX Rockfield Expansion Project
Date:	Monday, March 10, 2025 3:27:25 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior PlannerCounty of FresnoFresno, CA Subject: Comments on CEMEX Rockfield Expansion Project DEIR Dear David,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval.

Comment 572-1

2. Air Quality and Dust EmissionsMy concern is for the air quality for the next 100 years. With the increased number of trucks, dust from the drilling, and increase of air particles in a part of California that already has poor air quality should be enough to decide that this CEMEX project does not work in the benefit of Fresno County and the San Joaquin Valley in general.

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter. Sincerely,

Comment 572-2

Joan Schoettler

From: slugsucker
To: Randall , David A.
Cc: sweaver@riverparkway.org
Subject: CEMEX Rockfield Expansion Project
Date: Monday, March 10, 2025 4:38:02 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 10, 2025
David Randall, Senior Planner
County of Fresno Department of Public Works and Planning

Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

Comment 573-1

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

First, allow me to tell you a bit about myself and my experiences with the San Joaquin River in and around this particular site. I moved to Fresno in 1990 from the very crowded and developed megalopolis of Los Angeles. I have been an avid outdoor enthusiast since my early teen years, and I find the Fresno region is not far from multiple areas of natural beauty and great nature experiences without the overwhelming presence of humans with their noise, traffic, pollution, development, and other telltale signs that detract greatly from connecting with nature. I am not just a member but an event organizer in a large community of hikers that plans regular outings all over Central California, but not limited to just that either. It is known as the Central Valley Hiking Group with over 2,000 members. Over the years, I have personally led several groups on various hikes along the river parkway at River West (both Fresno and Madera sides, Ball Ranch, Sumner Peck Ranch, Ledger Island, Sycamore

Island, Lost Lake, and at the broken bridge in Friant. When it's not too hot, I enjoy taking my dogs down to the river in these areas regularly too, at least 1-2 times a month. Plus, I've introduced these areas to friends and visitors outside my hiking club. In my opinion, all of these places I mentioned offer some of the best natural riparian woodlands experiences and so close to our city for people of any age with the possibility to observe all kinds of interesting wildlife and plants. I've seen young bobcats, foxes, beavers, several deer in herds or alone, coyotes fairly close by, bald eagles, osprey, Swainson's hawks, Coopers hawks, red-tail and red-shoulder hawks, owls with a nest of owlets, all types of herons and egrets, large flocks of majestic white pelicans and other waterfowl and avian species, plus countless other smaller animals (in fact, there is a huge rookery of egrets in the trees right along the river with multiple large nests in plain view across from the Willow Unit Ecological Reserve not too far from the Cemex plant site). One time, I even had a herd of deer cross the river from the Madera side to the Fresno side very near to me when I was at the Native American mortar station site at Ledger Island. They were actually going towards Cemex's quarry site.

Comment 573-1 Cont.

I will use the template letter provided by the conservation trust to address the specific reasons why I believe this project DEIR is inadequate and that in reality, there should not be any changes to the current methods being used to extract gravel from these sites. Also, 100 years is simply too long a period of time to renew this mining operation. 20-30 years at a time seems more reasonable.

Comment 573-2

Impacts on Water Quality & the San Joaquin River

Comment 573-3

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX’s plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 573-4

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at

Comment 573-5

different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 573-5 Cont.

Impacts on the San Joaquin River Parkway & Recreation

Comment 573-6

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 573-7

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 573-8

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 573-9

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why

Comment 573-10

was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 573-10 Cont.

Threats to Wildlife

Comment 573-11

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 573-12

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Also, I would like to add a few words of my own in conclusion. As I said at the beginning, these natural riparian areas that we have so close to a major city in this largest by population of all states are truly unique community resources and a treasure. We should be doing everything we possibly can to preserve and protect their natural status as it currently is and not doing things that increase and cause new disturbances, degrade or limit their appearance and the experience for those who visit, live nearby, and the native animal forest and river denizens that have always been there. Let's not make it more like the Southern California area that I left 35 years ago.

Thank you for your time and consideration.

Sincerely,

Daniel Schwartz
2133 E. Palo Alto Ave.
Fresno, CA 93710

From: Eli Ortiz
To: Randall , David A.
Subject: CEMEX PROJECT
Date: Monday, March 10, 2025 11:55:31 PM

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Report Suspicious

Do not approve the mining expanding project. You're ruining the chance of future generations to enjoy our natural resources.

Comment 574-1

From:	Joleen Siebert
To:	Randall , David A.
Subject:	CEMEX
Date:	Monday, March 10, 2025 2:59:36 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 575-1

It is time to protect the San Joaquin River and its parkway by stopping its destruction by CEMEX. All current information says that Fresno County has plenty of aggregate to meet its construction needs. Further, CEMEX is planning to dig a hole in the riverbed hundreds of feet deep, effectively destroying the San Joaquin River, which is a treasure for the residents of this area. Finally STOP CEMEX and its destruction of our environment.

Joleen Siebert
Reedley, CA

From: jeff single
To: Randall , David A.
Subject: Fwd: CEMEX Rockfield Quarry Modification Project EIR
Date: Monday, March 10, 2025 6:38:23 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Date: March 9, 2025 at 10:21:28 PM CDT
To: drandall@fresnocounty.ca.gov
Subject: CEMEX Rockfield Quarry Modification Project EIR

Mr. David Randall, Senior Planner
Fresno County Public Works & Planning Department Development Services & Capital Projects Division
2220 Tulare St., 6th Floor Fresno, CA 93721
drandall@fresnocounty.ca.gov

9 March 2025

RE: CEMEX Rockfield Quarry Rockfield Modification Project (EIR) 7763) and Unclassified Conditional Permit Applications Nos. 3666 and 3667. SCH No. 202006012

Dear Mr. Randall and Planning Commission members:

I have been a Fresno resident for 40 years, living near the intersection of Friant Road and Copper Avenue for the past 20 years. Much of my professional work, and personal recreation during that time has been in the vicinity of the proposed project and surrounding areas, and I have a good knowledge of the region. I also have experience in evaluating impacts and proposing mitigation for mining, oil and gas activities, urban development, and transportation projects.

Comment 576-1

I respectfully submit these comments and observations on the Rockfield Quarry DEIR.

There are many issues with the Project and DEIR. These warrant not only at least recirculation of a revised DEIR, but very reasonably support denial of the Application.

In general, issues with the Project include:

Comment 576-2

<!--[if !supportLists]-->● <!--[endif]-->The Project does not meet an identified need, as already permitted aggregate resources are almost double the 50-year forecast demand. Permits for future projects can be considered to meet currently unknown future needs.

Comment 576-3

<!--[if !supportLists]-->● <!--[endif]-->The Project would cause highly significant

alteration of the landscape and negative impacts to both existing and future known beneficial uses [It's a 400 or 600 foot deep pit adjacent to a busy regional park (Lost Lake Park), in the San Joaquin River bottom, across the river from one of the best areas along the San Joaquin (Ledger Island), adjacent to public use areas and in a viewshed. A 600 foot deep hard rock mine is well beyond reasonable use for the area.]

Comment 576-3 Cont.

<!--[if !supportLists]-->● <!--[endif]--> It creates the potential for low frequency-high risk catastrophic events such as river channel impacts during extreme floods and loss of human life from accidents and trespass incidents; these risks persist well beyond the 100-year active Project lifetime. Such events also create operational and financial liabilities for the County and other public agencies at they respond to these events. The DEIR does not propose any special authorities nor funding to facilitate the County actions nor offset County expenses.

Comment 576-4

<!--[if !supportLists]-->● <!--[endif]-->The Project's greatest and potentially most catastrophic impacts continue forever, beyond the 100 years of operation, due to presence of a 300-600 foot deep pit. The ongoing impacts from this presence, including risks to public safety and possible costs to the County, need to be evaluated and considered as part of the County's decision.

Comment 576-5

<!--[if !supportLists]-->● <!--[endif]-->The Project will affect property values of nearby existing and potential private properties, and adversely affect Fresno's reputation and ensuing ability to attract beneficial business and development. These impacts should be evaluated.

Comment 576-6

<!--[if !supportLists]-->● <!--[endif]-->Permitted aggregate mining has left the San Joaquin River corridor in poor condition in many areas but has been generally shallow enough that the sites can be reclaimed to offer some potential beneficial uses for recreation, views, and wildlife habitat, and not pose high risks from extreme flows. The proposed 400-600 ft deep pit cannot be restored and used in such a fashion. It would permanently remove that area from public uses and benefits, with no offsetting mitigation.

Comment 576-7

<!--[if !supportLists]-->● <!--[endif]-->The Project proponent, CEMEX, is a foreign corporation with an established reputation of noncompliance with regulations, and intractability in working with local governments – this creates a substantial financial liability for the County, as well as uncertainty that mitigation measures will be executed, and uncertainty about the long term robustness of mitigation, restoration and post operation conditions. This is a glaring weakness that can and should be corrected.

Comment 576-8

Specific Issues and Comments

Comment 576-9

Existing conditions/environmental baseline

The DEIR uses existing conditions as the baseline for evaluating project impacts. However, the project sites are currently largely disturbed with active mining operations, and are destined for recovery and restoration. In the absence of the proposed Project, the sites would be restored to semi-natural habitat and be generally amenable to positive viewing and public recreation, as well as have habitat value and ecosystem services. This is the future "no Project" condition, to which Project impacts should be compared. By comparing Project impacts to

the active mines at the project site, the DEIR impact analyses do not reflect the sites' conditions in the absence of the proposed Project. The analyses are inherently biased to show less significant impacts due to the proposed Project.

Comment 576-9 Cont.

The proposed Project would delay restoration and mitigation at the plant site by perhaps 70 years; the absence of the benefits this mitigation would provide is an impact that has not been disclosed nor analyzed in the DEIR. Additionally, the proposed project would eliminate the current mitigation and restoration outcomes at the Quarry site, causing impacts to habitat values, views, recreation and other beneficial uses different than those disclosed and analyzed in the DEIR.

Comment 576-10

Impact Analysis

Comment 576-11

Temporal scope

The project lifetime is 100 years. But, impacts of the presence of the proposed pit will continue well past the Project's operational life. This extremely long period of active impacts should be analyzed and disclosed. Impact analyses should encompass the 100-year active life, plus forecast past that to the conditions that will persist after project closure.

The proposed project eliminates mitigation for an existing approved project.

Comment 576-12

The restoration plan for the existing permitted Rockfield quarry includes a design adaptable to public use, in a shorter time frame (approximately 30 years), and without the extreme attractive nuisance of a larger deeper pit. Presumably this restoration was considered in the balance as part of the mitigation for the existing permitted project. The proposed Rockfield Quarry Project would eliminate this restoration and mitigation. This is an added impact that does not appear to have been addressed in the DEIR and should be.

The flood analyses used a 100-year event standard.

Comment 576-13

A more conservative 250-year standard should be used, because extreme events are becoming more common, and reservoir management is not guaranteed to be consistent over time. Extreme events and rare but catastrophic consequences should be evaluated, and 100yr climate forecast scenarios should be employed for better context.

The very deep pit left after mining will be only 200 feet from the San Joaquin River. Flood analyses only looked at 100yr flood events. What prevents erosion and maintains long-term stability of the bank and floodplain in the 200 feet between the river and the pit? What happens if the river breaches the pit wall? Who pays for damages? Who modifies the site to ensure stability if river conditions change over or after 100 years? Local and state taxpayers should not have to foot the bill for these kinds of impacts.

Flooding and Geohydraulogy

Comment 576-14

The DEIR uses the 100 year events to analyze flood and river-related impacts. However, California is experiencing increased volatility in precipitation and flooding, so that the use of 100 year events is not the best predictor of risks. A 250 year event standard should be used for these analyses. This more conservative approach should be used also because the Project's situation along the San Joaquin River creates a potential for a rare event to have catastrophic consequences, such a channel alteration, dangerous changes in river flows, water

pollution/water quality impacts, and unpredicted flooding.

Comment 576-14 Cont.

Recreation:

There is little to no quantification of recreation use in the area surrounding the Project over the 100-year Project lifetime, nor afterwards. Project impacts on usage numbers, patterns, impacts of shifting recreation use away from the Project area to other areas and their concomitant impacts were not analyzed in detail. Nor were there any analyses of economic impacts on Fresno and Madera Counties resulting from changes in recreation caused by the project. Such analyses are possible and should be conducted; they should cover the Project's 100 years of operational life, as well as account for the continued impacts of the pit past that lifespan.

Comment 576-15

Housing

Projects like the Rockfield Quarry are known to reduce property values. This affects current homeowners, other property owners, and investors and developers. These impacts should be analyzed for the active life of the project and beyond.

Comment 576-16

Public Safety

Comment 576-17

The quarry will be an eternal attractive hazard. It is reasonable to expect juvenile (and adult) thrill seekers to access the site. Criminals seeking to dispose of industrial waste, stolen cars, or bodies are also possible trespassers. Deaths and injuries and other problems will occur despite security measures. What mitigation is proposed for public safety after closure? What funding mechanisms are in place to assure maintenance of site security after operations cease?

In addition to avoidable public suffering, the County and other government entities will be burdened with the cost of responding to rare but tragic events. The project should provide financial assurances to the County to address these potentially huge impacts to County finances.

Mitigation

Comment 576-18

The mitigation measures listed in the DEIR generally require only monitoring and reporting, with few review criteria, and vague outcomes (generally the preparation of plans without specific actions.) They do not establish the authority of the County to unilaterally require action in response to mitigation monitoring results, changed site conditions, or noncompliance. There is little to no funding established to ensure mitigation and compliance. Nor is there any fund established for potential damages resulting from the project during operation or after closure (when the pit remains). All these deficiencies should be addressed. Proposed mitigation measures should be rigorous and enforceable; there should be a substantial fund established to ensure compliance with mitigation measures, and fund legal and on-the-ground actions to remedy any faults or violations. A third-party mitigation overseer, separately funded by the project in the form of secure endowments or other robust and durable ways, should be required for the life of the project and for 25 or more years after.

Comment 576-19

Because of the significant ongoing public interest in the Project, and its continuing impacts upon the public even after closure, the County should establish a process for publication and public review and comment on all mitigation reports and proposed actions. A citizens' advisory panel or similar

group should be established by the County to assist in overseeing compliance and mitigation; this should be funded by CEMEX.

Comment 576-19 Cont.

Significant but Unmitigable Impacts

Comment 576-20

The DEIR lists two Significant but Unmitigable Impacts. One is the visual impact, which is deemed not mitigable – but, staining the pit walls some appropriate color is offered as a partial mitigation measure. This is ridiculous on the face of it. How was this determined to be reasonable mitigation? What color will be chosen and why, and by whom? How is funding provided for ongoing in-perpetuity maintenance?

The other unmitigable impact is traffic delays at Willow and Friant. Partial mitigation for traffic impacts is offered as paying "equitable share" costs for improvements in a few traffic signals, road widening and road surface maintenance. As written, the Mitigation Measure does not specify a number of critical requirements, such as timing of payments, funding source, maintenance of improvements after the operational life of the Project, or remedies for default. It seems that substantially better mitigation could be provided.

Comment 576-21

Duration of mitigation

Comment 576-22

The Project causes impacts that persist after its 100 year active life. Costs of ongoing mitigation measures, (such as monitoring, site security, emergency response, and response to catastrophic events such as flooding) should be analyzed, and secured funding provided.

Security and durability of mitigation funding.

Comment 576-23

CEMEX has a poor history of compliance with environmental regulations, having been fined over 41 million dollars for 81 violations, according to one 2000 report. Especially relevant to Fresno County's situation, Cemex had a sand mining operation in the city of Marina, along Monterey Bay. In March 2016 the California Coastal Commission issued a cease and desist order asking for administration civil penalties, stating that the operation is narrowing beaches and impacting environmentally sensitive habitat. Cemex denied the allegations and continued to operate. A settlement was reached in 2017 and CEMEX ended mining in December 2020.

Environmentally Superior Alternative

Comment 576-24

The No Project Alternative was identified clearly as the Environmentally Superior Alternative. Pursuant to CEQA requirements, another Environmentally Superior Alternative was selected from those provided in the DEIR. Alternative 5, reduced mining depth (400ft) and reduced annual sales (2.5 MTY) is identified as the environmentally superior alternative pursuant to CEQA.

However, it appears that Alternative 4, reduced mining depth (300 ft) with additional setbacks, would accomplish much of what Alternative 5 does, with the added advantages of providing additional buffers for impacts to recreation, aesthetics, and possible catastrophic events involving the San Joaquin River. The choice of "next best" Environmentally Superior Alternative should be reevaluated. A more expansive and scalable set of Alternatives should be provided to allow a less constrained choice of "next best" alternative.

Conclusion

Comment 576-25

The proposed Project is inconsistent with existing and planned uses of the San Joaquin River corridor. The Project far exceeds historic and current aggregate extraction operations in the San Joaquin River corridor, and their impacts. It would create an enduring scar with ongoing impacts the DEIR does not adequately disclose or analyze; the mitigation measures proposed are inadequately defined; Project compliance is not assured; mitigation funding is not secured; and the County is left with additional unmitigated impacts in terms of potentially massive financial liabilities for more than 100 years. Deficiencies in the DEIR necessitate at least reanalysis and recirculation, but it is in the best interest of the public for the Commission to deny the Application.

Sincerely,

Jeffrey R. Single
Jeffrey R. Single, PhD.
Certified Senior Ecologist
Certified Wildlife Biologist

From: Stephanie Smallie
To: Randall , David A.
Subject: CEMEX Project Comment
Date: Monday, March 10, 2025 9:05:50 PM

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To Whom It May Concern:

Comment 577-1

I've grown up on our San Joaquin River for over 50 years. I've had the privilege of living at the Spano Ranch for 25 years. I've spent almost every Saturday in my childhood roaming around the river bottom with my grandfather, Oscar Spano. I grew a deep appreciation for our river. It's a beautiful natural resource with so much vegetation, open land not to mention all of the wild life. There is a peace it brings my soul.

Comment 577-2

The blasting will change everything that is peaceful and serene.

Comment 577-3

I strongly oppose this project. The amount of disturbance to our river is unimaginable. No matter how good an EIR "plan" is, there is no way that it couldn't not negatively affect our river and all that it encompasses.

Sincerely,
Stephanie Smallie

Sent from my iPad

28 Feb 2025

Fresno County Board of Supervisors

Re: CEMEX Rockfield Quarry Modification Project EIR

David Randall, Senior Planner
Fresno County Public Works & Planning Dept.
Division of Public Works & Planning
2220 Tulare St, 6th floor
Fresno, CA 93721

Greetings,

Comment 578-1

I write to you as a concerned citizen of the County. I have deep concerns about the proposed CEMEX Quarry Modification EIR and how it will impact the environment we all share.

Comment 578-2

While I recognize legitimate needs for production and material demands in the County, the well-being of County communities is paramount. The San Joaquin River is a vital public resource that is integral to human, animal, & environmental health. A massive pit mine in this location will compromise hiking, rafting, biking, wildlife habitats, quiet, and water resources. Ramping up mining at CEMEX Rockfield Quarry will increase truck & heavy machinery traffic which will severely

Comment 578-2 Cont.

impact air quality in the Valley/County. I don't need to remind you that air quality is already one of the biggest problems in our County. Rockfield Quarry expansion would only make it worse.

Comment 578-3

My understanding is that there is sufficient rock aggregate material available in the region already so this project is both unnecessary and degrading to the River environment.

Comment 578-4

The proposed mitigation efforts outlined in the DEIR are flimsy and insufficient to address harms.

Please [illegible] the needs of community members when considering projects like CEMEX Rockfield Quarry Modification, because of the major impacts on humans + all who share space in this watershed.

Thank you,

Peter Smith

Peter Smith
3863 E. Kerckhoff Ave
Fresno, CA 93702

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 10, 2025

Ms. Peter Smith
3863 E. Kerkhoff Ave.
Fresno, CA 93702

Comment letter on CEMEX Rockfield Quarry EIR 7763

Mr. Smith

We received your letter dated February 28, 2025, regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From: Brian Snyder
To: Randall , David A.
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Monday, March 10, 2025 10:49:48 AM

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Report Suspicious

March 10, 2025 David Randall, Senior PlannerCounty of FresnoFresno, CA
Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear David,

I appreciate the opportunity to provide comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts of this project, I have several concerns that I urge you to address before moving forward with approval.

Comment 579-1

Traffic, Noise, and Cumulative Environmental Effects

As our city and county continue to grow, a deeper excavation site will leave a lasting mark on the landscape. Future generations will question the wisdom of approving such a significant expansion—one that risks becoming a permanent scar in the heart of their community. When the original site was approved, it was in a remote area, surrounded only by the San Joaquin River and farmland. Today, that is no longer the case.

If approval is inevitable, I strongly urge you to require CEMEX to establish a substantial, independently managed bond—funded entirely by the company, not taxpayers—to ensure full environmental restoration and remediation long after we are gone.

Comment 579-2

Transparency and accountability in this review process are essential to protecting the long-term health of the San Joaquin River watershed and

surrounding communities. I appreciate your careful consideration of these concerns.

Comment
579-2 Cont.

Sincerely,

Brian Snyder, Fresno Ca 93722

Sent from my iPad

From:	Clare Statham
To:	Randall , David A.; Mtunga, Tawanda
Cc:	District 1; District 2; District 3; District 4; District 5; Jerry Dyer; attorneys@fresno.gov; Laura.Rios@fresno.gov; alyssa.stevens@fresno.gov; District3@fresno.gov; District4@fresno.gov; Nicole.DeMera@fresno.gov
Subject:	PUBLIC COMMENT on CEMEX DEIR
Date:	Monday, March 10, 2025 11:40:31 AM
Attachments:	Hours of operation.png Screenshot 2025-03-09 at 11.03.03 PM.png Screenshot 2025-03-10 at 12.52.18 AM.png

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I am writing to ask that Fresno County say no to CEMEX's request for a 100-year sand and gravel permit.

Comment 580-1

1. PERMIT LENGTH: By any measure, a permit for 100 years is unreasonable and irresponsible. We and our children will be long gone before the project is completed and the required mitigations are in place. In approving such a long-term permit, the county would give up its leverage with the company. Say NO TO A 100 YEAR PERMIT.

Comment 580-2

2. TRUCK TRAFFIC AND PLANT OPERATION HOURS: Look carefully at the DEIR Tables 2-5 and 2-6. Within 10 years this project will be generating 1,076 trips per day. As the tiny 2-6 Table Notes say, this number is for **ONE WAY TRIPS**. But logic tells us that trucks cannot be going only one way. So how many round trips? Over 2,100 trips a day? Table 2-5 states that the plant will be running six days a week, from 4:00 AM to 9:00 PM (with reduced hours on Saturdays starting at 6:00 AM.) But the small print Table Notes say something quite different: "Continuous 24 hours per day operation may be required." So the neighborhoods to the south of Friant Road and the houses in the river bottom will be subjected to the noise, and the larger region to the air pollution generated by somewhere between 80 and 160 trucks per hour anywhere from 4:00 AM to 9PM or 24 hour a day. We don't know. The DEIR allows the company to operate whenever in wants.

Comment 580-3

I have studied the tables on noise and cannot understand how a 100% increase in truck trips in the next 10 years does not lead to a substantial increase in noise. I think the logic is this: if an air national guard airplane flies over my house there is a loud noise. If another one flies over two minutes later there is another loud noise, but it is not louder than the first noise. So one can say that there is no increase in decibel level. But increasing the time one listens to the noise amounts to an increased impact even if the decibel level does not change. That logic is the only way I can account for both the tremendous increase in truck traffic proposed and the supposed minimal change in noise noted in the DEIR.

Comment 580-4

3. IMPACT ON ROADS: As stewards of the county's transportation infrastructure, you can image what this volume of heavy weight traffic will do to Friant Road. The proposed mitigation is "Equitable Share Contribution." Equitable share is not defined, and the DEIR does not estimate what percentage of wear CEMEX trucks would cause. I foresee when the time comes to determine how an Equitable Share translates into actual dollars, CEMEX will argue for far less road damage than it is causing and the county taxpayers will be left footing most of the bill for the damage caused by hundreds of thousands of truck trips each year. How the enormous increase in traffic will affect the safety of other drivers is also not adequately addressed.

Table 2-5
Proposed Typical Hours and Days of Operation

Activity	Typical Hours and Days[1,2]
Excavation, Aggregate, and Recycle Processing	6 a.m. - 7 p.m., Monday through Friday
Loading, Unloading, and Aggregate Trucking[3]	4 a.m. - 9 p.m., Monday through Friday
Asphalt and Ready-Mixed Concrete Plants[4]	4 a.m.-6 p.m., Monday through Friday, May - October 5:30 a.m.-6 p.m., Monday through Friday, November - April 6 a.m.-2 p.m., Saturdays
Blasting	10 a.m. – 2 p.m., Monday through Friday 1 to 2 times per week

Table Source: CEMEX 2021.
Table Notes:
1. Maintenance of mobile and plant equipment extend beyond these hours.
2. Continuous 24 hours per day operation may be required for major public road projects that are required to be completed during night hours or on weekends to avoid traffic conflicts or during periods of public emergency affecting the health and safety of the community. This is not applicable to blasting operations and recycle processing.
3. Major public road projects may be required to be completed during night hours or on weekends to avoid traffic conflicts. Such projects may require loading operations beyond the hours and days of operation shown.
4. Asphaltic oil, cement, propane, and other supplies may be delivered during nighttime hours.

Table 2-6
Existing and Proposed Daily Truck Trip Generation

Description	Employees	Interplant Truck Haul	All Other Trucks	Total Annual Average Daily Truck Trips
Existing	110	450	240	690
Project Stage 1 at 2.0 MTY (5 years)	114	134	560	694
Project Stage 1 at 3.0 MTY (10-30 years)	120	216	860	1,076
Project Stage 2 - 3.0 MTY (30-100 years)	120	0	944	944

Table Source: CEMEX 2021.
Table Notes: Estimated trips are one-way trips.

Comment 580-5

3. AIR QUALITY IMPACTS AND LACK OF MITIGATION: The DEIR's air quality information is especially evasive in dealing with the impacts of the CEMEX proposal. Page after page is devoted to identifying agencies that deal with air quality, where their jurisdictions are, what the San Joaquin Air Pollution Control District does, which regulations it adopted in which years. It identifies the harms of diesel emissions and other noxious compounds. In these 33 pages the DEIR identifies the factors that make the San Joaquin Valley's air exceptionally dirty and acknowledges that our air is not meeting federally mandating clean air standards. What the DEIR does not do is evaluate in a substantive way the pollution this project will create.

The information relevant to CEMEX boils down to just one two-sentence paragraph at the end of 4.3-33. This paragraph states that CEMEX will emit the pollution ("actual emissions") and "the applicant can pay its fair share" into some other offset program rather than deal with "potential emissions" i.e., the emissions you prevent from becoming emissions. The DEIR notes that "many years in the future" new and by implication more stringent "diesel engine requirements [will be] fully implemented." Translation: CEMEX's operation will have significant impact on air quality, the company will pay a mitigation fee that is unlikely to improve our local air, and eventually stricter regulations enforced by someone else will make the company clean things up, so let's deal with this air quality business later. In the meantime we can breathe even dirtier air. I have copied the relevant paragraph below.

Comment 580-5 Cont.

Page 4.3-33: The proposed project is well suited for offsetting actual emissions rather than potential emissions because the applicant can pay its fair share to mitigate the cumulative effects of ozone (VOC, NOx) and PM10 by complying with the existing in-use on- and off-road diesel engine regulations. In addition, it is likely that the maximum production amounts analyzed for the proposed would first occur many years in the future after the diesel engine requirements are fully implemented, thus potentially reducing emissions relative to the estimated emissions presented in the Air Quality Assessment and associated Addendum of the proposed project, because the emissions estimates in these studies follow conservative methodologies to ensure they represent the maximum reasonably foreseeable future condition with the project.

4. EXISTING AGGREGATE PERMITS AND THE ISSUE OF JOBS: Finally, there is the issue of jobs dependent upon aggregate mining and supply. CEMEX has stated that the project will add only five new jobs at the work sites. They state 37 other jobs will be created but do not say these jobs will be in Fresno County. If they were local jobs, I think CEMEX would have shared that fact. Perhaps those 37 jobs will be created at company headquarters in San Pedro, Mexico. What about jobs in the building industry that use the sand and gravel? We have enough local production of these materials to keep these industries supplied for decades. I include here the Fresno section of a table from the California Geological Survey's most recent report on aggregate mining and a link to the complete report. If you read the introduction to this report you will see that it was written by someone who understands the importance of aggregate mining for the building industries and for California's micro-economies. It is not a report hostile to mining and construction, so its conclusions should carry weight with those of you who support our local housing and construction industries.

Comment 580-6

AGGREGATE SUSTAINABILITY IN CALIFORNIA
https://www.conservation.ca.gov/cgs/Documents/Publications/Map-Sheets/MS_052_California_Aggregates_Report_201807.pdf

AGGREGATE STUDY AREA[1]	50-Year Demand (million tons)	Permitted Aggregate Reserves (million tons)	Permitted Aggregate Reserves Compared to 50-Year Demand (percent)	Projected Years Remaining
Bakersfield P-C Region	338	1,708	505	More than 50
Barstow-Victorville P-C Region	163	117	72	31 to 40
Claremont-Upland P-C Region	202	90	45	21 to 30
El Dorado County	82	15	18	11 to 20
Fresno P-C Region	305	556	182	More than 50
Glenn County	41	22	54	21 to 30

Many other problems exist with this proposal: the impact on the San Joaquin River, the recreational areas near the CEMEX operation, and the aesthetic impact. I have restricted my comments to the topics on which I am most versed and could read the DEIR with the greatest understanding.

Comment 580-7

The people of Fresno and Madera counties do not need this project to have a healthy local building industry. The CEMEX project would have serious adverse effects on air, traffic, and quality of life, particularly noise pollution from excessive traffic. One hundred years is too long a time to approve the very best of projects. Unfortunately, CEMEX is a company with a problematic record in a number of areas. Please, do not approve the CEMEX permit.

Sincerely,

Clare Statham
stathamolin@sbcglobal.net
559-495-8344

From: Miranda Stelfox
To: Randall , David A.
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Monday, March 10, 2025 4:34:20 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior PlannerCounty of FresnoFresno, CA
Subject: Comments on CEMEX Rockfield Expansion Project DEIR Dear David,

Comment 581-1

As a resident of Friant, I am writing to express my profound concern regarding the escalating negative impacts of increased truck traffic and related issues, particularly the destruction of our unique natural environment. This area, rare within the Fresno region, is experiencing significant degradation due to the increased industrial activity. I have personally observed and experienced the following, addressing the key concerns as outlined in the example:

Traffic Congestion and Safety:

Comment 581-2

The increased volume of large trucks has created significant traffic congestion, particularly during peak hours. This poses a serious safety hazard for residents, cyclists, and other motorists. The narrow roads in Friant are ill-equipped to handle the current level of truck traffic, leading to dangerous situations and near-misses. The combination of large trucks, cyclists, and regular car traffic creates unsafe conditions, deterring residents and visitors from enjoying the natural beauty of the area. This diminishes the recreational value of our unique ecosystem.

Road Damage and Maintenance:

Comment 581-3

The heavy truck traffic is causing severe damage to our roads, resulting in cracks, potholes, and overall deterioration. The current road conditions are unacceptable and pose a risk to vehicle safety. The roads are not designed for this heavy traffic. The resulting erosion from the damaged roads is impacting the San Joaquin river watershed. The dust and debris generated are impacting native flora and fauna.

Dust and Air Quality:

Comment 581-4

The constant movement of large trucks and earth generates excessive dust, which negatively impacts air quality and poses health risks to residents. This dust also settles on vegetation, harming native plant life. The dust and debris are impacting the air quality, harming both human and ecological health.

Noise Pollution:

Comment 581-5

The increased truck traffic has significantly increased noise pollution in our community, disrupting the peace and tranquility of our rural environment. This noise disturbance disrupts wildlife patterns and diminishes the quality of life for residents. The noise, dust, and physical disturbance are disrupting wildlife patterns and degrading the overall health of the environment.

Environmental Impact:

Comment 581-6

The increased truck traffic and associated road damage are directly contributing to the destruction of the fragile ecosystem that makes Friant so special. The rock and debris deposited by trucks are contaminating our natural areas. The increased debris is also polluting the San Joaquin river watershed. This area is a gem in the Fresno area, and the damage is devastating. The heavy truck traffic is causing severe damage to our roads, fragmenting natural habitats and increasing erosion that pollutes nearby waterways.

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected

I urge you to take immediate and decisive action to mitigate these serious environmental and safety impacts. The unique natural beauty of Friant is being compromised, and we must act now to protect it for future generations. I am available to discuss these concerns further and provide additional details about my observations.

Sincerely,
Miranda Stelfox
Friant Resident

Miranda Stelfox

From: Wendell Stephenson
To: Randall , David A.
Subject: CEMEX EIR
Date: Monday, March 10, 2025 10:35:01 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Sir:

Comment 582-1

I'm a 76-year-old Fresno native who scarcely gave a thought about the San Joaquin River running to the north of Fresno during my formative years in the 1950's and 60s. It was only after I returned to Fresno in 1999 to teach Philosophy at Fresno City College that I had any thought about the river. And then I had lots of thoughts about it.

I won't tell you about those thoughts now, for this letter is mainly in regard to the EIR submitted by CEMEX to expand its mining operations along the San Joaquin River for the next 100 years.

Comment 582-2

Questions that occurred to me as I read through parts of the EIR.

1. What is an "unclassified conditional use permit"?

Comment 582-3

2. Has the California Department of Fish and Wildlife commented on this plan? The proposal impinges on its land and concerns, so I think it must comment.

Comment 582-4

3. Here is the 6th stated project objective: "6. Continue to provide an environmentally sound project that would balance the recovery of the aggregate resource with the protection of other resources including wildlife habitat, groundwater, surface water, and air quality;"
CEMEX is implying here that its current project along the river is "environmentally sound"? How so? More importantly, how would its proposed expansion result in an "environmentally sound" project?
No "balance" is needed if the "recovery of the aggregate resource" is not necessary. That it is not necessary is something I adumbrate below. Before doing that, I'd like to know, assuming the project is necessary, how CEMEX's proposal constitutes the "right balance".

Comment 582-5

4. Cemex says it is proposing to mine and blast down to a depth of 600 feet below the surface. Apart from creating a gigantic hole, what all would this entail? It seems to me that the EIR is very weak on what this actually would entail.

Comment 582-6

5. "The following impacts were found to be significant and unavoidable, as

feasible mitigation is either unavailable or would not effectively reduce the severity of the impact to less than significant:

Comment 582-6 Cont.

• Impact 4.1-1: Have a substantial adverse effect on a scenic vista. • Impact 4.1-3: In non urbanized areas, substantially degrade the existing visual character or quality of public views (i.e., views experienced from publicly accessible vantage point(s) of the project sites and their surroundings. • Impact 4.17-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. "

Why is there no feasible mitigation?

Why allow a project that conflicts "with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities"? Tell me how that makes sense.

7. CEMEX says that the negative impact of increased truck traffic and traffic congestion that would be caused by its work cannot be mitigated. Its reason? There are no funds. My question: why cannot the company be required to stump up any required funds to fully mitigate such traffic and congestion? In general, why can't the company be required to make any and all necessary mitigations as a necessary condition of approval?

Comment 582-7

I said in 3 above that I don't think the proposed project is necessary. As Marek Warszawski writes in his Fresno Bee editorial of 16 Feb 2025: "there isn't a compelling reason to mine aggregate from along the San Joaquin River utilizing more destructive methods than those previously employed since the 1920s. Other local sources will provide more than we need, as the California Geological Survey report shows". (The California Geological Survey report is cited in his editorial.)

Comment 582-8

If CEMEX disagrees with this conclusion, what are its reasons? What are the good reasons, good enough to continue degrading one of CA's great rivers for the next 100 years, that justify this proposal?

Sincerely,

Wendell Stephenson

K Suda
Fresno CA 93720
kcsuda@yahoo.com

March 10, 2025

David Randall Planner
City of Fresno
2600 Fresno Street
Fresno, CA 93721

Dear City Planner,

My name is Kathie Suda, and I am a concerned citizen who deeply cares about the wildlife and natural environment surrounding the San Joaquin River. I am writing to express my concerns regarding the proposed expansion of the CEMEX-Commerce Group's mining operations near this precious area. Comment 583-1

As you know, the San Joaquin River is home to diverse ecosystems and provides vital resources for both wildlife and human communities alike. The health and sustainability of this river system are critical not only for the flora and fauna that depend on it but also for the long-term well-being of our environment.

I respectfully request that CEMEX be required to conduct and submit a thorough Environmental Impact Report that specifically addresses the potential harm their proposed expansion might have on the San Joaquin River. This report should carefully evaluate, at a minimum, the following aspects: Comment 583-2

1. Air Quality: How will the expansion of the mining operations affect the air quality in and around the San Joaquin River area? Will dust and emissions from machinery and transportation increase, potentially harming both human health and local wildlife? Comment 583-3

2. Water Quality: The mining project should be evaluated for its potential impact on the water quality of the San Joaquin River. Will the expansion contribute to runoff or contaminants that could harm the river's delicate ecosystem and the species that depend on it? Comment 583-4

3. Wildlife: Finally, I urge you to ensure that the report includes an analysis of the impact on local wildlife. This includes both the direct harm that might come from habitat destruction and the indirect consequences of air and water pollution on the health of animals that inhabit the area, including the Swainson's Hawk. Comment 583-5

Given the rich biodiversity that relies on the San Joaquin River, it is critical that any development near it be held to the highest environmental standards to ensure that wildlife and the river's ecological balance are not compromised.

I trust that, as stewards of our city's natural resources, the City of Fresno will prioritize the protection of our environment and ensure that CEMEX provides the necessary data to demonstrate that their operations will not harm the San Joaquin River area that I love.

Sincerely,
K Suda

From: Jude
To: Randall , David A.
Subject: Cemex Project
Date: Monday, March 10, 2025 3:24:27 PM

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Report Suspicious

Judith Swick
4743 N Safford
Fresno, California 93704
Slickjasz@yahoo.com
559 974-0929
March 7, 2025

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report

Dear Mr. Randall,

I am writing to formally express my opposition to the proposed 100-year permit for the CEMEX mining operation and to challenge the adequacy of the Draft Environmental Impact Report (EIR) prepared for this project. The EIR, as currently drafted, does not sufficiently or accurately assess the environmental, ecological, and community impacts that this long-term operation will have on the San Joaquin River and surrounding areas.

Comment 584-1

As Volunteer Coordinator for the Clark Bonsai Museum I am concerned with the amount of traffic that would be added to the already busy Friant Road. At the Clark Bonsai Museum we welcome visitors from all around the world, the United States,California, throughout the Central Valley and especially Fresno and Clovis. I believe that the EIR fails to adequately address the following concerns:

Comment 584-2

1. The impact of air pollution and NOISE pollution on the many visitors to Woodward Park and gardens within the park, e.g. Clark Bonsai Museum and Shinzen Gardens.**[Insert Specific Concern—e.g., Impacts on wildlife habitat, water quality, air pollution, noise pollution, groundwater impacts, or community health concerns]**

Comment 584-3

2. The impact of public safety on an already very busy Friant Road.
3. The potential damage to the San Joaquin River, wildlife habitat, and certainly water quality, which leads to community health concerns.

Comment(s) 584-4 584-5

A project of this scale and duration requires a far more comprehensive environmental review that includes thorough scientific analysis, long-term cumulative impact assessments, and meaningful mitigation strategies. The EIR, as it stands, does not meet these standards, and I urge Fresno County to require revisions that fully account for the long-term consequences of extending CEMEX's mining operations.

Comment 584-6

Comment
584-6 Cont.

I request that the Planning Department reconsider this permit in light of the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.

Thank you for your time and consideration.

Sincerely,
Judith Swick

From:	jeffrey.hallock@yahoo.com
To:	Randall , David A.
Cc:	sweaver@riverparkway.org
Subject:	Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Monday, March 10, 2025 4:02:16 PM

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Report Suspicious

Comment 585-1

CEMEX's proposed blasting deep pit mine ignores or fails to adequately address crucial adverse impacts on the San Joaquin River and existing parks and residential areas

Fresno and its fast-expanding suburbs to the north suffer from very limited access to nearby natural areas for recreation: hiking, fishing, horseback riding, photography, painting, birdwatching, and enjoying nature.

Recently, Ball Ranch park just to the north of the proposed 600-foot deep blasted pit mine -- a 358 acre park -- opened to the public. It is a great addition to the parklands available to the growing urban area and would be directly and detrimentally affected by the proposed CEMEX project. My husband and I have enjoyed several lovely hikes with sightings of birds, animals and wildflowers. Blasting and hard rock mining operations will create environmental impacts that cannot be mitigated to avoid adverse effects on the park experience.

Please consider the need of Fresno area families and especially children for unpolluted parks within reach of town to discover and enjoy nature.

Deborah M Symes
746 E Fedora Ave
Fresno CA 93704

From:	Carly Tex
To:	Randall , David A.
Cc:	sweaver@riverparkway.org
Subject:	Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Monday, March 10, 2025 5:09:54 PM

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Report Suspicious

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all. As a member of the North Fork Rancheria of Mono Indians, and a resident of Fresno, I have a concern about the mitigation of impacts on cultural resources both physical, and spiritual.

Comment 586-1

Comment 586-2

Mitigation for cultural resources

I noticed in the description in Section 4.18 that North Fork Mono Tribe was mentioned in the list of current tribes, but not North Fork Mono Rancheria, which is a different Tribe whose lands are near the head of the San Joaquin River. The references used in this section may be outdated if it does not even include them and begs the question of whether research was thorough. In Appendix J, it notes, *"No other cultural resources were identified as a result of the pedestrian survey. However, a search of the NAHC Sacred Lands File identified one or more sacred sites in the Project area. The NAHC recommended contacting the Dumna Wo-Wah Tribal Government and provided a list of other individuals and tribes to contact for more information."* What is the list of "other individuals and tribes to contact for more information," and were they contacted with adequate time to request a formal consultation or were they left out?

Comment 586-3

Also, how is it determined that the sacred sites are alright to develop upon? What is the plan if later archaeological discoveries are found and will you have members of local Tribes to aid in identification, mitigation, and management of artifacts? On the subject of mitigation, it would be good to have training of project staff for cultural awareness and the ability for tribes to review the permit periodically as well as be made aware of ongoing discoveries over the course of this 100-year project. Also, what if any compensation can tribes expect for the exchange of desecration and exposure of those sacred sites? This is a multi-generational project and tribal leadership is bound to change over the course of the project, being open to continued tribal consultation beyond the draft EIR public comment period is urged.

Comment 586-4

In closing, I hope the public's comments will be considered, additional information drafted and recirculated for public review before the finalizing of the environmental impact report for the project.

Comment 586-5

From: Guinevere J Thelin
To: Randall , David A.
Subject: In Protest of the Cemex Project
Date: Monday, March 10, 2025 1:39:53 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 587-1

We are writing to express our concerns over the current proposed Cemex modification project which threatens the San Joaquin river. The ecosystem of these areas are incredibly fragile and the damage done will have untoward consequences for generations to come. These resources are precious and to destroy them in the thirst for profit is short sighted and only benefits a few at the expense of so much more.
Please do not allow it to progress.
Thank you,
Guinevere J Thelin and Kirk Brown
1929 W Norwich Ave
Fresno CA 93705

Robert Tibstra
217 E. Cornell Ave.
Fresno, CA 93704
robert.tibstra@gmail.com

March 10, 2025

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report

Dear Mr. Randall,

I am writing to submit my formal public comment regarding EIR 7763 for the proposed CEMEX Rockfield Quarry Expansion. As an ecologist by training with a background in aquatic ecology, environmental planning, sensitive species, and field biology, I am deeply concerned by the insufficient analysis presented in this Environmental Impact Report (EIR) and its potential long-term consequences for our community and natural resources.

Comment 588-1

The proposal to create a 600-foot deep pit so close to the San Joaquin River (SJR) is alarming. The project's environmental costs appear to greatly outweigh any perceived benefit to our community. The region already has ample permitted aggregate reserves that can meet future demand without the need to impact such a sensitive and crucial ecosystem. There is no compelling reason to extract aggregate from an area connected to one of the most endangered rivers in the country when other sources are available and already permitted for extraction.

Particularly concerning is the lack of consideration for native aquatic species in the SJR ecosystem. There is little mention of Chinook salmon, and no mention of other native fish species such as threespine stickleback, hardhead, Sacramento perch, Tule perch, riffle or prickly sculpin, for example. A major, multi-agency and multiple stakeholder effort to restore native Chinook salmon populations to the SJR in the immediate vicinity has been ongoing for decades. The only mention of salmon in the EIR appears to be in relation to direct impacts from blasting at the Quarry site, which it states are less than significant and assumes salmon will not occur in the project area. There appears to be zero consideration of long-term impacts to salmon or other aquatic species--impacts which include increased habitat for non-native, predatory aquatic or otherwise competitive species, such as largemouth bass, bluegill, green sunfish, spotted bass, American bullfrog, and pond (red-eared) sliders. Juvenile salmon are known to utilize temporarily flooded portions of rivers as rearing habitat, and non-native, warm water fishes are known to prey on smaller fish. Any habitat changes that increase numbers of these non-native species while decreasing natural floodplain habitat present potential significant impacts to native salmon populations, particularly if there are ever surface water connections between the river and the altered, open-water habitats.

Comment 588-2

The EIR indicates that recent mapping has been used to redraw maps to exclude the Plant and Quarry sites from the FEMA 100-year floodplain. However, it also indicates that "berms" constructed in the last 20 years have altered the topography to account for these changes in floodplain mapping. It has no detailed analysis of the berms and their susceptibility to erosion from the SJR, other than to state that they haven't eroded yet. The EIR should describe the condition, dimensions, and composition of the berms, any associated riparian vegetation, and an analysis of various flow conditions to determine the likelihood of erosion and the potential for subsequent surface water connections between the SJR and the "open water" habitats created by mining operations. Similarly, there is little detail regarding the river water ditch at the Plant site that provides water for mining operations. In the absence of such detail, it is assumed that the ditch is unscreened and has potential to provide a corridor for fish and aquatic species to access open-water ponds into which it terminates. Given the proximity of the project site to the SJR, it is likely that surface water connections will be established at some point during the project's lifetime, resulting in connections of fish populations between the two habitats. Salmon populations are already impacted by past mining operations within the SJR floodplain which have converted suitable floodplain rearing habitat for juvenile salmon to enormous instream "lakes" that contain an abundance of non-native and predatory fish species. Once these lakes are established, it is virtually impossible to manage them for anything other than the non-native fish species that occur there. The habitat conversion effectively removes that portion of the landscape from ever having the potential to be managed for native aquatic species, as well as greatly increasing the negative effects to native species from non-native fish populations. The SJR historically did not contain instream lakes that greatly alter natural flow regimes and fish species composition.

Comment 588-3

The reclamation of the project sites is also very concerning. The EIR states that the final slopes of the banks will be seeded with native grasses and forbs and planted with native plants, but offers little detail concerning goals for the habitat. It states that because it will be seeded during the rainy season, there will be no need for supplemental irrigation. In addition, the performance criteria for revegation includes 75% cover, but indicates that any vegetation (non native or native) will suffice. It also states a goal for "native trees or shrubs" to be established at a density of 2 plants per 150 feet of bank. In my experience, these goals would be wholly unacceptable for any revegetation or restoration plan that aims to restore natural habitats. Any plan should include an analysis of native riparian habitats nearby to provide a template for the goals of the project. At a minimum, the species types (annuals, perennials, etc.), size, and density, etc. should be clearly delineated with the goal of emulating a healthy, native riparian habitat. This would also require a detailed monitoring plan that utilizes supplementary irrigation to establish native perennial species such as riparian trees.

Comment 588-4

The EIR also fails to consider the significant cumulative effects relating to the conversion of floodplain habitat to open-water, lake-type habitats, which results in impacts to sensitive species such as salmon. There is no mention of other gravel mining operations in the SJR that have resulted in several instream lakes that are populated with non-native fish, pond sliders, American bullfrogs, and invasive plants such as false bamboo (*Arundo donax*) and red sesbania (*Sesbania punicea*). This project will not only add to these already-significant effects, but will remove any potential for floodplain restoration for native species. The areas closer to Friant dam, especially upstream of Highway 41, offer the most potential for salmon restoration and enhancement due to temperature regimes and substrate characteristics and thus should be evaluated with this in mind.

Comment 588-5

The proposed mitigation measures for sensitive species such as the spadefoot toad and western pond turtle also raise significant concerns. The EIR indicates that there is not suitable

Comment 588-6

habitat for western pond turtles, yet presents surveys that detected pond (red-eared) sliders in the project site. Given that sliders routinely bask at sites with pond turtles, and that pond turtles occur in the SJR, it should be assumed that pond turtles exist in the project area. Extensive research has demonstrated that western pond turtles and their nests are highly cryptic and difficult to detect. The EIR's approach of conducting surveys before construction and relocating any turtles found (mitigation measure 4.4-1b) is insufficient. To effectively protect this species, surveys should be conducted well in advance of construction, and transmitters should be placed on turtles to track their movements and habitat use around the quarry. Without these more robust monitoring techniques, the EIR fails to demonstrate how it will avoid significant impacts to this protected species.

Comment 588-6 Cont.

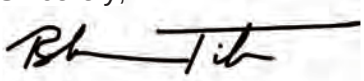
I hope the public's input is not dismissed with inadequate responses. The people of Fresno deserve a transparent process and a real commitment from county officials to safeguard our environment and human health. There has been significant investment by the public in the restoration of the SJR, including Chinook salmon runs and native riparian plant communities. A project of this magnitude has the potential to significantly alter these efforts, and the County has the ability to guide the restoration further by its actions relating to this project.

Comment 588-7

Thank you for your attention to these critical issues. I look forward to seeing how the County addresses these concerns in the final response.

Thank you for your time and consideration.

Sincerely,



Robert Tibstra

From:	Rachael 1
To:	Randall , David A.
Subject:	Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date:	Monday, March 10, 2025 11:23:12 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project.

Comment 589-1

As a Fresno resident who has been visiting various points along the San Joaquin River over the past several years, I believe the negative impacts of this plan are too high to approve.

I have enjoyed the river for it's peaceful atmosphere and have appreciated over the years the successful efforts of the San Joaquin River Parkway and Conservation Trust to preserve and restore the natural ecosystem. Walking the trails around the river is a breath of fresh air that everybody should have the right to. The actions proposed by CEMEX will cause unnecessary disruption and destruction to our river system.

Comment 589-2

We should do our best to preserve these dwindling resources, especially in these times. I have great concerns about inevitable water contamination, wildlife disruption, and air pollution.

Comment 589-3

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX.

Thank you for your time and consideration.

Sincerely,

Rachael Torres

From:	Aracely Trejo
To:	Randall , David A.
Subject:	Comments on CEMEX Rockfield Expansion Project DEIR
Date:	Monday, March 10, 2025 8:30:47 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 10, 2025 David Randall, Senior PlannerCounty of FresnoFresno, CA Dear David,I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Expansion Project. Given the significant potential environmental and community impacts associated with this project, I have several concerns that I urge you to address prior to moving forward with approval. Comment 590-1

The DEIR does not adequately analyze potential impacts of blasting on wildlife. The examples of habituation of wildlife to mining operations are for surface mining, not the deep rock mining proposed here.

I would like to raise an issue that affects Public Safety especially as it relates to the Quarry Site. This could be analyzed under the Hazard category as the Fresno County General Plan Implementation Program HS-E.B includes a statement that "The County shall, as part of the development review process, ensure that new development . . . does not create manmade safety hazards . . .". The issue pertains to the public safety hazard that the quarry will represent after the project is complete 100 years or so from now (and maybe before). With the stepped but vertical walls and a surface water elevation more than 400 below the trail elevation, the open quarry will not be suitable for fishing, swimming, boating, kayaking, canoeing, floating or anything else. But it will be ATTRACTIVE, especially to preteens and teenagers. There is not a fence that will keep them out.What will happen if one or more of the public falls into the pit? They won't fall all the way down - just 50 feet. That is a sure death." Comment 590-2

"Table 4.16-1 Recreation Facilities Near the Project Sites – Some of the table sources are dated to 2021. Several properties listed (namely Ball Ranch and Ledger Island) were not formally open to the public then. These properties are now operated by the San Joaquin River Parkway and Conservation Trust under a contract with the San Joaquin River Conservancy. There is more public use of the sites under current conditions that the project should analyze. Comment 590-3

Given these concerns, I urge the agency to require CEMEX to provide additional analysis, enhance mitigation measures, and explore less harmful alternatives. Public transparency and accountability in this review process are crucial to ensuring that the long-term health of the San Joaquin River watershed and surrounding communities is protected. Thank you for your time and consideration of these comments. I look forward to your response and further discussions on this important matter. Sincerely,Aracely Trejo Mendoza Comment 590-4

March 9, 2025

David Randall, Senior Planner
County of Fresno
Fresno, CA

Subject: Comments on CEMEX Rockfield Expansion Project DEIR

Dear Mr. Randall,

Thank you for the opportunity to review the CEMEX DEIR referenced above, and to submit comments. I now have a much more complete understanding of the magnitude of the CEMEX proposal and its presumed impacts. My understanding was greatly aided by the numerous review comments posted by the San Joaquin River Parkway Conservation Trust (Parkway Trust) on their website, which I assume they will be submitting to you, and which I will not be repeating here. Instead, I will try to limit this letter to my personal concerns about the project, and how adequately the DEIR addresses those concerns.

Comment 591-1

During my 41 year career (1965-2006) as a professor of biology at CSU-Fresno (specialization, general and freshwater ecology), I led dozens of field trips to the San Joaquin River (SJR), primarily at Lost Lake Park. Following retirement, I helped my wife with a few dozen more docent-led SJR educational trips for the Parkway Trust. Those experiences convinced me that the SJR and its associated riparian corridor are a natural treasure to the region, woefully underutilized primarily due to lack of access, with great recreational, aesthetic, and educational potential for all people to enjoy. Recently it has been gratifying to see welcome changes in access, primarily led by the Parkway Trust. And there is hope that these changes can continue to grow into the future so that this section of the SJR can achieve its potential.

So, my first concern is that any future sand and gravel mining does not impede the progress this area is achieving in reaching that potential. What I am looking for in the DEIR is a realistic idea of the impacts this project will have on people who come to the river largely to escape the sights and sounds of activities like gravel extraction. Stated another way: How much of the project will visitors hear and see at various recreational locations surrounding the project area? Will they be able to hear the sound of earth-moving equipment, or blasting? If so, how often? Continuous or not? Let us know how much of a nuisance this project will be, both visually and auditorily, when people are visiting the park for educational or recreational reasons. And how these impacts might be mitigated? Granted, this is not easily done, but it would make a welcome and necessary addition to the sections on Recreation (4.16) or Cumulative Impacts (5-3).

Comment 591-2

My other major concern is the empathy I feel for those people who own property in the area that will be impacted by the project. Let's face it: Proposing to blast, scrape, and mine a 600 ft hole in the neighborhood for the next 100 years is a truly lousy thing to do to anyone. At the very least, if this project were to be approved, those unlucky people deserve the full range of mitigations to minimize their harm. Three that come to mind immediately are: 1) Blasting, which should be done only upon mutually acceptable rules; 2) Guaranteed protections to homeowners if the project causes any structural damages to property, or to the production of water wells; and 3) Highway improvements paid by CEMEX to offset the increased traffic burden created by the project.

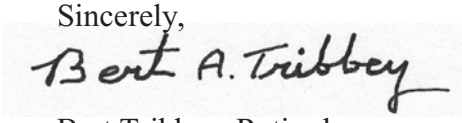
Comment 591-3

Comment 591-4

In my comments, I have not dealt with details because I am aware you will get loads of them from people more qualified than I am, and I do not want to be redundant. Mine are offered only because I feel so strongly that the final EIR must adequately protect 1) the living things that depend upon the SJR corridor for survival; 2) the rights of the people to enjoy and benefit from the river without the disruption that would be caused by unmitigated heavy mining; and 3) the residents of the area potentially affected by the proposed project. I am sure that you and your staff share those views, so I wish you success in ensuring that CEMEX fully addresses each of those issues in its final EIR. I will look forward to hearing more as the process moves forward.

Comment 591-5

Sincerely,



cc: sweaver@riverparkway.org

Bert Tribbey, Retired
Professor Emeritus of Biology
California State University, Fresno
Bertt@mail.fresnostate.edu
559-297-4978

March 10, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 592-1

Impacts on Water Quality & the San Joaquin River

Comment 592-2

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 592-3

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 592-4

Impacts on the San Joaquin River Parkway & Recreation
CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

Comment 592-5

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access

- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.
-

Comment 592-5 Cont.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 592-6

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 592-7

The DEIR identifies several unavoidable negative impacts, including:

- Scenic Degradation: The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- Traffic Congestion: Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on how mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 592-8

- Air Quality: The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 592-9

Threats to Wildlife

Comment 592-10

The DEIR fails to adequately analyze the impact on species like Swainson’s hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 592-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,
Ignacio T Valdez
2631 E Jordan Ave.
Fresno, CA 93720

From:	Jesse Verduzco
To:	Randall , David A.
Subject:	Public Comment on CEMEX Rockfield Quarry Modification Project EIR
Date:	Monday, March 10, 2025 1:17:13 PM
Attachments:	Public Comment on CEMEx Rockfield Quarry Modification Project EIR.pages

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Good afternoon. Here is my response to the CEMEX Rockfield Quarry Modification Project EIR.

March 9, 2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

Comment 593-1

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. In todays world it feels to us citizens that those in power continue to prioritize wealth over health. At a national level, this is reflected in the practices of the current administration which aims to eliminate our social, economic, and political systems which make our country great. The defunding of the Environmental Protection Agency (EPA) and removing protections for our nation's most sacred lands is the first step at dismantling the concept of public land in the service of a greedy corporate America. Now at a local level these stains in the fabric of our republic bleed into weave of our blanket, our home Fresno. This project will endanger our community in multiple ways, and not only now but for many years to come if the proposed 100 year DEIR were to be approved. The San Joaquin River, our water quality, air quality, public recreation spaces, wildlife, and public safety are all to risk due to the wishes of an international corporation who's practices are banned in their own country of Mexico but allowed in our backyard. Many of the proposed mitigation measures are inadequate and many impacts lack any mitigation at all. As a local born and raised here in our home of Fresno, California allow me to elaborate on the issues present in the draft report which raise alarm.

Comment 593-2

Impacts on Water Quality and the San Joaquin River

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

There are also multiple inadequacies in the DEIR in terms of how much water will actually be used during operation of the mine. Multiple figures are present in the document which claim to be the max amount of water that is used during the ice of the mine so which figure is it? We would like to know exactly how much of our water will be diverted to be used in this project not only during the blasting phase of the project but also in the production of cement.

Comment 593-3

There are no concerns shared in the DEIR report for the chemicals that will be surfaced when using the technique of blast mining. In the past mines of this nature when at a depth of 260 feet release a particle 16 times smaller than the width of a hair, Hexavalent Chromium. This forever chemical is known to enter the body and through breathing and cause many adverse health effects such as emphysema, asthma, and lung cancer. What are the plans to mitigate the release of this toxin onto our air and water?

Comment 593-4

Geology and Impacts on Soil

Comment 593-5

The proposed 200 ft wall that will separate the San Joaquin River and the mine is highly inadequate in both its scope on the impact to the San Joaquin, and integrity for which CEMEX claims the wall to hold. The DEIR says the the official mitigation of the wall collapsing in a mine using explosives is to keep an eye on the wall and monitor it… this is highly inadequate and ridiculous to propose. The wall will eventually erode and leak into the quarry causing a spillage that will impact the health of the river and the health of the workers who aim to extract rejoices from the earth. This 600 foot deep pool will also have a large impact on water flow further down the river possibly impacting farmers and ranchers in our valley. What are the measures to secure water rights for our citizens and those who need it for agriculture?

Impacts on the San Joaquin River Parkway and Recreation

Comment 593-6

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, Ball Ranch, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment(s) 593-7 593-8

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 593-9

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR.
- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 593-9 Cont.

Comment 593-10

Comment 593-11

Threats to Wildlife

Comment 593-12

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The propose mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

Comment 593-13

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Comment 593-14

Impacts to Local Residents

Comment 593-15

I live in the Tower District and due to an increase in farm land and urban development encroaching on the wilderness surrounding our city, wildlife like red foxes have been appearing more frequently in people's backyards. Now extrapolate that sort of behavior of animal flight to the surrounding citizens which reside near the CEMEX plant. Mountain lions, bobcats, coyotes and foxes are sure to appear in peoples backyards if explosions were to go off and scare these animals away.

Property values are also shown to drop up to 30% when in half a mile of a blast mine and up to 14% in homes even 3 miles away from the project. Are there any concerns for the hard working citizens that will lose 30% of their life savings put into their property?

Comment 593-16

Wildfire Concerns

Comment 593-17

With an increase of wildfires and a decrease in trust in insurance companies, the concern for an errant spark causing a fire on the river is very present on the mind. No where in the DEIR report is there any fire mitigation and assurance of proper equipment maintenance. Are there any plans by the city to handle an enormous fire on the San Joaquin River? This must be included in the official EIR.

Economic and Urban Development

Comment 593-18

One major objection to the cessation of the CEMEX plant will be its contribution to urban development in the form of cement production as well as the amount of jobs crated by the project. I do empathize with the working class for which I am a part of when it comes to financial struggle but these issues should not be used to push through inadequate resource and land management policies in our local government.

After a quick research one can find that we have approximately 180% of the amount of aggregate that we need to grow here in Fresno for the next 50 years. The argument of scarcity should not be used in this case for we have an abundant supply. One can even argue that mining more aggregate would create even more waste than capital in the form of storage and recycling material which is not used and then re-ground to make new cement product.

CEMEX's Environmental Compliance

Comment 593-19

In 2020 CEMEX was kicked out of Monterey, California for violations at their sand mine site. Also compared to other aggregate companies in the Fresno area like Vulcan, CEMEX has 5x more violations. Since 2000, CEMEX has been cited 667 times and fined $52.4 million for environmental, safety & employment related offenses. Is a company that has a record of violating the law worthy of receiving a 100 year contract to exploit the San Joaquin River? The idea that that any privatized mitigation program could sufficiently monitor and manage a project with as large of an impact as this one for that long is preposterous. Neither you or I or even our grandchildren will not be able to keep this international corporate entity in check and they will eventually out live us if we let them.

Conclusion

Comment 593-20

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

I implore you and others in city management to consider rejecting the project outright in order to preserve the health of our city. Combat of ruthless company practices will be rewarded and praised in our community through respect and loyalty in upcoming elections.

Thank you for your time and consideration.

Sincerely,
Jesse Verduzco
1555 N Poplar Ave., Fresno, Ca, 93728

From:	Evelyn Vieira
To:	Randall , David A.
Cc:	Evie
Subject:	Cemex Mining Plans
Date:	Monday, March 10, 2025 3:55:15 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Comment 594-1

I strongly object to the Cemex Mining Plans to extend their operations and pursue Blast mining as opposed to the previous Mechanical Boring Mining which is less Dangerous to the Fresno-Madera already poor air quality, water resources, traffic congestion, noise pollution.

Comment 594-2

Please don't allow our vital air to become even more harmed, we are #4 worst Air Quality in the USA! We must learn from past mistakes and do better for ourselves and future generations! Cemex Mining isn't our only Mining Resource locally or in California, why jeopardize everyone's health for their greed? According to JOUAV.com March 27, 2024 over the length of a mining project the budget info. from the quicker Blasting vs. Tunnel boring machine is not that much savings compared Environmental impact, health, and safety issues.

Comment 594-3

Comment 594-4

Does our Police and Fire departments have all the resources on duty and available to Cemex in case of Blast Mining Emergencies? Cemex is no longer in a remote area, It is not far from schools, homes, eldercare facilities, PG&E plants, and Valley Children's Hospital.

Sincerely,
Evelyn Vieira

From:	Leni Villagomez Reeves
To:	Randall , David A.
Subject:	CEMEX EIR public comment
Date:	Monday, March 10, 2025 7:31:30 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

From: Leni Villagomez Reeves, M.D.
41585 Auberry Rd, Auberry CA 93602
LENIVREEVES@gmail.com
10 March 2025 7:30 AM
To: David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report

Dear Mr. Randall,

I oppose the proposed 100-year permit for the CEMEX mining operation. The e Draft Environmental Impact Report (EIR) prepared for this project is inadequate The EIR, as currently drafted, does not sufficiently or accurately assess the environmental, ecological, and community impacts that this long-term operation will have on the San Joaquin River and surrounding areas.

Comment 595-1

As someone who has lived in this area for over 45 years, and who has worked as an ER physician at Valley Childrens Hospital for over 20 of those years, I find that the EIR fails to adequately address the following concerns:

Comment 595-2

1. Impact on the health of the community, especially our children.

A project of this scale and duration requires a far more comprehensive environmental review that includes thorough scientific analysis, long-term cumulative impact assessments, and meaningful mitigation strategies. The EIR, as it stands, does not meet these standards, and I urge Fresno County to require revisions that fully account for the long-term consequences of extending CEMEX's mining operations.

Comment 595-3

I request that the Planning Department reconsider this permit in light of the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.

yours very truly,
Leni Villagomez Reeves, M.D.

David Randall
County Senior Planner
Fresno County Planning Commission
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Dear David Randall and the Fresno County Planning Commission,

Comment 596-1

I was born and raised in Fresno. I grew up spending my summers at the San Joaquin River and enjoy it still. But accessing the river has always been a challenge, and those areas that are accessible have been severely degraded by gravel pit mining. Improved river access and restoration would not only help create a more vibrant and attractive community, but would bring more awareness to the treasure that the San Joaquin River is, and help foster a closer sense of place and uniqueness for local residents. To say this is lacking in Fresno is an incredible understatement.

Comment 596-2

People want to see and visit A RIVER. Not a series of mine pits that scar the landscape. We can do better.

A healthy and publicly accessible San Joaquin River would benefit millions of Fresno County and San Joaquin Valley residents. Those that are around today and generations of those to come. The expansion of the CEMEX Rockfield mine will create a blight on the river that will negatively impact those same people while benefiting a small handful of individuals in the short term. The decision on this mine expansion should be clear. Do you support the needs of millions of present and future Fresno residents or the desires of a few who wish to further damage a public resource for their benefit?

The CEMEX Rockfield mine on the San Joaquin River should be decommissioned as planned, not extended for another 100 years, or allowed to blast a 600-foot deep pit. The area should be restored and eventually made accessible to the public, something that is not likely to happen if this expansion is approved. **I am urging the Fresno County Planning Commission to reject CEMEX's proposed Rockfield mine expansion.**

Sincerely,

James Von Tersch, Fresno resident.

Evonne Waldo
329 W. Bullard Av
Fresno, Ca 93704
Evonnewaldo@yahoo.com
831-214-1007
March 10,2025

David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Opposition to the CEMEX 100-Year Permit and Challenge to the Draft Environmental Impact Report

Dear Mr. Randall,

I am writing to formally express my opposition to the proposed 100-year permit for the CEMEX mining operation and to challenge the adequacy of the Draft Environmental Impact Report (EIR) prepared for this project. The EIR, as currently drafted, does not sufficiently or accurately assess the environmental, ecological, and community impacts that this long-term operation will have on the San Joaquin River and surrounding areas. Comment 597-1

As someone concerned about the welfare of my grandchildren and their children, I find that the EIR fails to adequately address the following concerns: Comment 597-2

1. cumulative environmental impacts,
2. community health concerns]** Comment 597-3

A project of this scale and duration requires a far more comprehensive environmental review that includes thorough scientific analysis, long-term cumulative impact assessments, and meaningful mitigation strategies. The EIR, as it stands, does not meet these standards, and I urge Fresno County to require revisions that fully account for the long-term consequences of extending CEMEX's mining operations. Comment 597-4

I request that the Planning Department reconsider this permit in light of the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.

Thank you for your time and consideration.

Sincerely,
Evonne Waldo

From: L W
To: Randall , David A.
Subject: CEMEX Rockfield Expansion Project
Date: Monday, March 10, 2025 3:59:51 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

Comment 598-1

I wanted to briefly voice my strong concerns against allowing CEMEX to expand their operations along our San Joaquin River. This river has struggled for decades to overcome the lack of water to its clogged up flow to the point that we no longer have salmon spawning here. Along with the water flow problems, the increase in traffic and resulting air pollution is not worth the environmental cost to not only the river but the surrounding embankments, neighborhoods and general area in Fresno. We have enough sources for aggregate and cement without this expansion so please, please don't let this be approved.

Comment(S) 598-2 598-3

Sincerely,

Lisa Walzem
Longtime Fresno resident and very concerned citizen.

From: Gary Warner
To: Randall , David A.
Subject: Opposition to the CEMEX Rockfield Quarry Modification Project
Date: Monday, March 10, 2025 4:21:34 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

David Randall, Senior Planner
Fresno County Public Works & Planning Department Development Services & Capital Projects Division.
2220 Tulare Street, 6th Floor
County of Fresno
Fresno, CA 93721

Dear Mr. Randall,

I appreciate the opportunity to submit comments on the Draft Environmental Impact Report (DEIR) for the CEMEX Rockfield Quarry Modification Project. My wife and I reside in the community directly across from the quarry site, and given our proximity to the proposed mining operations, we would bear the most significant negative impacts. Accordingly, I urge you to address several serious concerns before moving forward with any potential approval.

Comment 599-1

At the outset, I would like to highlight the inherent imbalance in this process. CEMEX has unlimited time, significant financial resources, access to technical experts, and the ability to make considerable political donations to influence key decision-makers. In contrast, the public is given only 45 days to respond to a thousand-page technical document without similar economic capacity or expertise. As such, we rely on public officials like yourself to ensure that the interests of the community are protected against projects such as this one by fully addressing the following issues.

Comment 599-2

1. Environmental Concerns

Comment 599-3

The proposed expansion presents substantial environmental risks. The deeper extraction of materials poses a serious threat to local ecosystems. The DEIR acknowledges potential adverse effects on air quality, water resources, and wildlife habitats. Increased emissions of particulate matter and greenhouse gases contribute to environmental degradation and public health risks. Additionally, the impact on the San Joaquin River and surrounding water tables raises concerns regarding long-term water availability and quality. The risk of water contamination is particularly troubling given the proximity of the quarry to critical groundwater resources that local residents depend on.

2. Adverse Effects on Public Health and Quality of Life

Comment 599-4

The expansion would exacerbate air pollution, increasing respiratory issues among residents. Dust, fine particulate matter, and potential toxic emissions from mining operations have been linked to asthma, bronchitis, and other lung diseases. Noise pollution from blasting, heavy machinery, and increased truck traffic will further degrade the quality of life for nearby communities, reducing property values and making residential areas less desirable.

3. Negative Impact on Local Infrastructure and Traffic

Comment 599-5

The project would significantly increase truck traffic, overburdening North Friant Road and other local roadways. The increased wear and tear will necessitate costly taxpayer-funded repairs. Traffic congestion and safety hazards, particularly for cyclists and pedestrians, will escalate. Additionally, the increased presence of heavy trucks raises serious public safety

concerns, with residents already reporting dangerous conditions due to industrial traffic. In addition to current traffic issues, the increase in future traffic needs to also be considered given the new communities that are emerging in the area.

Comment 599-5 Cont.

4. Inconsistency with Regional Planning and Conservation Efforts

Comment 599-6

The San Joaquin River Parkway Master Plan emphasizes conservation and recreational land use. Expanding mining operations in this area directly contradicts these regional objectives. The project threatens protected riparian habitats and undermines Fresno County's broader land-use planning goals. Conservation groups have warned that increased excavation will disrupt local wildlife populations, including endangered species.

5. Economic and Social Disruptions

Comment 599-7

Studies show that properties near active mining operations suffer devaluation due to noise, dust, and industrialization. Home values in similar communities have dropped by as much as 20-30%. Homeowners may also struggle to secure or maintain insurance due to the risks associated with mining activities, including blasting damage and groundwater contamination.

While CEMEX claims the project will generate jobs, the short-term economic benefits do not outweigh the long-term environmental and social costs. Increased pollution could deter tourism and recreational activities that contribute significantly to the local economy.

The negative economic impact on the nearby community needs to be considered, and efforts to mitigate such impact need to be addressed.

6. Lack of Necessity for Additional Mining Resources

Comment 599-8

A Fresnoland investigation found that Fresno County already possesses a 200% surplus of gravel resources, one of the highest in California. This surplus is projected to meet regional demand for decades. Approving this project would result in unnecessary environmental degradation without economic justification. More sustainable resource management alternatives should be considered.

7. Insufficient Mitigation Measures

Comment 599-9

The DEIR acknowledges significant environmental impacts, yet the proposed mitigation measures are inadequate. The long-term consequences of deeper mining operations remain uncertain, and irreversible damage to land and water resources is a major concern. Groundwater depletion and contamination pose particularly serious risks to nearby communities that rely on these water sources.

Conclusion

Comment 599-10

Given the overwhelming environmental, public health, and infrastructure concerns, the CEMEX Rockfield Quarry Modification Project should not be approved in its current form. A more sustainable approach to resource extraction must be considered, prioritizing environmental preservation, community well-being, and responsible land use.

Comment 599-11

Furthermore, given Fresno County's substantial surplus of gravel, this project is unnecessary and would result in excessive environmental destruction for minimal economic gain. We urge decision-makers to reject this proposal and seek alternative solutions that align with Fresno County's environmental and social priorities.

Sincerely,

Gary & Venus Warner
15264 Mesa View Ave
Friant, CA 93626
(559) 284-6012

From: bevow@comcast.net
To: Randall , David A.
Subject: Cemex
Date: Monday, March 10, 2025 8:58:04 AM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

March 10, 2025
David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 600-1

Impacts on Water Quality & the San Joaquin River

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

Comment 600-2

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 600-3

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 600-4

Impacts on the San Joaquin River Parkway & Recreation

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

Comment 600-5

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and

maintaining the trail if the trail is used as a community benefit of the project.

Comment 600-5 Cont.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 600-6

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 600-7

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 600-8

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 600-9

Threats to Wildlife

Comment 600-10

The DEIR fails to adequately analyze the impact on species like Swainson’s hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts.This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 600-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX.The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,

Laura Watkins
49 W Powers Avenue
Clovis, Ca 93619

From:	Liz Gabriel
To:	Randall , David A.
Cc:	sweaver@riverparkway.org; Liz Gabriel
Subject:	CEMEX Rockfield Expansion Project DEIR
Date:	Monday, March 10, 2025 4:07:38 PM

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Dear Mr. Randall,

My name is Elizabeth Weeks, and my family and I live at 15226 Bluff View Ave in Friant, directly across the street from the Cemex Quarry. As someone who enjoys the beauty of the river, and a local resident, I have so many concerns. Thank you in advance for taking the time to read through my entire e-mail. Comment 601-1

After trying to read through this very large document and seeing all that can go wrong, I think the only option is the 'No Project' option. I truly feel that this project will do irreparable harm to the river, wildlife, humans, land, air, water, and everything else. We are not a town in need of more quarries. We are a town that's in need of more open spaces and outdoor activities to enjoy with our families. As builders stack one home on top of another and make the backyards so tiny that they're unusable, this river and area is more needed than ever before. We currently have many mines in the surrounding area that are either operational or permitted and can operate at any time. Fresno County has 200% surplus of what we need for the next 50 years, so this project seems unnecessary. Comment 601-2

As someone who lives across the street from Cemex, I'm a bit flustered at all of the mitigation promises as I'm wondering why they're not doing them now. Having experienced the frustrations of having Cemex do whatever they want, and nobody to help us, this DEIR has caused a ridiculous amount of anxiety as I feel that the promised mitigation practices are nothing more than words on paper. In addition, people in this community were told that Cemex would cease operations and leave years ago, and now they want us to trust more promises for another hundred years. Once given the green light, they will continue to practice as they have been. Considering all of the horrific things that can go wrong, even if they miraculously followed the mitigation practices to their full extent, they admit that accidents may happen and therefore that would endanger the lives of so many people and the destruction of the San Joaquin River. If they are allowed to proceed, any issues that come up or accidents that happen will have been foreseeable especially when residents and reporters are sounding the alarm at their constant violations. So I ask myself why if Fresno has 200% gravel surplus for the next 50 years, and Cemex has a proven track record of violating rules and paying out and moving on as if nothing happened, why is Fresno County even considering this project? The best predictor of future behavior is past behavior. And I believe that they have already shown us who they are. Comment 601-3

We want something different. I moved from Los Angeles to Fresno because of the lack of traffic and the wide open spaces. Contractors have removed our farmlands one after another and put in homes that are the minimum distance away from each other leaving no backyard space for children or families to spend time outdoors. The stacking of homes right on top of each other is more of a reason to deny this project as the residents in this town deserve much better than a company that threatens to damage the San Joaquin River and take away the few outdoor pleasures we now have in this town. When talking to physician groups, they will all say that recruiting to this town is extremely hard. It's not a lack of housing as Cemex and the contractors would have you believe, it's the lack of anything fun to do in this town. So as we keep giving companies like Cemex permission to do their worst to our air, water, roads, river, and homes, we're also preventing other professionals from coming into this town. It's a very serious issue as we draw more residents here with track homes, but will lack the staffing of professionals to care for them. That's a crisis waiting to happen. Comment 601-4

Here are some of my biggest concerns:

Comment 601-5

Blasting and digging:
-The proposed mine is 200 feet away from the river. What happens if this gets breached/damaged from the blasting and digging? This is dangerously close. Who pays for the repair? And could it even be repaired?

-The DEIR hugely lacks information about the explosives being used and therefore their conclusion that they will have the same results as the study from 1980 doesn't hold water. In reading a much more recent article from 2023 from the NIH, it explains that the gases released are based on explosive composition, explosive reaction degree, rock mass medium, working environment, etc. In addition to CO, NH3, NO, NO2, and other toxic gases, H2S and SO2 will also be generated if sulfur or sulfides are present in the explosives or the rocks. We don't know what will be produced from these blasts as we do not have all of the information required, and therefore, we don't know what they're putting into the groundwater, river, or air.

Comment 601-6

-Since there are no federal or state mining regulations that specifically address potential blast-induced impacts at surface mines such as this, who will be regulating this? What rules will the County make sure they abide by to keep us safe?

Comment 601-7

-The DEIR doesn't do a good job discussing the effects of digging or blasting on surrounding land or river bottom.

Comment 601-8

Water levels:
-The DEIR claims they will monitor local wells every 6 hours, compile it into a report in 6 months, and submit that to the county in a year. By the time this process has been completed, wells could technically be completely dried out. If levels drop more than 15%, then they will investigate the cause. If they can rule out all other possible causes, of which they list many, then they may begrudgingly take responsibility. Their solution will be to try to fill up the well, to the minimum of 14.9% depletion (it states from 0 to 15% so it could be 14.9%). At best, they say they will try to fill it up to 85% of what we originally had. If unable to repair it, they will stop mining and update the reclamation with the total depth mined. That's it. There's no recourse to the homeowners who have lost their homes. Residents need to have immediate access to reports (weekly) and have the ability to force the mining company to stop mining immediately until these wells have been fixed. Cemex doesn't get to decide if they want to take responsibility. If this gets approved, a bond would need to be set up to buy out all local homeowners at fair market value plus a reasonable increase in price had Cemex not been there and we were able to continue to live here for another 20-30 years, plus an additional amount due to forcing relocation.

Comment 601-9

Aesthetics:
-Looking at the pictures of what the views look like now and what they will look like, I found all of the pictures to look oddly identical, as if nothing were occurring for the next 100 years. In reading the report, we know that in addition to the pit, there will be hundreds more trucks, customer cars, oil drums, blasting equipment, billows of dirt, and so many other things. The visual will not improve for anyone. In the report, it states that my community will have a better view in 100 years because of some trees and a gate. If Cemex wanted to be good neighbors, they could've put up trees and a gate some time in the past 100 years. That's not much to ask. Why didn't they do it already? The promises that are being made for 100 years from now, they are aware that nobody can hold them accountable for in 100 years. And that's assuming that in 100 years, they don't ask for another 100 year extension to do much worse.

Comment 601-10

Lighting:
-One of the reasons many chose to move out to this area was because of the lack of light pollution. The DEIR states that there will be no impact because the lights will be taken down in a few decades. Once again, the time in between has been ignored. There needs to be a real study done on the effects of light pollution to this area, when many chose to move out here to enjoy such things as star gazing.

Comment 601-11

Air Quality:

Comment 601-12

-The DEIR lists information from one station that's 9 miles away, and only measures distances up to 2.5 miles and the report is from 8 years ago. The air quality is significantly different here than in the middle of the City of Clovis or Fresno, and different than it was back in 2017. There are so many days that the diesel fume and dust from across the street are so bad, that we have to stay inside until dissipated. It takes Air Pollution control hours to arrive, and by that time the dust has settled. A proper mitigation would be to install a monitoring device and live camera feed directly to Air Pollution Control so that they are able to see for themselves. And in addition, there would need to be a hefty fine associated with every single day that they are in violation and put into a bond that will cover healthcare costs of local residents who suffer due to their negligence. In addition, residents need to be made aware of the days they were in violation and have their CUP cancelled if they violate more than a certain amount of days. The DEIR claims that all of these toxins can be mitigated to be under the allowable amount, but who is monitoring that? Stating there's new equipment that's safer isn't mitigation. It also states that the cancer risk is significantly high for residents close by, but with mitigation, that won't be the cause. Who's monitoring to make sure this cancer risk is truly mitigated?

-The DEIR states that this project could increase the levels of CO, PM2.5 and PM10 to exceed the safe limits. With mitigation, they state that the levels will decrease. However, the mitigation is to buy newer trucks and tamp down the dirt with water. Considering how dangerous and life-threatening all of those are, those mitigation measures don't seem sufficient. If Cemex is aware of these protocols, why aren't they doing them now?

Comment 601-13

Diesel fumes:
The DEIR states that 70% of cancer risk is from diesel fumes. Therefore, they've set up rules to mitigate which requires idling to be limited to 5 minutes. However, there are a slew of reasons they can violate that rule. So the 5 minute rule is put into place because of the dangers, but those dangers take a back seat to every possible reason they could have to idle. As someone who can see the trucks across the road, those trucks are idling first thing in the morning for approximately an hour. So does the 5 minute rule not apply to them now? I would think it's just as unsafe to idle more than 5 minutes now than it would be if the project gets approved. This is yet another reason why allowing Cemex to monitor themselves and tell us that nothing bad will happen as they have rules to follow means nothing more than words on paper. We are currently being exposed, and nobody is doing anything about it.

Comment 601-14

Odor:
The DEIR acknowledges that odor is a significant impact if it is confirmed more than once a year for 3 years, or average of 3 unconfirmed complaints in that same time. So the odor would have to be tolerated for at least 3 years before anything could be done. Their solution is to try to use asphaltic cements with lower VOC/SVOC, to the extent feasible. So if it's not 'feasible' according to them, they could forego this mitigation. So for at least 3 years, residents may have been subjected to extremely dangerous and life-threatening toxins in the air. In addition, since SVOC doesn't have an odor, we wouldn't know it's in the air. The DEIR acknowledges cancer risk is high for local residents, but will do their best to mitigate. That's not very reassuring.

Comment 601-15

Road hazards:
-The DEIR missed a very important section about rocks/debris flying out of Cemex trucks. In the past year, I have had 3 cracked windshields. I try to avoid driving anywhere close to a Cemex truck now. If I'm able, I will pull over to give myself some distance. California code states that trucks should be covered to prevent items from flying out. I understand there are some exceptions to the rule for aggregate material, but in considering all of them, it seems that they are still in violation. Their own DEIR states that they need to cover their hauls. The fact that I have had 3 incidences in 1 year is proof that they're in violation. It is extremely jarring to have something hit your windshield so hard that it breaks. In addition, we have many bike riders that may be hit in the face while riding. This is extremely dangerous. In talking to residents all around town, I've heard many stories of the same thing happening to them. This is an extremely dangerous road hazard that needs to be addressed immediately. In addition, as they leave the stations, they track so much dirt and gravel onto Friant Road. You can see the plume of dirt as they exit. So any car driving through that could kick up rocks on to other cars or bike riders. What is their mitigation to ensure this will not happen moving forward?

Emergency Services:

-The DEIR states that since no road closures are required and Friant Road is a 4 lane road, that their trucks would not interfere with emergency services. However, that fails to mention Cemex trucks are routinely seen on Willow cut-through to Copper Ave, Copper Ave east of Willow, and Minnewawa Ave, each having only 1 lane each way. Will Cemex vehicles be restricted from traveling on these roads? What if the emergency vehicle or a resident is in a rush to get to a hospital and wanting to go speed limit vs 15 miles an hour following behind Cemex trucks? Cemex trucks consistently cause traffic and delays and it will get worse with the addition of more vehicles. The DEIR states no mitigation is required, however I think that mitigation should either require Cemex trucks to stay off these roads indefinitely or expand them to be 4 lanes like Friant.

Comment 601-16

Noise:

-The current noise level is much higher than the DEIR states and common sense says it will get much worse. The berms do nothing to protect the sound traveling up and into our community. We can hear the trucks entering and leaving the quarry, so it would be highly impossible that that sound would not get worse. There is not much in the way of mitigation. And if there were, why aren't they doing it now?

Comment 601-17

-Blasting 10a-2pm weekdays will make my home feel like I'm living in a war zone. They don't have any real information on explosives used or how they would mitigate the sound, the vibrations, or the damage done to the surrounding properties‘ home structures or windows. In addition, the vibrations even if not felt by humans will definitely be felt by wildlife animals and our pets. As most pet owners are aware, 4th of July is a very scary time for their pets. This project will condemn us to that type of disturbance on a daily basis for the rest or our time here. We will be forced to sell and move out as that type of noise is extremely unhealthy for pets and humans with medical conditions. In addition, expanding the work hours to outside normal business hours means we won't get a break at all. The new hours state that they can work weekends, nights, around the clock. This gives them carte blanche permission to do whatever they want, whenever they want. I do not believe there is any mitigation for blasting. This should absolutely not be allowed to happen. If this gets approved, a bond would need to be set up to buy out all homeowners who feel the effect of the blasting (not for Cemex to judge but for homeowners) at fair market value plus a reasonable increase in price had Cemex not been there and we were able to continue to live here for another 20-30 years, plus an additional amount due to forcing relocation.

Comment 601-18

Traffic:

-Table 4.17-1 states that there are currently an average of 342 trucks entering and 342 trucks exiting for a total of 684 per day. However, this wrongly assumes they are working 365 days. Cemex currently works 5 days a week and closes for holidays. If we give them the benefit of 260 working days, the actual number is 480 entering and 480 exiting for a current daily total of 960. I think this is a huge difference when talking about how many trucks are out on any given day. Similarly, table 4.17-3 states that for stage 1 there will be a total of 1,074 daily truck trips. Since they don't work 365 days, the more accurate number would be 1,510 truck trips (assuming 260 days). That's a huge daily increase in traffic, and would cause irreparable harm to our roads and to all of the residents trying to get to/from work and school every day.

Comment 601-19

-When contractors build a community of homes, they're typically required to do many things such as adding lanes to roads, building schools, etc. Other than paying a small share of adding some lights here and there (the offer to expand Willow at Copper is moot since that was already done by a builder), they haven't been asked to pay for any of the inconvenience and damage. Considering their trucks will be equivalent to 2 billion passenger vehicles on the road annually, they need to pay a huge share of repairing our roads and expanding roads that will be backed up because of their operation.

Comment 601-20

EFFECT ON LOCAL HOMEOWNERS:

Comment 601-21

-Homeowner's Insurance: I have spoken to insurance agents and was told that an insurance company would have the right to cancel policies if they found that a company was blasting across the street. They can't be sure that the blasting will not affect the structure of the home. The DEIR makes it seem like there will be tiny blasts going off and that they last for short periods of time, however, the underground vibration could affect the structure of our entire community. What will Cemex do to protect the homeowners when our policies get cancelled? If this gets approved and we lose our homeowners policies or our policies

exclude certain provisions due to the mine across the street, then Cemex should have buy out homeowners at fair market value plus a reasonable increase in price had Cemex not been there and we were able to continue to live here for another 20-30 years, plus an additional amount due to forcing relocation.

Comment 601-21 Cont.

-Decrease in property value: All of the above environmental concerns will also be a huge concern for any potential buyer of homes anywhere close to this mine, and will significantly reduce the value. In speaking to realtors and asking how this would affect my sales price, I was told that it would be significant and the buyer would have to get a 'great deal' to put up with all of the nuisance of the mine and want to take the other risks that come with being this close to a blasting mine. In doing online research, it seems that homes that are within 1/4 mile saw their property values decrease approximately 30-40%. If this project gets approved, then each homeowner that's affected should be given the option of staying in their home and having Cemex pay them the loss in home value based off of fair market value in addition to loss of future gains. Since appraisers use homes with a given vicinity to value homes, that means all homes within miles will see their property values decrease. As homeowners lose value in their homes, the County and even city of Fresno and city of Clovis will also lose due to decrease in property taxes based on new lowered values.

FUTURE DEVELOPMENT:

-The DEIR states that this will not interfere with any future projects, however, one could easily say that it absolutely will. There are land lots available on Friant Road for people to purchase and build their dream home. How many do you think will want to build right next to this mine? We have the opportunity to attract buyers who want to build their dream homes across from a beautiful river that will bring in a lot of property taxes to the County. They will not pay to build across from Cemex.

Comment 601-22

POLICIES AND GOALS:

In reading through this document, I found many policies and goals from the agencies and feel that everything in this DEIR goes against them. I have listed some of the most important ones I feel would be violated if this project were to be approved and support my opinion of the 'No Project' option:

Comment 601-23

Policy H-G.5 states that the County shall manage development of land within and adjacent to existing neighborhoods to avoid adverse impacts on living environment.

Policy OS-G.11 states the County shall continue, through its land use planning processes, to avoid inappropriate location of residential uses and sensitive receptors in relation to uses that include, but are not limited to, industrial and manufacturing uses and any other uses which have the potential for creating a hazardous or nuisance effect.

Goal OS-G: To improve air quality and minimize the adverse effects of air pollution in Fresno County.

Policy LU-A.3.c: The operational or physical characteristics of the use shall not have a detrimental impact on water resources or the use or management of surrounding properties within at least one-quarter (1/4) mile radius.

Policy OS-C.4: The County shall impose conditions as necessary to minimize or eliminate the potential adverse impact of mining operations on surrounding properties.

Goal LU-C: To preserve and enhance the value of the river environment as a multiple use, open space resource; maintain the environmental and aesthetic qualities of the area; protect the quality and quantity of the surface and groundwater resources; provide for long term preservation of productive agricultural land; conserve and enhance natural wildlife habitat; and maintain the flood-carrying capacity of the channel at a level equal to the one (1) percent flood event (100-year flood).

Goal OS-C: To conserve areas identified as containing significant mineral deposits and oil and gas resources for potential future use, while promoting the reasonable, safe and orderly operation of mining and extraction activities within areas designated for such use, where environmental, aesthetic, and

adjacent land use compatibility impacts can be adequately mitigated.

As someone who hopes to stay in this town for years to come, I truly hope we can take our river back and keep it safe for future generations to enjoy. Comment 601-24

Mr. Randall, thank you again for taking the time to read my very lengthy letter.

Kind regards,
Elizabeth Weeks

From:	Patricia Wells
To:	Randall , David A.
Subject:	CEMEX project
Date:	Monday, March 10, 2025 1:31:37 PM
Attachments:	Ltr re EIR Challenge.pdf

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Report Suspicious

Comment 602-1

Dear Mr. Randall,
I have written a letter regarding the CEMEX project, attached to this email.
May the future generations have the treasures that nature has provided for us.
Please take into consideration the many many species that will be impacted by this project, a project that could easily be moved to the area where you are already extracting materials.
Thank you,
-Patricia

March 9, 2025

To: David Randall, Senior Planner
Fresno County Public Works and Planning Department
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor, Fresno, CA 93721

From: Patricia Wells
414 N Park Ave
Fresno, CA 93701
patriciawells1@gmail.com
559-612-6180

Re: Opposition to the CEMEX 100-Year Permit and Challenge to the Draft EIR Report

Dear Mr. Randall,

Comment 602-2

I am writing to formally express my opposition to the proposed 100-year permit for the CEMEX mining operation and to challenge the adequacy of the Draft Environmental Impact Report (EIR) prepared for this project. The EIR, as currently drafted, does not sufficiently or accurately assess the environmental, ecological, and community impacts that this long-term operation will have on the San Joaquin River and surrounding areas.

Comment 602-3

As someone who loves the region, I find that the EIR fails to adequately address the following concerns:

The impacts on wildlife habitat, water quality, air pollution, noise pollution, groundwater depletion, cumulative environmental impacts, or community health concerns will devastate the environment and render the area to be an undesirable place to visit, my greatest concern is how the future will unfold.

Comment 602-4

For example, you sir, do you have children, grandchildren, or simply have friends with children. How will you explain why you chose to destroy this area given the availability of a region where you are already extracting material? Do the future generations matter to you, sir? In this age of lies and deception, does it not matter that most of Fresno does not know of these plans? And finally, do the opinions of Fresno residents matter to you?

A project of this scale and duration requires a far more comprehensive environmental review that includes thorough scientific analysis, long-term cumulative impact assessments, and meaningful mitigation strategies. The EIR, as it stands, does not meet these standards, and I urge Fresno County to require revisions that fully account for the long-term consequences of extending CEMEX's mining operations.

I request that the Planning Department reconsider this permit in light of the inadequacies of the EIR and demand a more thorough environmental review before any decisions are made.

Thank you for your time and consideration.

From:	District 2
To:	AnaTom W; Randall , David A.
Cc:	District 2
Subject:	RE: Stop CEMEX from operating at our neighborhood
Date:	Monday, March 10, 2025 10:52:23 AM
Attachments:	image001.png

Hi Ana,

Thank you for reaching out and sharing your concerns about the heavy truck traffic on Friant Road and the potential extension of operating permits for CEMEX.

As a long-time resident of Fresno Bluffs, your safety and the well-being of your neighborhood are clearly very important, and I understand your worries regarding these issues.

Your perspective on shifting our local economy from heavy industry toward a service-oriented model is noted and appreciated. I have shared your comments with Supervisor Bredefeld, and they will be carefully considered as we evaluate the impact of the proposed permits.

Thank you again for your thoughtful input. Please feel free to reach out if you have any further concerns.

Sincerely,

Danny

Daniel Gai, M.S.| Chief of Staff
Supervisor Garry Bredefeld, District 2

2281 Tulare Street, Fresno, CA 93721
Office: (559) 600-2000 Direct: (559) 600-2001
Email: dgai@fresnocountyca.gov
With strong, proven leadership, we are committed to keeping the government accountable and working for the taxpayer.

From: AnaTom W <anatomw51@gmail.com>
Sent: Saturday, March 8, 2025 4:24 PM
To: Randall , David A. <drandall@fresnocountyca.gov>
Cc: District 2 <district2@fresnocountyca.gov>
Subject: Stop CEMEX from operating at our neighborhood

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK Report Suspicious

Mr. David Randall

Fresno County Public Works and Planning Department

Dear Mr. Randall,

I have been a resident of Fresno Bluffs for the last 30 years and had numerous close calls while driving on Friant Road due to the heavy truck traffic generated by the CEMEX company in the middle of residential area.

Comment 603-1

Vast majority of Fernans believe that a city at our location needs to pivot from polluting heavy industry to a service economy. Why don't you guys?

Comment 603-2

I can tell you that extension of operating permits for CEMEX will make many of my neighbors in the Bluffs REALLY angry and we will not hesitate to show it.

Please, make a smart decision that is aligned with the will and interest of your constituency and stop CEMEX from operating in our neighborhood.

Sincerely,

Tom and Anna Wielicki

From: Christine Williams
To: Randall , David A.
Subject: CEMEX Expansion
Date: Monday, March 10, 2025 12:04:58 PM

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Report Suspicious

Comment 604-1

I want to voice my opposition to the proposed CEMEX Expansion.

I have been a resident of Woodward Lake since 1988. I have always enjoyed the peace and quiet and the beauties of nature which this area provides. At first, we had no noise pollution except an occasional noisy truck on Friant Road. Eventually, we started being buzzed several times a day by an unwelcome helicopter (Cty or Highway Patrol?). This noise pollution is unsettling and interferes with the peaceful life that I value very much.

NOW, we are in danger of far more noise pollution from unexpected blasting sounds and an increase in truck traffic on Friant Road! Birds and other wildlife could diminish in numbers because they, like us, do not thrive when they are frequently bombarded by unexpected loud sounds.

Comment 604-2

When the birds and wildlife diminish or disappear altogether, the ecosystem of the San Joaquin River will be negatively affected, Adding to the degradation of the River ecosystem will be more dust in the air and water, further eroding the health of the fish and wildlife in the area. This is an unsustainable situation which will only worsen over time. Possibly there will be additional mining chemicals released into the water and air that could prove to be deadly or affect the health of humans and wildlife alike.

Please do not approve the CEMEX Expansion!

Chris Williams

Darlene Young
411 E. Deer Creek Lane
Fresno, CA 93720

March 10, 2025

Dear Mr. Randall,

I am writing to express my concerns to the proposed 100 yr. permit for the CEMEX mining operation.

Comment 605-1

For the last 34 yrs., I have resided near Friant Rd. and depend on its access for daily use. Granting the permit to CEMEX, as proposed, will significantly impact traffic, air quality from equipment exhaust and increase health risks.

Comment 605-2

The vibration and dust created by drilling near recreational areas will impact the wildlife habitat and those of us who use the trails near by.

I respectfully request your consideration to these concerns.

Thank you for your consideration.

Darlene Young

Darlene Young
411 E Deer Creek Ln
Fresno, CA 93720

Mr. David Randall Senior Planner
Depart. of Public Works & Planning
2220 Tulare St. 6th Fl.
Fresno, CA 93721

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MAR 10 2025
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County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Darlene Young
411 E Deer Creek Lane
Fresno, CA 93720

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Ms. Young

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

From: Sean Zweifler
To: Randall , David A.
Subject: Comments on CEMEX Rockfield Expansion Project DEIR
Date: Monday, March 10, 2025 1:25:07 PM

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David Randall, Senior PlannerCounty of FresnoFresno, CA

Dear Mr. Randall, thank you for taking my comments on the draft EIR for the CEMEX expansion project. I have numerous concerns about the environmental impacts that this draft EIR does not adequately address. Comment 606-01

1. Tricolor blackbirds have been recorded throughout this region, more study is needed to see how land use changes and blasting noises will affect these critically imperilled birds. The EIR completely dismiss the possibility of them utilizing the sites which seems unlikely. Comment 606-2

2. Yellow warblers are not even mentioned, despite being a special status species that occurs along the San Joaquin River.

3. *Sagittaria sanfordii* is documented throughout the Fresno region, including a number of manmade habitats such as irrigation canals. To treat this plant as presumed absent is inappropriate. It is quite likely this species occurs in ponds, ditches or other water features throughout the two sites. A focused survey should have been done. Comment 606-3

4. *Delphinium hansenii* **ssp.** *ewanianum* is documented in valley grassland throughout the Fresno region. To treat this plant as presumed absent is inappropriate. A more focused survey for this plant should have been conducted.

5. Cryptantha hooverii this plant has been documented on the Madera side of the river in valley grassland. To treat this plant as presumed absent is inappropriate and a more focused survey should have been conducted.

6. In general the reports from consultants that inform this dEIR are riddled with errors. Plant names are misspelled, non native plants are listed as native, habitat descriptions are incorrect. For example "**The area between the river banks and the project site, support upland vegetation, primarily extensive non-native grasses (*Stippa* spp.) and scattered valley oaks woodlands.**" Stippa is not a plant, Stipa is, but it's a native bunchgrass. Likely meant Bromus. Comment 606-4

7. The dEIR makes no mention of Kern brook lamprey ***Lampetra hubbsi,*** a species known to occur in the adjacent stretch of the San Joaquin River and the Friant-Kern canal. It is quite likely to occur in the delivery ditch at the plant site as well. Comment 606-5

8. This project conflicts with the San Joaquin River Parkway master plan in a way that would likely make it unfessible to ever complete the parkway and multi-use path. While the EIR makes vague statements about easement availability, in the absence of any clear plan or commitment to mitigate these impacts this is highly unlikely to occur. In addition this project, even with easements for a trail, would severely detract from the beauty and enjoyment of this trail. Comment 606-6

9. The EIR makes no mention of impact to bicycle traffic along Friant and Willow roads. These are heavily trafficked by bicycle riders, and increased truck traffic as well as increased gravel spillage on the roads would contribute to making these stretches significantly more dangerous for cyclists. Comment 606-7

10. The draft EIR fails to address how increased aggregate availability would impact Comment 606-8

development patterns in the region and lead to increases in traffic, decreases in air quality, loss of habitat, and other negative effects in our region. Comment 606-8 Cont.

11. The draft EIR fails to take into account white root sedge *Carex barbarea* beds as a cultural resource. This is a really important material for basketry and is known to occur in culturally significant sized patches near the project site and should be taken into account. Comment 606-9

12. The draft EIR fails to take into account expanded minings impacts on recreation on the river, such as fishing and floating down the river. Comment 606-10

13. The draft EIR completely fails to take into account the impact of the noise of blasting on birds breeding off of the project site. Comment 606-11

Thank you for taking comment on this project

Sean Zweifler

From: Mtunga, Tawanda
To: Randall , David A.
Subject: FW: STOP CEMEX
Date: Tuesday, March 11, 2025 8:16:39 AM
Attachments: image001.png

Tawanda Mtunga | **Principal Planner**
Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4022 Direct: (559) 600-4256 Cell Phone: (559) 826-9265
Your input matters! Customer Service Survey

From: Jericho Guansing <jerichoguansing001@gmail.com>
Sent: Monday, March 10, 2025 11:01 PM
To: Mtunga, Tawanda <tmtunga@fresnocountyca.gov>
Subject: STOP CEMEX

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Comment 607-1

Hello, I am Jericho Guansing. I have lived in the Central Valley for my whole life and I am an advocate for preserving the health of not only the environment of the valley, but the people living in it. The San Joaquin Valley has many elderly people and young children living in it. The drilling by CEMEX is something I oppose as it threatens the health of the people living in the valley. Firstly, the drilling will cause slopes and the ground to become unstable. This instability of the ground will inevitably cause particulate matter like dirt to pollute and spread through the air. The valley's air quality is already terrible as is and places like Bakersfield and Fresno are constantly dealing with high levels of tropospheric ozone and particulate pollution. The two sites that CEMEX is planning will create a large amount of air pollution. This air pollution, on top of the already existing pollution, will create conditions unsuitable for the health of the citizens living here as it will worsen health conditions like asthma and even cause health conditions. I would like to speak about a personal experience with growing up with asthma. My sister and I both personally had terrible asthma and it was only worsened with the air quality. If we were to grow up with the worsened air pollution from CEMEX, who knows how our health would be now? I am fortunate enough that my asthma doesn't impair my health now, but what about the other children who are just like me? Their health will be significantly impacted by the CEMEX drilling. This project will span over 100 years and the effects will be devastating for the younger generation. A whole generation of kids from the central valley will be facing major health problems like asthma, bronchitis, and other respiratory issues. I would also like to speak about the elderly population. My grandma was recently diagnosed with cancer and is currently being treated for it. Many other elderly people are facing the same diagnosis as my grandmother. Many are also facing other health conditions besides cancer. It is key to preserve the health and allow the elderly to live the rest of their lives out of harm. CEMEX threatens this as the air pollution will also negatively affect the elderly generation. I am personally concerned for the recovery and health of my grandma that could potentially be harmed by the drilling. I want this project to be reconsidered and thoroughly evaluated as the health impacts will be devastating for the people who call the Central Valley home.

March 10, 2025

David Randall, Senior Planner

County of Fresno Department of Public Works and Planning

Development Services and Capital Projects Division

2220 Tulare Street, Sixth Floor

Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding the Draft EIR No 7763 on the CEMEX Project. This projects threatens the San Joaquin River, local water quality, air quality, wild life, public safety, and local recreation. Comment 608-1

- Building a 6-story hole next to a river that can flood which can cause water loss and contamination raises serious concerns. Comment 608-2
- Building a 6-story hole next to where the San Joaquin River Parkway is to be built raises serious concerns. How will the 300-foot buffer be met? Comment 608-3
- Also of concern is blasting, drilling, and crushing hard rock so close to the river, the Parkway, and the road to Millerton Lake. How will these be able to be used during these activities? Comment 608-4
- The above stated activities have impacts on birds, fish, and other wild life that have not been adequately analyzed. Comment 608-5

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional, stronger mitigation measures, and financial guarantees from CEMEX. Comment 608-6

Thank you for your time and consideration.

Sincerely,

Marie Motta

15185 San Joaquin

Kerman, CA 93630

Marie Motta
15185 W. San Joaquin Ave.
Kerman, CA 93630

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David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services & Capital Projects Division
2220 Tulare St, Sixth Floor
Fresno, CA 93721

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Marie Motta
15185 San Joaquin
Kerman, CA 93630

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Ms. Motta

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

David Randall, Senior Planner

Fresno County Public Works & Planning

Department Development Services & Capital Projects Division

2220 Tulare St., 6th Floor

Fresno, CA 93721

FORMAL OBJECTION TO CEMEX'S MINE PROPOSAL

Dear Mr. Randall,

As residents and property owners on Bluff Avenue, we are writing to you to express that we are entirely opposed to CEMEX'S mine proposal along the San Joaquin River based on the following:

Comment 609-1

CEMEX's argument that if the project isn't approved, the Fresno region will lose the economic and environmental benefits of locally sourced materials is completely meritless.

Comment 609-2

Per Fresnoland investigation, based on thousands of pages of technical documents, environmental reports, and state geological records, CEMEX'S mine proposal is a needless assault on the San Joaquin River to extract materials. State records reveal that the Fresno area already has a staggering surplus of locally sourced gravel which is one of the largest in the state. According to the California Geological Survey, the Fresno metro area currently has nearly 200% more gravel than is needed for the next 50 years coming from local mines. The Kings River has roughly 2 billion tons of easily available surface gravel (enough for 500 years at Fresno's current 4 million-ton annual rate). As such, CEMEX's proposal to blast a new massive crater is completely unnecessary and is purely based on corporate greed. If the Board of Supervisors approve the mine, the asset value claimed by the company would skyrocket. At current gravel prices ($10-$50 per ton), the total gravel forecasted by CEMEX to come from the site could be valued at $2 billion to $10 billion.

CEMEX'S mine proposal will have a devastating impact on the San Joaquin River.

Comment 609-3

CEMEX's plan targets a 300-acre stretch of the San Joaquin River which is already ranked among America's most polluted waterways. Decades of extraction have left virtually no surface gravel intact, according to reporting by The Fresno Bee. The significant additional extraction by the CEMEX's mine proposal would have a massive negative impact on the river's flow, salmon runs and wetlands.

Comment 609-4

CEMEX'S mine proposal will have a significant negative impact on the traffic on Friant Road.

If approved, CEMEX's project would double its gravel output, sending an estimated 400,000 trucks down Friant Road annually (up from 100,000 in the 1980s and 250,000 in 2023). Each truck causes wear equivalent to 5,000 cars, meaning the project would add the impact of 2 billion car trips to north Fresno's streets every year in a region already deadlocked over how to pay for its existing road quality crisis.

The road and traffic conditions on Friant Road are already dreadful. There have been many fatalities at every intersection of Friant. Woodward Park attracts significant number of pedestrians and bicyclists. CEMEX's mine proposal and the significant additional traffic it brings would make Friant Road substantially more unsafe.

Wherefore, we request that CEMEX's mine proposal be denied.

Thank you for your attention.

Shirinnaz Shauna Salehi, Esq.

Shirinnaz Salehi 3/7/25

Kyan Salehi, DMD, MsD

Kyan Salehi 3/7/25

From: Shama & Kyan Salehi
412 W. Bluff Ave
Fresno, CA 93711

FRESNO CA 936
10 MAR 2025 PM 1 L

To: David Randall
Fresno County Public Works & Planning
Department Development
Services & Capital projects Division
220 Tulare St., 6th Floor
Fresno, CA 93721

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STEVEN E. WHITE, DIRECTOR

March 17, 2025

Shirinnaz Shauna Salehi & Kyan Salehi
412 W. Bluff Ave
Fresno, CA 93711

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Mr. and Mrs. Salehi

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

3/10/2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 610-1

Impacts on Water Quality & the San Joaquin River

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows, yet fails to provide clear solutions.

Comment 610-2

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 610-3

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 610-4

/

Impacts on the San Joaquin River Parkway & Recreation

Comment 610-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

- The DEIR should identify the timeframe and exact location of the trail to be constructed.
- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

Comment 610-6

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 610-7

The DEIR identifies several unavoidable negative impacts, including:

- **Scenic Degradation:** The project will harm scenic views, with proposed mitigation occurring only after the harm takes place (rock staining after mining phases) This constitutes an inappropriate deferral of mitigation which is not allowed under CEQA.
- **Traffic Congestion:** Significant traffic impacts are expected, yet there is no guaranteed funding or timeline for necessary road improvements. How will the County ensure that CEMEX is held accountable for road damage, including truck debris and safety hazards? The lack of detail on *how* mitigation takes place is just one example of the inadequacy of the DEIR. The docu

Comment 610-8

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 610-9

Threats to Wildlife

Comment 610-10

The DEIR fails to adequately analyze the impact on species like Swainson's hawk, Tricolored blackbird, Burrowing owl, and Western red bat. Drilling, blasting, and excavation could disrupt nesting and migration patterns, but those impacts are not identified or evaluated. The proposed mitigation measures do not comply with existing regulations for protection.

Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 610-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,

Bryan Hamer

472 W. Houston Ave

Clovis, CA 93611

Bryan Hamer
472 W Houston Ave
Clovis, CA 93611

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David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

93721-212706

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

Bryan Hamer
472 W. Houston Ave
Clovis, CA 93611

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Mr. Hamer

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

6072 North Sequoia Avenue

Fresno, CA 93711

Radmd1@aol.com

March 8, 2025

David Randall, Senior Planner

Fresno County Public Works & Planning Department Development Services & Capital Projects Division

2220 Tulare St., 6th Floor Fresno, CA 93721

Dear Mr. Randall:

Comment 611-1

I would like to urge you and Fresno county to reject the CEMEX Rockfield Expansion and its DEIR. My concerns are many, including my belief that the DEIR does not adequately evaluate the damage to our community, including the city of Fresno, adjacent county areas, the San Joaquin Parkway, and the river. Damage will occur due to heavy traffic, noise, air pollution, and probable water pollution of the river and aquifers. There is no need for such a radical and long-term manipulation of the ground and river near large populations.

Sincerely,

William Podolsky, MD

William Podolsky M.D.
6072 N Sequoia Ave.
Fresno, CA 93711-1257

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David Randall, Senior Planner
Fresno Co. Public Works + Planning
Dept. Development Services & Capital Projects
2220 Tulare St., 6th Floor
Fresno
CA 93721

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 17, 2025

William Podolsky
6072 North Sequoia Avenue
Fresno, CA 93711

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Mr. Podolsky

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

3/8/2025

David Randall, Senior Planner
County of Fresno Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Subject: Public Comment on CEMEX Rockfield Quarry Modification Project EIR

Dear Mr. Randall,

I am writing to express my concerns regarding Draft Environmental Impact Report (DEIR) No. 7763 for the proposed CEMEX Rockfield Expansion Project. This project threatens the San Joaquin River, local water quality, air quality, public recreation, wildlife, and public safety. Many of the proposed mitigation measures are inadequate, and some impacts lack any mitigation at all.

Comment 612-1

Impacts on Water Quality & the San Joaquin River

The project involves deep mining next to the San Joaquin River, raising serious concerns about water loss and contamination. The DEIR acknowledges that mining could reduce river flows yet fails to provide clear solutions.

Comment 612-2

The DEIR should identify impacts to downstream water users from the dewatering of the pits and potential capture of the river during flood events.

- What is CEMEX's plan if major flooding, like the 1997 flood, breaches the levee and captures the quarry pit?
- Who will be responsible for cleanup and long-term damage if the pit becomes part of the river system?

Comment 612-3

Additionally, the groundwater data used for the DEIR was conducted during a low river flow period. The DEIR should evaluate the groundwater data at different flow rates since the document identifies the fact that there is groundwater/surface water interaction at both sites.

Comment 612-4

Impacts on the San Joaquin River Parkway & Recreation

Comment 612-5

CEMEX has referenced potential trail easements for public use, yet the DEIR lacks clear commitments or a timeline.

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- The DEIR should describe how the proposed trails meet the San Joaquin River Parkway Master Plan's requirement for a 300-foot buffer between mining operations and public access
- The DEIR should identify that CEMEX is responsible for constructing and maintaining the trail if the trail is used as a community benefit of the project.

The DEIR uses out of date information when identifying recreational sites in close proximity to the quarry. The Noise from rock crushing, blasting, and drilling will negatively impact visitors to Lost Lake Park, Ledger Island, and Sumner Peck Ranch, but these noise impacts are not evaluated. The DEIR should fully analyze these impacts and identify appropriate mitigation measures for the impacts.

Comment 612-6

Lack of Mitigation for Visual, Traffic, and Air Quality Impacts

Comment 612-7

The DEIR identifies several unavoidable negative impacts, including:

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Comment 612-8

- **Air Quality:** The DEIR underestimates the project's impact by comparing emissions to current operations rather than a no-project scenario. Why was this approach taken instead of analyzing the full environmental cost of continued mining?

Comment 612-9

Threats to Wildlife

Comment 612-10

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Additionally, the DEIR uses Alaska-based standards to assess fish protection instead of California-specific guidelines. Are these standards appropriate for protecting spring-run Chinook salmon in the San Joaquin River?

The biology section of the DEIR leaves more questions than it answers, and therefore does not fulfill the CEQA requirements to fully evaluate and disclose impacts, and propose mitigation measures that will reduce those impacts. This section should be completely rewritten and recirculated for public comment.

Conclusion

Comment 612-11

Given the significant impacts to the river, wildlife, public safety, and air quality, the County should require additional analysis, stronger mitigation measures, and financial guarantees from CEMEX. The additional information will need to be drafted and recirculated for public review before the finalizing the environmental impact report for the project.

Thank you for your time and consideration.

Sincerely,

Nathan Schramm
4353 N Harrison Fresno, CA 93704

Schramm
93704

FRESNO CA 936
10 MAR 2025 PM 2 L

David Randall, SR Planner
County of Fresno Department of Public Works & Planning
Development Services & Capital Projects Division
2200 Tulare St Sixth Floor
Fresno, CA 93721

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STEVEN E. WHITE, DIRECTOR

March 17, 2025

Nathan Schramm
4353 N. Harrison
Fresno, CA 93704

Comment letter on CEMEX Rockfield Quarry EIR 7763

Dear Mr. Schramm

We received your letter regarding the CEMEX Project. Thank you for your participation in this important community process, your comments have been added to the project file and will be provided to the Planning Commission prior to their consideration of the Application for the project.

Sincerely,

David Randall

David Randall, Senior Planner
DRandall@FresnoCountyCA.gov

Enc:

BENCHMARK RESOURCES

Sacramento • Oakland